

# MAPPING THE LANGUAGE OF SPICES

A CORPUS-BASED, PHILOLOGICAL STUDY ON THE WORDS OF THE SPICE DOMAIN

---

GÁBOR PARTI

*Doctor of Philosophy*

*The Hong Kong Polytechnic University*

INITIAL SUBMISSION FOR  
EXAMINATION PURPOSE

— INITIAL SUBMISSION FOR EXAMINATION PURPOSE —

Typeset in Brill Typeface version 4.0 with Lua<sup>T</sup>E<sub>X</sub> on August 1, 2022 (Revised on September 1, 2022).

© Gábor Parti, 2022. All rights reserved.

↓ Hong Kong

The Hong Kong Polytechnic University  
Department of Chinese and Bilingual Studies

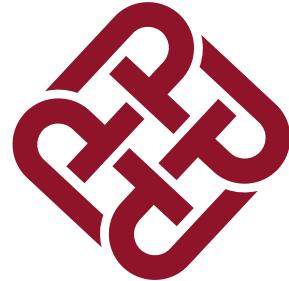
# MAPPING THE LANGUAGE OF SPICES



## A CORPUS-BASED, PHILOLOGICAL STUDY ON THE WORDS OF THE SPICE DOMAIN

*by*

GÁBOR PARTI



*A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy*

— INITIAL SUBMISSION FOR EXAMINATION PURPOSE —

August, 2022



## Certificate of originality

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it reproduces no material previously published or written, nor material that has been accepted for the award of any other degree or diploma, except where due acknowledgment has been made in the text.

\_\_\_\_\_ (Signed)

*Gábor Parti* \_\_\_\_\_ (Name of Student)



# Dedication

This dissertation is dedicated to the indigenous peoples of the world.



# Abstract

The majority of existing literature on spices is found in the areas of gastronomy, botany, and history. This study investigates spices on a linguistic level and aims to be a comprehensive linguistic account on the items of the spice trade. Some of these dried plant matter were highly desired at certain points in history, due to their attractive aroma and medicinal value, thus they were ideal products of trade early on. Cultural contact and exchange, and the introduction of new cultural items begets situations of language contact and linguistic acculturation, and so in the case of spices, we not only have a set of items that traveled around the world, but also a set of names. This domain is very rich in loanwords and *Wanderwörter*, but also supplies us with a myriad of cases where spice names are conventional innovations. To make it more interesting, the thesis compares English, Chinese, and Arabic, languages that represent major powers in the spice trade at different times. The thesis has two main parts. Part one identifies the spices under scope with a brief discussion on their botany and history, followed by a presentation of the geographic and linguistic diffusion of spices and their names. Basically, we track and explain word origins and subsequent spread by tracing the materials and the propagation of the accompanying *Wanderwort*. This part relies on philological literature, and tools from historical linguistics, such as etymological research. Part two examines the language of spices, the terminology and nomenclature related to the spice domain from linguistic-cognitive perspectives. On one hand, it is a systematic investigation on how humans name spices: what are the mechanism and motivations behind the naming principles, and how this relates to the salient sensory features of the products (strong gustatory, olfactory, or visual stimuli). On the other hand, it looks at to what degree spice terminology is used in daily language; which is proposed to be a gauge of a spice's embeddedness in a culture. This part relies on corpora and corpus linguistic tools. Conclusions are made on the connections between the physical properties of the spices, their patterns of diffusion, and the prototypical spices and their effect of naming principles. Besides being a novel and original approach to research and categorize spices from a linguistic point of view, this study offers new insights to our knowledge about (wandering) loanwords, and the effect of the highly sensory nature of spices in the naming process when adopted by a community. It is also intended to be a useful working database for future research, and aims to dispel some of the chaos and confusion surrounding spice names.



# Acknowledgments

First of all, I would like to thank Professor Huang Chu-Ren for his guidance, and all the support and kindness he gave me in this three years, ever since my first email. He not only believed in my topic, but he taught me new ways to think about words, meanings and concepts, language and cognition. Next, I would like to thank the department of Chinese and Bilingual Studies (CBS) who equipped me with a workspace, and never-ending answers to all my question regarding my PhD programme. Thanks are due to PolyU as well, to all the friendly staff and students who make this university a great place for learning, especially the library. I want to highlight the Pao Yue-Kong Library and the helpful people who work there and supply us with a great space, workshops, a wide range of books and materials, and can grant requests so professionally whenever we suggest a purchase; truly invaluable. Not to mention the lovely people who run the LibCafé. I must also thank the Research Grants Council (RGC) of Hong Kong, who funded this PhD programme via the *Hong Kong PhD Fellowship Scheme*. Lastly, I want to thank the people of Hong Kong, who welcomed me to their intriguing city.



# Contents

<b>Abstract</b>	vii
<b>Acknowledgments</b>	ix
<b>Contents</b>	xi
<b>List of Figures</b>	xvii
<b>List of Tables</b>	xxi
<b>Glossary</b>	xxv
<b>Acronyms</b>	xxvii
<b>Symbols and Notation</b>	xxix
<b>1 Introduction</b>	1
1.1 Definitions . . . . .	4
<b>2 Background</b>	7
2.1 Literature Review . . . . .	7
2.1.1 On Spices . . . . .	7
2.1.2 On Plants and Plant Names . . . . .	9
2.1.3 On Food and Foodways . . . . .	9
2.1.4 On Trade . . . . .	9
2.1.5 On Medicine and Healing . . . . .	11
2.1.6 On the Role of Spices Through Time . . . . .	13
2.1.7 On Food and Language . . . . .	13
2.2 Research Gap . . . . .	14
2.2.1 Research Questions . . . . .	15
2.3 Theoretical Framework . . . . .	15
2.3.1 Wanderwörter . . . . .	15
<b>3 Methodology</b>	17
3.1 Research Design Principles . . . . .	17
3.1.1 Identification, Confusion, Adulteration, Clarification . . . . .	18
3.1.2 Challenges in Spice Categorization . . . . .	19
3.2 Data Collection . . . . .	21

3.2.1	Collecting Spices . . . . .	21
3.2.2	Collecting and Annotating the Names . . . . .	22
3.2.3	Collecting Etymologies . . . . .	25
3.3	Sources . . . . .	25
3.3.1	Primary Sources . . . . .	25
3.3.2	Etymological Dictionaries . . . . .	26
3.3.3	Reference Dictionaries . . . . .	26
3.4	Corpora . . . . .	26
<b>4</b>	<b>The Data: Spices</b>	<b>29</b>
4.1	Allspice . . . . .	31
4.1.1	The Botany, Origin, and Cultivation of Allspice . . . . .	32
4.1.2	The History of Allspice . . . . .	33
4.1.3	The Names of Allspice . . . . .	35
4.2	Anise . . . . .	42
4.2.1	The Botany, Origin, and Cultivation of Anise . . . . .	43
4.2.2	The History of Anise . . . . .	43
4.2.3	The Names of Anise . . . . .	44
4.3	Asafoetida . . . . .	48
4.3.1	The Botany, Origin, and Cultivation of Asafoetida . . . . .	49
4.3.2	The History of Asafoetida . . . . .	49
4.3.3	The Names of Asafoetida . . . . .	49
4.4	Black Pepper . . . . .	56
4.4.1	The Botany of Black Pepper . . . . .	58
4.4.2	The History of Black Pepper . . . . .	60
4.4.3	The Names of Black Pepper . . . . .	61
4.5	Caraway . . . . .	63
4.5.1	The Botany, Origin, and Cultivation of Caraway . . . . .	64
4.5.2	The History of Caraway . . . . .	64
4.5.3	The Names of Caraway . . . . .	64
4.6	Cardamom . . . . .	67
4.6.1	The Botany, Origins, and Cultivation of Cardamom . . . . .	68
4.6.2	The History of Cardamom . . . . .	68
4.6.3	A Crowd of Cardamoms: Identity and Confusion with Other Spices . . . . .	69
4.6.4	Some Remarks on Common Names . . . . .	71
4.6.5	The Names of Cardamom . . . . .	72
4.7	Chile . . . . .	79
4.7.1	The Botany, Origins, and Cultivation of Chile . . . . .	79
4.7.2	The History of Chile . . . . .	79
4.7.3	The Names of Chile . . . . .	79

4.8	Cinnamon and Cassia . . . . .	83
4.8.1	The Botany, Origin, and Cultivation of Cinnamon and Cassia . . . . .	85
4.8.2	The Identity of Cinnamon and Cassia . . . . .	86
4.8.3	The History of Cinnamon and Cassia . . . . .	88
4.8.4	The Names of Cinnamon and Cassia . . . . .	91
4.9	Clove . . . . .	101
4.9.1	The Botany, Origins, and Cultivation of Clove . . . . .	101
4.9.2	The History of Clove . . . . .	101
4.9.3	The Names of Clove . . . . .	101
4.10	Coriander . . . . .	103
4.10.1	The Botany, Origins, and Cultivation of Coriander . . . . .	103
4.10.2	The History of Coriander . . . . .	105
4.10.3	The Names of Coriander . . . . .	105
4.11	Cumin . . . . .	109
4.11.1	The Botany of Cumin . . . . .	110
4.11.2	The History of Cumin . . . . .	110
4.11.3	The Names of Cumin . . . . .	110
4.11.4	Dill . . . . .	112
4.11.5	The Botany of Dill . . . . .	112
4.11.6	The History of Dill . . . . .	112
4.11.7	The Names of Dill . . . . .	112
4.12	Fennel . . . . .	114
4.12.1	The Botany of Fennel . . . . .	114
4.12.2	The History of Fennel . . . . .	114
4.12.3	The Names of Fennel . . . . .	114
4.12.4	Fenugreek . . . . .	117
4.12.5	The Botany of Fenugreek . . . . .	117
4.12.6	The History of Fenugreek . . . . .	117
4.12.7	The Names of Fenugreek . . . . .	117
4.13	Ginger . . . . .	119
4.13.1	The Botany of Ginger . . . . .	119
4.13.2	The History of Ginger . . . . .	119
4.13.3	The Names of Ginger . . . . .	119
4.14	Long Pepper . . . . .	122
4.14.1	The Botany, Origins, and Cultivation of Long Pepper . . . . .	122
4.14.2	The History of Long Pepper . . . . .	122
4.14.3	The Names of Long Pepper . . . . .	122
4.15	Nutmeg & Mace . . . . .	125
4.15.1	The Botany of Nutmeg . . . . .	126
4.15.2	The History of Nutmeg . . . . .	126

4.15.3	The Names of Nutmeg . . . . .	126
4.16	Saffron . . . . .	128
4.16.1	The Botany, Origins, and Cultivation of Saffron . . . . .	129
4.16.2	The Names of Saffron . . . . .	131
4.17	Sichuan Pepper . . . . .	135
4.17.1	The Botany, Origins, and Cultivation of Sichuan Pepper . . . . .	135
4.17.2	The History of Sichuan Pepper . . . . .	135
4.17.3	The Names of Sichuan Pepper . . . . .	135
4.18	Star Anise . . . . .	138
4.18.1	The Botany, Origins, and Cultivation of Star Anise . . . . .	138
4.18.2	The History of Star Anise . . . . .	138
4.18.3	The Names of Star Anise . . . . .	139
4.19	Turmeric . . . . .	141
4.19.1	The Botany, Origins, and Cultivation of Turmeric . . . . .	141
4.19.2	The History of Turmeric . . . . .	141
4.19.3	The Names of Turmeric . . . . .	141
4.20	Vanilla . . . . .	144
4.20.1	The Names of Vanilla . . . . .	145
<b>5</b>	<b>The Diffusion of Spices</b>	<b>149</b>
5.1	The Geographic Distribution of Spices . . . . .	149
5.2	The Spreadability of Spices . . . . .	151
5.3	The Linguistic Diffusion of Spices . . . . .	155
5.3.1	Borrowings: Loanwords and <i>Wanderwörter</i> . . . . .	155
5.3.2	Spatial Trajectories: Tracing Spice Terms Around the Globe . . . . .	157
5.3.3	Temporal Trajectories: The Attestation of Spice Words . . . . .	159
5.4	The Donor Languages . . . . .	166
<b>6</b>	<b>The Names of Spices</b>	<b>169</b>
6.1	Overview: Spice Names in Numbers . . . . .	169
6.2	The Analysis of Spice Nomenclature . . . . .	171
6.2.1	Analyzability and Structure . . . . .	172
6.2.2	Spice Term Anatomy: Prototypes and Distinguishing Words . . . . .	173
6.3	The Case of Star Anise . . . . .	177
6.4	The Case of Cinnamon . . . . .	179
6.5	One . . . . .	179
6.6	Methods and Data . . . . .	181
6.7	Results and Discussion . . . . .	182
6.7.1	The canela group . . . . .	182
6.7.2	The kinnamon group . . . . .	184

6.7.3	The korica group . . . . .	184
6.7.4	The qirfa group . . . . .	185
6.7.5	The darchin group . . . . .	185
6.7.6	The gui group . . . . .	185
6.7.7	Others . . . . .	185
6.8	Two . . . . .	186
6.9	Conclusion . . . . .	186
6.10	Limitations . . . . .	186
<b>7</b>	<b>The Language of Spices</b>	<b>187</b>
7.1	The Case of Pepper . . . . .	187
7.1.1	The Distribution of Pepper . . . . .	187
7.1.2	The Diffusion of Pepper . . . . .	189
7.1.3	The Role of Pepper in English: A Brief Contemplation About Spiciness . . . . .	191
7.2	<i>Pepper</i> as a Lexical Item . . . . .	192
<b>Conclusion</b>		<b>195</b>
7.3	Future Studies . . . . .	195
<b>Primary Sources</b>		<b>197</b>
<b>Bibliography</b>		<b>199</b>



# List of Figures

4.1	Allspice berries, powder, and leaves from <i>Pimenta dioica</i> . . . . .	31
4.2	Anise <i>Pimpinella anisum</i> . . . . .	42
4.3	Asafoetida in various forms, and one of its principal sources <i>Ferula assa-foetida</i> in the Kyzylkum Desert. Credit: Glorian; Aromatique; Public Domain . . . . .	48
4.4	Etymological stages in the progression of prototypical names of asafoetida. . . . .	55
4.5	Caraway <i>Carum carvi</i> . . . . .	63
4.6	True cardamom . . . . .	67
4.7	False cardamoms . . . . .	69
4.8	Etymological stages in the progression of prototypical names of cardamom. . . . .	78
4.9	Chile . . . . .	79
4.10	Cinnamon quills, powder, and leaves from <i>Cinnamomum verum</i> . . . . .	83
4.11	Cassia sticks and buds from <i>Cinnamomum cassia</i> . . . . .	84
4.12	Cinnamon tree in a 10 <sup>th</sup> -century Arabic translation of Dioscorides's <i>De Materia Medica</i> , a manuscript at the Oriental Collection of the University Library of Leiden (Shelfmark: Or. 289). This copy is from Samarkand, and dates to 1083, the time of the Karakhanids (Dioscorides, 1083, f. 9a) . . . . .	99
4.13	Clove . . . . .	101
4.14	Coriander . . . . .	103
4.15	Cumin . . . . .	109
4.16	Dill . . . . .	112
4.17	Fennel . . . . .	114
4.18	Fenugreek . . . . .	117
4.19	Ginger . . . . .	119
4.20	Nutmeg, <i>Elettaria nutmegum</i> . . . . .	125
4.21	Saffron threads and flowers . . . . .	128
4.22	Different grades of saffron. From left to right: Daste (bunch saffron), Pushal, Negin, Super Negin, Sargol, Konj (white saffron) . . . . .	130
4.23	Saffron-gatherers. Details from the mural on the east wall in room 3a, first floor, at Xeste 3 site, Akrotiri (Doumas, 1992, p. 152). . . . .	130
4.24	Sichuan Pepper . . . . .	135
4.25	Star Anise <i>Ilicium verum</i> . Credit: Aromatiques. . . . .	138
4.26	vanilla... <i>Vanilla planifolia</i> ? Credits: Aromatiques; Wikimedia Commons (CC4.o) .	141
4.27	vanilla... <i>Vanilla planifolia</i> ? Credits: Aromatiques; Wikimedia Commons (CC4.o) .	144
5.1	The distribution of spice plants by the macroarea of their native habitat. . . . .	149

5.2	Spices ranked according to the total number of regions they grow in, both native and introduced. . . . .	150
5.3	Spices ranked by their spreadability index, showing which spice plants spread to more regions, taking into account the initial state of their distribution. . . . .	153
5.4	The approximate geographical origins of the spices in this thesis; size represents their spreadability index. For a full interactive version, please visit <a href="https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/spices_map.html">https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/spices_map.html</a>	154
5.5	Ratio of borrowed and not borrowed terms in the spice nomenclature. . . . .	157
5.6	The diffusion of spice terminology in English, focusing on loanwords and Wanderwörter. For a full interactive version, please visit <a href="https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion_en.html">https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion_en.html</a> . . . . .	158
5.7	The diffusion of spice terminology in Arabic, focusing on loanwords and Wanderwörter. For a full interactive version, please visit <a href="https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion_ar.html">https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion_ar.html</a> . . . . .	160
5.8	The diffusion of spice terminology in Chinese, focusing on loanwords and Wanderwörter. For a full interactive version, please visit <a href="https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion_zh.html">https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion_zh.html</a> . . . . .	161
5.9	Spice terms attested in English. . . . .	162
5.10	. . . . .	163
5.11	. . . . .	164
5.12	. . . . .	165
5.13	. . . . .	165
5.14	All identified donor languages of loanwords in the spice domain. . . . .	166
5.15	The top donor languages of English, Arabic, and Chinese loanwords in the spice domain. . . . .	167
5.16	The top donor languages of English, Arabic, and Chinese loanwords in the spice domain. . . . .	167
6.1	The distribution of spice names across the three languages. . . . .	169
6.2	Top and bottom spices by number of names. . . . .	170
6.3	Top spices by number of names, broken down by language. . . . .	171
6.4	The ratios of the analyzability of words in the spice name dataset. . . . .	173
6.5	Top 5 headwords appearing in spice names, by language. . . . .	175
6.6	. . . . .	175
6.7	Top 5 modifiers appearing in spice names, by language. . . . .	176
6.8	Types of modifiers. . . . .	176
6.9	. . . . .	177
6.10	Distribution of words for tea from Sinitic <i>cha</i> and Minnan <i>te</i> , based on the data around the globe. . . . .	180
6.11	The distribution of <i>cinnamonic</i> words in a few languages around the globe. . . . .	183

7.1	The distribution of names for pepper ( <i>Piper nigrum</i> ). . . . .	188
7.2	The diffusion of names for pepper. . . . .	191
7.3	A timeline of words and phrases derived from pepper. . . . .	194



# List of Tables

1.1	The set of 24 spices included in this project.	6
3.1	The list of corpora consulted in the thesis.	27
4.1	Various names for allspice in English.	39
4.2	Various names for allspice in Arabic.	40
4.3	Various names for allspice in Chinese.	41
4.4	Conventionalized names for allspice in English, Arabic, and Chinese, found in dictionaries.	41
4.5	Various names for anise in English.	44
4.6	Various names for anise in Arabic.	46
4.7	Various names for anise in Chinese.	46
4.8	Conventionalized names for anise in English, Arabic, and Chinese, found in dictionaries.	47
4.9	Various names for asafoetida in English.	51
4.10	Various names for asafoetida in Arabic.	52
4.11	Various names for asafoetida in Chinese.	53
4.12	Conventionalized names for asafoetida in English, Arabic, and Chinese, found in dictionaries.	54
4.13	Various names for caraway in English.	64
4.14	Various names for caraway in Arabic.	65
4.15	Various names for caraway in Chinese.	65
4.16	Conventionalized names for caraway in English, Arabic, and Chinese, found in dictionaries.	66
4.17	Cardamoms in the genera <i>Amomum</i> , and <i>Aframomum</i> .	69
4.18	Various names for cardamom in English.	72
4.19	Various names for cardamom in Arabic.	76
4.20	Various names for cardamom in Chinese.	77
4.21	Conventionalized names for cardamom in English, Arabic, and Chinese, found in dictionaries.	78
4.22	Various names for chile in English.	80
4.23	Various names for chile in Arabic.	80
4.24	Various names for chile in Chinese.	81
4.25	Conventionalized names for chile in English, Arabic, and Chinese, found in dictionaries.	82
4.26	<i>Cinnamomum spp.</i> cultivated for commercial cinnamon and cassia, their common names and native regions.	87
4.27	Various names for cinnamon in English.	94

4.28	Various names for cinnamon in Arabic. . . . .	98
4.29	Various names for cinnamon in Chinese. . . . .	100
4.30	Conventionalized names for cinnamon in English, Arabic, and Chinese, found in dictionaries. . . . .	100
4.31	Various names for clove in English. . . . .	102
4.32	Various names for clove in Arabic. . . . .	102
4.33	Various names for clove in Chinese. . . . .	102
4.34	Conventionalized names for clove in English, Arabic, and Chinese, found in dictionaries. .	102
4.35	Various names for coriander in English. . . . .	107
4.36	Various names for coriander in Arabic. . . . .	107
4.37	Various names for coriander in Chinese. . . . .	107
4.38	Conventionalized names for coriander in English, Arabic, and Chinese, found in dictionaries. . . . .	108
4.39	Various names for cumin in English. . . . .	110
4.40	Various names for cumin in Arabic. . . . .	110
4.41	Various names for cumin in Chinese. . . . .	111
4.42	Conventionalized names for cumin in English, Arabic, and Chinese, found in dictio- naries. . . . .	111
4.43	Various names for dill in English. . . . .	113
4.44	Various names for dill in Arabic. . . . .	113
4.45	Various names for dill in Chinese. . . . .	113
4.46	Conventionalized names for dill in English, Arabic, and Chinese, found in dictionaries. .	113
4.47	Various names for fennel in English. . . . .	115
4.48	Various names for fennel in Arabic. . . . .	115
4.49	Various names for fennel in Chinese. . . . .	115
4.50	Conventionalized names for fennel in English, Arabic, and Chinese, found in dictio- naries. . . . .	116
4.51	Various names for fenugreek in English. . . . .	118
4.52	Various names for fenugreek in Arabic. . . . .	118
4.53	Various names for fenugreek in Chinese. . . . .	118
4.54	Conventionalized names for fenugreek in English, Arabic, and Chinese, found in dictionaries. . . . .	118
4.55	Various names for ginger in English. . . . .	120
4.56	Various names for ginger in Arabic. . . . .	120
4.57	Various names for ginger in Chinese. . . . .	121
4.58	Conventionalized names for ginger in English, Arabic, and Chinese, found in dictio- naries. . . . .	121
4.59	Various names for nutmeg in English. . . . .	126
4.60	Various names for nutmeg in Arabic. . . . .	126
4.61	Various names for nutmeg in Chinese. . . . .	126

4.62	Conventionalized names for nutmeg in English, Arabic, and Chinese, found in dictionaries. . . . .	127
4.63	Various names for saffron in English. . . . .	131
4.64	Various names for saffron in Arabic. . . . .	133
4.65	Various names for saffron in Chinese. . . . .	133
4.66	Conventionalized names for saffron in English, Arabic, and Chinese, found in dictionaries. . . . .	134
4.67	Various names for Sichuan pepper in English. . . . .	136
4.68	Various names for Sichuan pepper in Arabic. . . . .	136
4.69	Various names for Sichuan pepper in Chinese. . . . .	136
4.70	Conventionalized names for Sichuan pepper in English, Arabic, and Chinese, found in dictionaries. . . . .	137
4.71	Various names for star anise in English. . . . .	139
4.72	Various names for star anise in Arabic. . . . .	139
4.73	Various names for star anise in Chinese. . . . .	140
4.74	Conventionalized names for star anise in English, Arabic, and Chinese, found in dictionaries. . . . .	140
4.75	Various names for turmeric in English. . . . .	142
4.76	Various names for turmeric in Arabic. . . . .	142
4.77	Various names for turmeric in Chinese. . . . .	142
4.78	Conventionalized names for turmeric in English, Arabic, and Chinese, found in dictionaries. . . . .	143
4.79	Various names for vanilla in English. . . . .	146
4.80	Various names for vanilla in Arabic. . . . .	146
4.81	Various names for vanilla in Chinese. . . . .	146
4.82	Conventionalized names for vanilla in English, Arabic, and Chinese, found in dictionaries. . . . .	147
5.1	Spice nomenclature, showing if the terms are borrowed or not. . . . .	156
6.1	Analyzability of words in the spice name dataset. . . . .	172
6.2	Cap . . . . .	179



# Glossary

Ayurveda	traditional Indian medicine <a href="#">13</a>
bencao	the Chinese term for <i>materia medica</i> , works that record the sources and applications of medicinal substances (本草) <sup>1</sup> <a href="#">12</a>
cultigen	a cultivated plant species with no known wild ancestor <a href="#">129</a>
cultivar	a plant variety that has arisen or persists only in cultivation <a href="#">103</a>
materia medica	an encyclopedic treatise of medicinal materials obtained from plants, animals, and minerals <a href="#">12</a>
pharmacopeia	a treatise on medicinal drugs and their formulas <a href="#">12</a>
phytonym	a plant name (non-taxonomic) <a href="#">47</a>
taxon	taxonomic group or unit, especially when hierarchic rank is not specified <sup>2</sup> <a href="#">21</a>
Wanderwort	a word borrowed from one language to another across a broad geographical area often as a result of trade or adoption of newly introduced items or cultural practices <sup>3</sup> <a href="#">3</a>

---

<sup>1</sup>Z. Zhao et al., [2018](#).

<sup>2</sup>back-formation from ‘*taxonomy*’

<sup>3</sup>Merriam-Webster, [n.d.](#).



# Acronyms

AHD	American Heritage Dictionary of the English Language <a href="#">45</a>
BCGM	Bencao Gangmu <a href="#">53</a>
BHL	Biodiversity Heritage Library <a href="#">22</a>
BNC	British National Corpus <a href="#">156</a>
CAD	Chicago Assyrian Dictionary <a href="#">75</a>
CBETA	Chinese Buddhist Electronic Texts Association <a href="#">27</a>
CEC	Cambridge English-Chinese (Traditional) Dictionary <a href="#">47</a>
CTP	Chinese Text Project <a href="#">27</a>
EHBC	English Historical Book Collection <a href="#">27</a>
EI2	Encyclopaedia of Islam, Second Edition <a href="#">96</a>
EJ	Encyclopaedia Judaica <a href="#">93</a>
FAOSTAT	Food and Agriculture Organization Corporate Statistical DB <a href="#">86</a>
FoC	Flora of China <a href="#">22</a>
GBIF	Global Biodiversity Information Facility <a href="#">22</a>
HW	Hans-Wehr: A Dictionary of Modern Written Arabic <a href="#">95</a>
IPNI	International Plant Names Index <a href="#">22</a>
KJV	King James Version of the Bible <a href="#">45</a>
KSUCCA	King Saud University Corpus of Classical Arabic <a href="#">27</a>
LSJ	Liddel-Scott-Jones: A Greek-English Lexicon <a href="#">73</a>
MC	Middle Chinese <a href="#">17</a>
MW	Merriam-Webster's Unabridged Dictionary <a href="#">4</a>
NFCM	Nanfang Caomu Zhuang <a href="#">76</a>
NRSV	New Revised Standard Version of the Bible <a href="#">45</a>
NS	Nişanyan Sözlük <a href="#">75</a>
OC	Old Chinese <a href="#">98</a>
OED	Oxford English Dictionary <a href="#">4</a>
PIE	Proto-Indo-European <a href="#">50</a>
POWO	Plants of The World Online <a href="#">22</a>
PWN	Princeton WordNet <a href="#">19</a>
QTS	全唐詩 Quan Tangshi [Complete Tang Poems] <a href="#">27</a>
SCB	Serbian-Croatian-Bosnian <a href="#">152</a>
SEAlang	Southeast Asian Languages Library <a href="#">71</a>
SkE	Sketch Engine <a href="#">27</a>
SS	Scripta Sinica <a href="#">27</a>

<b>TCM</b>	Traditional Chinese Medicine <a href="#">12</a>
<b>TLFi</b>	Trésor de la Langue Française informatisé <a href="#">91</a>
<b>TPGJ</b>	Taiping Guangji <a href="#">53</a>
<b>TPL</b>	The Plant List <a href="#">22</a>
<b>WALS</b>	The World Atlas of Language Structures <a href="#">180</a>
<b>WFO</b>	World Flora Online <a href="#">22</a>
<b>WOLD</b>	The World Loanword Database <a href="#">172</a>
<b>YYZZ</b>	Youyang Zazu <a href="#">53</a>

# Symbols and Notation

*	reconstructed form
<	developed from
>	developed into
<?	uncertain development
†	obsolete
a.	<i>ante</i> , attested before the year
ca.	<i>circa</i> , around the year/century
<i>fragrance</i>	italic: lexical item, a word or phrase
[fragrance]	square brackets: gloss, literal meaning
‘fragrance’	single quotation marks: meaning, sense
FRAGRANCE	small capitals: a concept



# Introduction

UNDERSTANDING the language of spices is a key to open a door to this world. A door that leads to the realization that our cultures—and our foods—are deeply interconnected, and that they have been so for thousands of years. I will try to demonstrate this by introducing these fascinating substances from a new perspective, the perspective of language. It is trendy nowadays to talk about *foodways*, a term that refers to “the eating habits and culinary practices of people, regions, or historical periods” (Allen et al., 2013, vol. 2, p. 289), and food history, a relatively young interdisciplinary academic field is starting to gain traction as well. But the connections between language and food are one of the most interesting examples of contemporary humanities research I have come across Jurafsky (see 2014). There is a segment of this topic—the spice domain—which encompasses products that have had profound effects of human imagination, culture, and history. Although overshadowed by the serious and heavy questions of nutrition, scientific research on spices was never a fringe field; it is enough to look at the many pharmacological studies that dive into the chemistry of these materials to see that people are still interested in their health effects, as much as their taste and aroma.

As spices are not a necessity to human survival, but rather constitute an enthralling phenomenon that can be studied from many angles, research on spices has been embraced by many historians, a few botanists and literary critics, and countless culinary enthusiasts. It may be so that spices are not vital for humans, but sustenance itself is just enough to maintain life, not to enjoy it or live it to the fullest. Spices today represent the excitement, the vigor, as it is so clear from expressions in our language: to *spice up* your life is to enliven it!

## Original Contribution

This thesis aims to do a systematic investigation on spice names and related terminology, including products that were used (or still being used) medicinally, as incense, or as perfume. Aromatics that were at some point considered spices, have been traded and transported across long distances since antiquity and before, and the most coveted ones have slowly dispersed throughout the globe. Spices and the spice domain as a topic are usually discussed within the broad areas of history, botany, chemistry, and gastronomy, all concerned by very different aspects of these materials. To the best of my knowledge, there is no academic work that puts the field of linguistics in focus when discussing spices as a whole, and so this project is a unique contribution to our linguistic knowledge about the spice domain.

But why should anyone care about spices and their names? Because exploring the names of the products of the spice trade—traveling on vast networks of historic trade routes such as the Silk Road (small volume of trade), and its nautical counterpart the Maritime Silk Road (large volume of trade)—helps us to map and better understand linguistic contact and cultural exchange. These ever-

expanding trade networks, first regional, later connecting East and West were a precursor to today's globalized, interconnected world, and one of their most lucrative products was dried plant-matter. These aromatic substances were lightweight, easy to transport, and resistant to spoilage. And, of course, they were highly valued for their fragrant and pungent properties, and their reputed—both putative and real—benefits for the human body and soul. Exotic and rare spices and their role in rituals, medicine, and later cuisine made them sought after. The spice business inspired people to trade, travel, explore, and wage wars. Spices are important in world history as they are directly responsible for discoveries, colonization, and the birth of capitalism. We know a great deal about the nature of spices thanks to botanists and naturalist, their medicinal effects thanks to pharmacists and chemists, and their uses and culinary values thanks to experts of gastronomy. There is also a vast literature on the story and spread of spices thanks to researchers of history, but the careful study of their names is often neglected. This work was born due to a fascination with the global journey and etymology of spice words, in the “true sense” of the word etymology.

### Problem Statement

Soon, my attention slightly shifted towards a problem that could be best described by a lack of consistent and comprehensive understanding of spice names. The absence of proper research regarding spice terminology results in a lack of a standard, and decline of trust in secondary literature. Authors often give misguided and contradicting information regarding the origins of a name, or speculate on their meaning. There are no two authors that use the same set of names when discussing a spice, which in itself is not a problem in most cases, but it leads to problems in case of lesser known or exotic items. There is a great deal of confusion on names and identities in the spice literature, especially in lay areas aimed at the general public, such as popular histories or guidebooks. The reasons for this are several. Firstly, the experts of herbs, spices and other aromatics are chiefly botanists, food industry professionals, chemists, chefs and food writers, merchants and historians. Most people in research related to spices focus on aspects of the products other than their names: from plant morphology, chemical composition, and pharmacological effects, to social and cultural histories, their symbolism in literature, not to mention the myriad of ways on how to buy, store, mix, and use spices in creative recipes discussed by the handy spice encyclopedias tailored for gastro-enthusiasts. Relatively few linguists devoted their time and attention to trace spice origins. In short, the topic of spices requires a highly multidisciplinary expertise, and when a plant taxonomist writes about linguistics, or a culinary writer approaches history, some mistakes are due.

Secondly, there is no agreed upon inventory or reference work of spice names to cover the multitude of spices that exist, and their many names in various languages; least of all a complete list of *all the spices*. Truthfully that seems rather impossible, or at least quite a daunting task to embark on. Although the internet nowadays is full of compact guides and indices of spices assembled by people who are fascinated with spices and their colorful uses listing their names in many languages, these are not always trustworthy, and often cite no sources. Similarly, blogs and articles are most often than not dubious, and almost always require fact checking, as many are just permutations of historically

inaccurate anecdotes and origin stories. Until today there is no comprehensive treatise on spice terms within academia, and no database that focuses on, clarifies, explains, or compares their names.

This is not to say that there is no work done on spice terminology, there are a number of high quality writings from philologists, linguists, and historians well versed in one or more relevant linguistic and cultural area. The problem is that this kind of research requires a highly specialized knowledge, and in result the information already out there is sporadic, less accessible, and grossly unorganized. Key pieces of information are often hidden between the pages of books on traditional philology, literary critique, botany, medicine, economic history, and archaeology of a given region. Not to mention the many old works that are the primary sources for the aforementioned publications. Consequently, since little effort have been made to collate the data, there is a chasm between the critically researched reliable information and what the end user—whether it is a fellow researcher or a spice zealot—can easily access.

## Goals

The original goal in the beginning of this work was to gather and augment the existing information about spice names, their origins, and track their diffusion on spatial and temporal trajectories. This still constitutes the core of this thesis, and I hope to achieve this by combing through the existing literature and collecting the names of spices, amending the gaps, and correcting possible errors on the way. Doing so, the result should be a carefully researched compendium of spice names, grounded in philology and linguistics, but with the awareness of what spices are to botany, and what their role was in history. Chapter 4 presents this process and displays the data seriatim, in a linear manner.

This procedure shall manifest in a dataset of spice names, with complete lexicographical annotation including etymological information and attestation dates. This in turn, would allow me to trace the words and track the linguistic diffusion of spices through space and time, which is then can be discussed hand-in-hand with the physical diffusion of the materials. Eventually, the mapping of the spices will be the basis for a discussion on the implications of linguistic and cultural contact, and exchange, and it makes up chapter 5. This chapter ties well together with the concept of [Wanderwörter](#), ‘wandering loanwords’, a phenomenon known in the field of historical linguistics related to the topic of borrowing and material culture.

In addition to this, the data of spice names will also be the basis of a linguistic analysis, focusing on the characteristics of terms themselves presented in chapter 6. This part will include a deep dive into how spice names are created or borrowed, how prototype items beget prototype words to generate new names for novel items of trade, and into the mechanisms and motivations of linguistic acculturation and spice name propagation.

Finally, spice names will be discussed according to their role in daily language, how spice words entered the lexicon and what is their role in metaphors and idiomatic expressions. This is to trace spices’ embeddedness in a culture, and to see how significant they are in the everyday human experience, as can be seen in chapter 7.

## 1.1 Definitions

The first step is to clarify what is meant by *spices*. According to the *Oxford English Dictionary (OED)*, the definition of *spice* is as follows: “One or other of various strongly flavoured or aromatic substances of vegetable origin, obtained from tropical plants, commonly used as condiments or employment for other purposes on account of their fragrance and preservative qualities.” Similarly, the first meaning for *spice* as a noun in *Merriam-Webster’s Unabridged Dictionary (MW)* is “any of various aromatic vegetable products (such as pepper or nutmeg) used to season or flavour foods”. The Wikipedia entry on *Spice* gives slightly more information, hinting on which plant parts are frequently used as spices and mentions their food-coloring properties, while also—very appropriately—ventures beyond the culinary stance of usual dictionary definitions, stating that “spices are sometimes used in medicine, religious rituals, cosmetics or perfume production.” This notion is much more important than expressing it with a mere ‘sometimes’ could imply as we will see; before modern times, spices were much more important for the medicinal properties.

There is no universal definition on what a spice is; botany, pharmacology, gastronomy, and history all have different perspectives. However the idea about “spices” that the reader currently has in mind, is bound to be a culinary one. Some authors try to give a definition according to plant morphology, Czarra (2009, p. 9) writes about “an aromatic part of a tropical plant”, and goes on to mention bark, flower, root, and seed. J. Turner (2004, p. xix) adds gum and resin, fruit, and stigma to this listing. For a full picture, we must complement it further, as spices can come in many forms: dried tree barks (cinnamon, cassia); twigs (cassia twigs); flower buds (cloves); stigmas or styles (saffron); fruits (pepper, chili); fruit walls or pericarps (star anise); berries (allspice, juniper); seeds (nutmeg, coriander); seed coverings or arils (mace); seed pods (cardamom, vanilla); and roots and rhizomes (ginger, turmeric). Technically, every dried part of a plant can be referred to as spice, except the leaves. The green leaves—fresh or dried, but mostly used fresh—are considered herbs, and they are used for similar purposes to spices nowadays: flavouring, seasoning, garnishing. Dried leaves of herbs can be categorized as “spice herbs” (see van Wyk, 2014). The category of herbs can be problematic, because there is a botanical definition, and also a culinary definition, and the literature often confuses the two. Botanically, a herb is an annual?? plant that has a soft stem, while a culinary herb is where the leaves are used in food preparation, similar to a medicinal herb...

O’Connell (2016, p. 9) backs this view in his informative compendium, but also cites Rosengarten (1975, p. 16, as cited in O’Connell, 2016), who maintained that it is ‘extremely difficult to determine where a spice ends and a herb begins’. According to him, culinary herbs are just one group of spices. Along these lines, Britannica (n.d.) for example treats herbs and spices in a single entry. The above distinction—that herbs are the greens and spices are every other (dried) parts of a plant—is essentially nonsense to a botanist since it echoes the needs of a chef. We can give examples for both spice and herb from the same species: coriander seeds and coriander leaves (also called cilantro or Chinese parsley in the US) are both from the plant *Coriandrum sativum*. Another often mentioned difference is that herbs are soft stemmed, annual plants that die each year, in contrast to woody, spice yielding trees or bushes. This, on the other hand, is a botanical definition, and not very useful for somebody

active in the culinary arts (Allen, 2012, p. 10). Moreover, most plants we consider herbs grow in temperate climates, while spices tend to grow in tropical regions (Turner, 2004), a further classification on botanical basis. Herbs can also be categorized into culinary and medicinal herbs, and in both cases, the leafy, green parts of foliage are used for their aroma and flavour, and supposed health benefits, respectively. Defining spices and herbs is difficult because the definitions vary by discipline, depending on the needs of the expert: the gardener, the herbalist, the chef. In the present study, we focus on dried—mostly plant-based—aromatic commodities that traveled long distances due to trade and were at certain points in history considered a desired commodity or even a luxury. This is basically the definition of the historian, where the implications of climate and remoteness translated as value; spices were a produce difficult to obtain, and thus obviously expensive. Long distance transportation was possible when the plant products were hauled across deserts and oceans in a dried form, making them lightweight and less susceptible to rot. Culinary and medicinal herbs had their value in their freshness, and thus were not ideal products of trade; they spread through naturalization and were generally available locally. Historically, anything rare and aromatic can be considered a spice, including incense for burning, coffee in the early days, fragrant perfumes, or even exotic fruits; anything ‘special’ (even if today nobody would agree so). This is well observed in the origins of the English name: the word ‘spice’, via Old French *espice*, comes from Late Latin *speciēs* (plural) ‘spices, goods, wares’ with the original meaning in Classical Latin being ‘kind, sort’. English ‘species’ and ‘special’ are obvious cognates of the same Latin etymon: *speciō*, which referred to anything observable: a sight, ‘spectacle’ (cf. ‘inspect’), and also anything extraordinary, ‘specific’ kind of item (Glare, 2012, pp. 1983-1984) This implies that in different periods, the meaning of the term ‘spice’ covered different substances, based on what products were considered special, desirable, and difficult to obtain; the definition constantly changed. From this point on, whenever spices are mentioned, we refer to this broad definition, using ‘spice’ as an umbrella term for any historic exotica. These definitions, and the differences between the terms spice, incense, herb, condiment, etc. will be explored in detail in the dissertation, as well as a shift in meaning considering spices.

The main contribution of this thesis would be a working database of spice names that can serve as a basis for further study. Spices are aromatic products with varying importance and relevance in different places and in different times are essentially endless, so there is always a room (and need) to expand. This dataset is to be grounded in the following principles: correct botanical identification of a plant and the obtained substance; awareness of the substance’s physical and botanical properties, origin, spread, history, uses and cultural/religious significance; collection of names denoting the substance in the literature, including pre-modern periods; reviewable by marking sources and references. The fundamental idea is that these information can tell us a story from a new angle: by tracing the diffusion of spices and their names we can potentially find patterns in trade, contact, and blabla.

Besides this, a linguistic analysis on the names attributed to a spice product will shed light on blabla

An attempt to group and categorize the aromatic materials of the spice domain based on linguistic-cognitive features has not yet been made and constitutes an original approach. The quest for exploring patterns of spice diffusion and spice terminology could yield new insights and open possibilities for

#	Species	English	Chinese	Translit.	Arabic Translit.
1	<i>Pimenta dioica</i>	allspice	多香果	<i>duōxiāngguǒ</i>	فلفل إفرنجي <i>fīl fīl ifranjī</i>
2	<i>Pimpinella anisum</i>	anise	茴芹	<i>huíqín</i>	ينسون <i>yānsūn</i>
3	<i>Ferula assa-foetida</i>	asafoetida	阿魏	<i>āwèi</i>	حلتیت <i>ḥiltīt</i>
4	<i>Carum carvi</i>	caraway	葛縷子	<i>gělǚzi</i>	كراويا <i>karāwiyā</i>
5	<i>Elettaria cardamomum</i>	cardamom	荳蔻	<i>dòukòu</i>	هال <i>hāl</i>
6	<i>Cinnamomum cassia</i>	cassia	肉桂	<i>ròuguì</i>	سلیخة <i>salīkhā</i>
7	<i>Capsicum annum</i>	chile	辣椒	<i>làjiāo</i>	فلفل حار <i>fulful hārr</i>
8	<i>Cinnamomum verum</i>	cinnamon	錫蘭肉桂	<i>xilánròuguì</i>	قرفة <i>qirfa</i>
9	<i>Syzygium aromaticum</i>	clove	丁香	<i>dīngxiāng</i>	قرنفل <i>qarānful</i>
10	<i>Coriandrum sativum</i>	coriander	芫荽	<i>yánsui</i>	كزبرة <i>kuzbara</i>
11	<i>Cuminum cyminum</i>	cumin	孜然	<i>zīrán</i>	كمون <i>kammūn</i>
12	<i>Anethum graveolens</i>	dill	蒔蘿	<i>shíluó</i>	شبت <i>shibitt</i>
13	<i>Foeniculum vulgare</i>	fennel	茴香	<i>huíxiāng</i>	شمر <i>shamar</i>
14	<i>Trigonella foenum-graecum</i>	fenugreek	胡蘆巴	<i>húlúbā</i>	حلبة <i>ḥulba</i>
15	<i>Zingiber officinale</i>	ginger	薑	<i>jiāng</i>	زنجبيل <i>zanjabīl</i>
16	<i>Piper longum</i>	long pepper	葷撥	<i>bībō</i>	دار فلفل <i>dār filfil</i>
17	<i>Myristica fragrans</i>	mace	肉荳蔻皮	<i>ròudòukòupí</i>	بسباسة <i>basbāsa</i>
18	<i>Myristica fragrans</i>	nutmeg	肉荳蔻	<i>ròudòukòu</i>	جوز الطيب <i>jawz al-ṭīb</i>
19	<i>Piper nigrum</i>	pepper	胡椒	<i>hújiāo</i>	فلفل <i>filfil, fulful</i>
20	<i>Crocus sativus</i>	saffron	番紅花	<i>fānhónghuā</i>	زعفران <i>za'farān</i>
21	<i>Zanthoxylum bungeanum</i>	Sichuan pepper	花椒	<i>huājiāo</i>	فلفل سیتشوان <i>filfil sītshuān</i>
22	<i>Illicium verum</i>	star anise	八角	<i>bājiǎo</i>	ينسون نجمي <i>yānsūn najmī</i>
23	<i>Curcuma longa</i>	turmeric	薑黃	<i>jiānghuáng</i>	كركم <i>kurkum</i>
24	<i>Vanilla planifolia</i>	vanilla	香草	<i>xiāngcǎo</i>	فانيليا <i>fānilyā</i>

Table 1.1 The set of 24 spices included in this project.

future research.

# Background

## 2.1 Literature Review

**K**NOWLEDGE and familiarity about spices varies greatly from person to person. One can live a life of actively pursuing, disseminating, and creating knowledge about spices, while others die without caring or knowing a thing about them. However, presumably both kinds of people would use and consume similar amounts of these ingredients, depending on which culinary tradition they born to. Spices are various, mainly plant-based substances that have played essential roles in human civilization for millennia. As I mentioned earlier, the assumed roles can be numerous: culinary, medicinal, cosmetic, and ritualistic, and different cultures display varying degrees of importance to different products. In this section, I will explore the different fields that have generated information about spices, review and evaluate the existing literature, and present the available, and appropriate sources for investigating these materials relevant to this project.

### 2.1.1 On Spices

When we hear the word ‘spices’, our imagination rushes through far-flung tropical islands, busy seaports, lush jungles, and arid deserts; it invokes the sight of massive ocean-going ships, oriental traders, and camel caravans. A quick internet image search on the ‘spice trade’ shows us antique maps in sepia and neatly arranged Moroccan spice markets in eclectic colors. We can almost smell the word ‘spice’. These envisioned, heavily stereotypical landscapes go hand in hand with stories of exotic peoples, fantastic creatures, prized commodities, and fables of exploration, and much less glorious accounts of colonization. What I described here is an exclusively westernized viewpoint. While most of the images in our minds are distorted under the influence of romantic orientalist paintings, and tales of triumphant discoveries retold over generations, the essence of the image is very true, and much more gruesome. Arguably the peoples living in the native habitats of a once overvalued plant species have different experiences etched in their collective memories. One could argue that Europeans imported spice, but often exported horrors. The spice trade and its romantic imagination gave birth to many books, from historical non-fiction on influential characters, such as *Nathaniel’s Nutmeg* (Milton, 1999), to popular histories, such as *The Spice Route* (Keay, 2006), and more popular science accounts, such as *Fruit From the Sands: The Silk Road Origins of the Foods we Eat* from paleo-ethnobotanist Spengler (2019a).

Today, spices are mostly discussed from a culinary point of view. The volumes of cookbooks and spice & herb companions are almost infinite. Gastronomy professionals, chefs, food writers, and hobbyists all participate in an endeavour to introduce spices to us in a fashionable manner, creating references for home cooks and health enthusiasts. Many authors tend to attempt an overarching collection, presented in encyclopedic directories (Craze, 1997; Farrell, 1985; Herman, 2015; Lakshmi,

2016; Norman, 2002/2015; O'Connell, 2016; Opara & Chohan, 2021).

On a more scientific note, we find authors from the plant sciences, such as plant taxonomist and ethnobotanist van Wyk (2014) who delivers an excellent compendium titled *Culinary Herbs and Spices of the World* where he introduces dozens of aromatic plants, with a clear explanation on their uses and categorization. In her *Food Plants of China* S.-Y. Hu (2005) describes hundreds of edible plants relevant to Chinese eating habits, with the precision of a true botanist. Agricultural ecologist and ethno-biologist Nabhan (2014) takes the reader on a “spice odyssey”, with his illuminating *Cumin, Camels, and Caravans*, discussing the materials in chronological steps of global trade—the Incense trail, Silk road, and the Spice trade.

Beyond general and introductory histories of spices, such as those offered by J. Turner (2004)'s *Spice: The History of a Temptation*, or Czarra (2009)'s *Spices: A Global History*, most historians and philologists approach the topic in depth, from their own areas of expertise. Culinary historian Krondl (2007) compartmentalized the story of spices, and writes about Venice, Lisbon, and Amsterdam, “the three great cities of spice” in his *The Taste of Conquest* and presents the story of spices through vying eyes of European powers. Spices in Greek mythology are explored in *The Gardens of Adonis* by an expert in ancient Greece, Detienne (1994), while Schivelbusch (1992), a cultural historian discovers the social history of spices, stimulants and intoxicants in his *Tastes of Paradise*. Freedman (2008), a historian and expert on medieval cuisine, in his book *Out of the East: Spices and the Medieval Imagination* explores how the European fascination with spices fuelled the quest for new lands and colonial expansion. The initial voyages to America by Columbus, Pizarro, and others were motivated by the search for spices, and the mirage of *La Canela*, a legendary valley abundant in cinnamon, equally promising to that of gold in El Dorado (Dalby, 2001). One of the most valuable works for us is Dalby (2000)'s *Dangerous Tastes: The Story of Spices*. Andrew Dalby is a linguist and historian, and besides Latin and Greek he has command of other languages, such as Sanskrit and Burmese, which allows him to present the topic of spices with the pen of a truly versatile philologist and convey authentic scholarly information on spice names bridging East and West. A thought-provoking volume titled *The Poetics of Spice* by Morton (2006) is a literary critical study that discusses how spices were represented in Romantic and Victorian era English literature, and how the topic connects to romantic tropes; ideologies, such as consumerism, capitalism; and ideas, such as abstinence and luxury. “Spice is a complex and contradictory marker: of figure and ground, sign and referent, species and genus; of love and death, epithalamium and epitaph, sacred and profane, medicine and poison, Orient and Occident; and of the traffic between these terms (Morton, 2006, p. 9).

Looking beyond holistic, comprehensive tomes on the history of spices attempting to gather all of them in a single book, some commodities have already been explored thoroughly in a more concentrated approach. The history of salt (Kurlansky, 2002), tea (Mair & Hoh, 2009), pepper (Shaffer, 2013), and vanilla (Rain, 2004) are worth mentioning, and treatises on other popular substances of trade (chocolate, sugar, tobacco, etc.) are abundantly available. Even more outstanding are the works that focus their investigation on a specific cultural area, whether it is the “biography” of the chile pepper in China (Dott, 2020)—retelling an unquestionably influential incorporation of a new item to a diet—or the allure of musk and perfume in the Islamic tradition (King, 2007). These works contain

valuable linguistic information as well, regarding the origins and spread of the names of spices, and they will help us to investigate their spread and diffusion.

Studies on specific spices are one of the most important sources for this thesis, and highly related to the project for example are the articles on the loanword status of ginger (Ross, 1952), on the diffusion of chile (Wright, 2007), on the identity and etymology of Sichuan pepper (Austin & Felger, 2008), and on the “trade-language origin” of turmeric (Guthrie, 2009). Recent advances regarding the name and identity of cinnamon and cassia in ancient vs. modern times published by Haw (2017), and the Eurasian itinerary of asafoetida (Leung & Chen, 2019) are crucial pieces of research in order to trace the products accurately. These and similar types of research will be highly influential in the preparation of this thesis.

For an overview about the concept, function, and uses of spices in the classical Islamic periods, please refer to Dietrich (2004a); for the same in a Chinese cultural and historical context, please see S.-Y. Hu (2005, pp. 147–153).

### 2.1.2 On Plants and Plant Names

A brief section on botanical nomenclature.

### 2.1.3 On Food and Foodways

Literature on gastronomy and the culinary sciences is plenty, but high quality scholarly works are fewer. Reference works include Davidson (2014) and Katz (2003)’s *Encyclopedia of Food and Culture* other key publications are Toussaint-Samat (2009)’s *A History of Food*. Remarkable contributions to ancient and medieval culinary history were made by Dalby, focusing on the cuisines of Rome, Greece, and Byzantium (Dalby, 1996, 2003, 2010; Dalby & Grainger, 1996)

In the Chinese context the definitive work is still Chang (1977)’s *Food in Chinese Culture*, while in the Islamic tradition, medieval cuisine and recipes are explored in details by Zaouali (2007). A few works on the culinary history of the Middle East are also results of great scholarship, including the translation of Nawal Nasrallah, who made a 10<sup>th</sup>-century Baghdadi cookbook accessible for us in the *Annals of the Caliphs’ Kitchens* (Ibn Sayyār al-Warrāq, 2007), and Lewicka (2011) who introduced us the “Food and Foodways of Medieval Cairenes”.

### 2.1.4 On Trade

I must point out that that spices are mostly explored through their trade. And, as most spices originate in tropical Asia, our centre of attention will be directed towards the continent. The term *spice trade* loosely refers to the cross-cultural, economic, and diplomatic ventures of historic kingdoms, empires, and companies, agglomerating around the Indian Ocean, and other regions such as the Mediterranean, East Africa, Maritime South-East Asia, and by land Central Asia. The history of the spice trade is one of its own, covers hundreds of years and it is fundamentally connected with the history of globalization. Naturally, the story of spices is intertwined with trade routes and geopolitical events, involving contact between peoples, cultures, religions, ideas, and languages. See general works on economic history,

such as the *Spice Islands* (Burnet, 2011), on political history *The Scents of Eden: A Narrative of the Spice Trade* (Corn, 1998). Specific eras and regions related to our topic include the ancient Indo-Roman trade (Cobb, 2019; Sidebotham, 2011), the medieval Indian Ocean sea trade spanning from the Persian Gulf to China championed by Arab seafarers (Hourani, 1975; Pearson, 1996), and the Southeast Asian maritime trade (Donkin, 2003; Hall, 2010; Reid, 1988). Young scholars are also doing incredible work, I would like to highlight the thesis of Hoogervorst (2012), who combines historical linguistic and archaeological approaches in the research of Southeast Asia the in the ancient Indian Ocean world. Besides a degree of domestication and long-standing cultivation practices, the abundance of spices today are a result of long-distance trade and cultural exchange. New advances in the field of archaeobotany concerning Roman and Islamic times for example, helps us to map the routes of the materials and trade-connections better (see van der Veen & Morales, 2015; van der Veen, 2018).

One surprising fact that I have learned from my reading, is that the Silk Road, the trade network roads and desert pathways connecting Central Asia with China did not really feature spices. Valerie Hansen (2012)'s well informed book based on unearthed documents of the region show a trade that is small in volume, and much less lavish in terms of luxury goods than I previously thought. Most of the trade covered short distances and whirled around every day goods and just a minute amounts of exotic perfumes and aromatics, especially musk. Silk often acted as a currency. The word *spice* only occurs two times in her book. This is not to say that spices did not exist at all—we know that many spices were introduced to China on the silk roads, and that traveling merchants carried pepper—but that the bulk of the spice trade did not happen overland.

Many of the contemporary works I mentioned that trace the initial steps of certain spices and other foodstuff relay accounts from primary sources. For example Spengler (2019b) writes that the black pepper of tropical India is first mentioned by Chinese sources in during the Han dynasty (202 BC–9 AD; 25–220 AD), in the *Hou Hanshu*, quoting Laufer (1919, p. 374). I noticed that in a lot of cases, the reports are thanks to a few giants, legendary scholars whose research we still use and reference. These are the people who laid down the groundwork for future studies by their hard work and language skills, including Berthold Laufer (1919) and his invaluable *Sino-Iranica*, which catalogues “Chinese contributions to the history of civilization in ancient Iran, with special reference to the history of cultivated plants and products”; and Edward H. Schafer, and the *The Golden Peaches of Samarkand*, which lists luxury exotica that reached the Tang court, exploring cultural interactions with other regions. I would also like to mention Isaac Burkill (1935), who recorded every economically important plant and mineral under the sun of the Malay Peninsula, annotated with local names and traditional knowledge in his monumental *A Dictionary of the Economic Products of the Malay Peninsula*. Their command and knowledge in history, sinology, and botany is immeasurable.

Moving on to the study on spices, incense, and aromatics through the tools of Semitic philology, I should mention the recent addition of Amar and Lev (2017)'s *Arabian Drugs in Early Medieval Mediterranean Medicine*, and Lev and Amar (2008)'s *Practical Materia Medica of the Medieval Eastern Mediterranean According to the Cairo Genizah*, but we cannot leave out *Domestication of Plants in the Old World* by plant geneticist D. Zohary et al. (1988/2012), which supplies a great overview of the agronomic development of the region, or Duke's *Handbook of Medicinal Plants of the Bible* (Duke et al.,

2008).

Besides history, archaeology, and botany, progress in spice related research in recent times are predominantly from the field of medicine. There are uncountable pharmacological—clinical and in vitro—studies on the effects of various medicinal plants (Boy et al., 2018), and many of them are motivated by food and nutritional science research, such as Baker et al. (2013)'s survey on the effects of cooking with and ingesting cinnamon, nutmeg and cloves. In the dissertation I will try keep away from deep deliberations of scientific treatises from medical, biochemical, and pharmacological journals as much as possible, however, I might comment on issues related to folk uses and traditional knowledge if it is relevant for the greater cause.

### 2.1.5 On Medicine and Healing

Further moving away from history, we must briefly mention the fields closely knit with the food industry: chemistry and pharmacology. The authoritative *Handbook of Herbs and Spices* (Peter, 2012) and *The Encyclopedia of Herbs & Spices* (Ravindran, 2017a) are for industry professionals. These works detail the physical and chemical properties of the materials, and the plants and their products are described in detail. Besides botanical information, the plants' chemical compounds and volatile oils are in focus, but general knowledge about the origins, names, uses, and functions are also presented. The chemistry of spices is an interesting topic, scientific and popular books were both published on it.<sup>1</sup> The science behind how spices work is a fascinating one, there are two questions we should pose, one: "Why are spices spicy?", and two: "Why humans like spices?". The answer to the first question is that the pungency we feel—a mild rush of heat or minutes of tingling lips—is in fact a toxic shield, it is the plant's evolutionary response to herbivores, bugs and pests (J. Turner, 2004, p. 21). However, this is not a crucial component in the organism's life cycle; these substances (the volatile oils causing flavour and pungency) are so-called secondary metabolites, they are insignificant to the plant's biology (Parthasarathy et al., 2008, p. 18). The heat to the chili is effectively the same as thorns to the rose. The spiciness of a spice is a weapon, and while bugs and insects would run amok trying to have a taste of the fruit of *Myristica fragrans* (the tree of nutmeg and mace), it made humans—quite ironically—sail to the end of the world to find it. No obstacle was great enough to stop mankind's appetite for fragrant, pungent, and spicy flavours. In answering the second question, we can expect that if the spiciness of spices has a Darwinian explanation, the human desire for them should also sound like one. Sherman and Billing (1999) in their influential, and aptly titled article *Darwinian gastronomy* claimed that spices taste good because they help us fight hostile bacteria and microorganisms responsible for digestive issues such as food poisoning; they are beneficial for our health. The authors also compared cuisines of the world based on how much spice they use in their everyday cooking. The piquancy of some capsicums is essentially an irritation, Spence (2018) explores, why do so many people find the "oral burn" so appealing, Carstens et al. (2002) investigates the neural mechanism of oral irritation from spices and carbonated drinks, and we can learn about pungency and personal preference from Prescott and Stevenson (1995). The antibacterial and antioxidant effects

<sup>1</sup>For a highly visual and novel take on a book introducing the chemistry of spices, see Farrimond (2018)

of spices are known for millennia, and recent research (Billing & Sherman, 1998; Nilius & Appendino, 2013; Yashin et al., 2017) shows that the old wise ones were not at all wrong compiling their *materia medicas* and *bencaos* to guide future generations on herbal healing. Of course, there were plenty of exaggerated claims on the potential healing effects of some products, from them being an antidote for snake venom to the cure for death itself.

### Materia Medicas, Pharmacopeias, Bencaos

**Materia medica** (Latin for ‘medical material’) refers to a descriptive collection of knowledge about substances—plant-based, mineral, or from an animal source—with therapeutic properties, usually in the form of a book, often illustrated. It is a term from the history of medicine, named after the highly influential book of Dioscorides, a Greek physician and pharmacologist from the 1<sup>st</sup> century AD. The term **pharmacopeia** is closely related to this, but this refers to a more technical book that contains directions on how to combine different materials for effective healing remedies. Basically, it is a drug making manual.

**Bencao** (本草) [measure word for books-herb] is essentially the Chinese equivalent of *materia medica*. It refers to compilations of classical Chinese medicinal literature. The *Shennong Bencaojing* from circa 200 AD, although lost, is generally considered the first (see Nugent-Head, 2014; Yang, ca. 206 B.C.E.–220/1998). A great explanation of the *bencao* tradition can be found in the introduction of J.-N. Wu (2005)’s *An Illustrated Chinese Materia Medica*, and Z. Zhao et al. (2018) offers a brief overview on the classification of *bencao* literature, and how it connects to traditional Chinese medicine. The most famous *bencao* however, is the *Bencao Gangmu*, 16<sup>th</sup>-century Chinese encyclopedia of *materia medica* and natural history written by Li Shizhen. It is probably the most important book of *Traditional Chinese Medicine* (TCM), building on the knowledge of earlier Chinese pharmacological works. It if often translated to English as the *Compendium of Materia Medica*, and the first complete English translation project is currently under way headed by Paul Unschuld (2022). A modern, scientific example for a *materia medica* style compilation would be Duke (2002)’s *CRC Handbook of Medicinal Spices*.

In the Arabic context on the other hand, we must acknowledge the advances of Islamic medicine, and the fruitful decades of the Islamic Golden age that saw many scholars publish extensively, forwarding the tradition of the Greeks, building on the works of Dioscorides, Galen, and Hippocrates. The writings of philosopher and polymath Ibn Rushd (Averroes), physician and pharmacologist Ibn Juljul, botanist Ibn al-Bayṭār, and alchemist Abū Bakr al-Rāzī were all influential in the history of Western medicine and pharmacology. Maybe the most prominent of all was Ibn Sīnā (c. 980–1037; latinized as Avicenna) inspiring many future scholars for over centuries, such as Thomas Aquinas (1225–1274) (Smith, 1980). His book *al-Qānūn fi l-Tibb* completed in 1025 was used as a standard textbook at universities up to the 17<sup>th</sup> century (Musallam, 1987–2011). Scholars still discuss him and his contributions (Sajadi et al., 2009), and compare his findings with recent pharmacological studies. For example, on the traditional uses and health benefits of saffron (see Hosseinzadeh & Nassiri-Asl, 2013).

### 2.1.6 On the Role of Spices Through Time

I must also touch on the change in meaning on what spices once were, and what they are now. It can be now clear that in the past spices were more valued for their ceremonial or medicinal use, but I would like to make the shift in usage explicit.

For example, the ancient Romans imported and used cinnamon in large quantities, but they did not eat it or cook with it. They treasured it as incense and medicine instead. It is often repeated that emperor Nero have burned (as incense and offering) a year's supply of Rome's cinnamon on his wife's funeral (whom probably he himself have killed) in 65 AD (Toussaint-Samat, 2009, pp. 437–438). Even if we stopped burning cinnamon, is not because of these practices disappeared—the catholic church still uses 50 tons of frankincense a year (Ash, 2020)—it rather seems that most materials in question gradually gained more favour for their culinary appeal.

In the notion that the role of spices changed over time, there is a universally observable pattern: the gradual shift from their relevance in medicine towards gastronomy. Freedman (2015) writes on social and cultural implications of the role in spices and their importance in health and wealth during the Middle Ages. The shift is mainly due to the emergence of modern medicine and the marginalization of traditional folk medicine, especially in developed, western societies. What can be more telling than the term “alternative medicine”, clearly indicating the switch: what was the “only” medicine once, is now a secondary (and sometimes frowned upon) option, as opposed to just “medicine” or in some places “Western medicine”. In many cultures with strong roots in folk healing, the widespread use of medicinal plants, herbs, and spices are thriving and in recent years these practices are even gaining international popularity. We could think of Traditional Chinese Medicine, the Indian *Ayurveda*, or the Indonesian practice of *jamu*.<sup>2</sup> Besides this well-known shift regarding spices and the healing factor, it is important to point out that in the past the line between food and medicine were much more blurred, this can still be observed for example in modern Chinese food therapy, 食療 *shiliao*, rooted in ancient dietetic traditions (Engelhardt, 2001).

### 2.1.7 On Food and Language

One of the best examples for a linguistic study related to gastronomy is *The Language of Food: A Linguist Reads the Menu* by Jurafsky (2014). Dan Jurafsky, a computational linguist and authority in the field of Natural Language Processing (NLP), explores our connection to food and eating in a series of interesting studies. From tracing the historic and linguistic origins of ketchup, macaroni, or salami, to what the wording of a restaurant menu can tell us about prices. From a Chinese perspective, food and menus are explored by Yao and Su (2019), while the topic of fruit-words is presented by Depner (2019).

This thesis will involve sensory words—nouns, verbs, and adjectives of gustation, olfaction—surrounding spices and other aromatics, and in this aspect, previous studies of linguistic synesthesia will definitely prove useful (see Huang & Xiong, 2019; Q. Zhao et al., 2019). Some cognitive studies on

<sup>2</sup>*Jamu* is the name for the traditional medicine of Indonesia, encompassing practices or herbal healing with Javanese origins, usually in the form of mixing ingredients in drinks and potions. For more, see Beers (2012)

sensory information have been conducted involving spices, most interesting are the ones that explore cross-modality relations. For example, an fMRI experiment concluded that reading words with strong olfactory associations, such as ‘garlic’, ‘jasmine’, or ‘cinnamon’ activates the olfactory regions of the brain (González et al., 2006). Another unique study looked at the possible corresponding sound attributes to spiciness/piquancy, and a series of experiments found that fast tempo, high pitch, and distortion are indeed linked to the sensation (Q. J. Wang et al., 2017). On a more linguistic note, Zhong and Huang (2020) explored taste, examining the sensory lexicon around the realm of desserts. They showed that “mouthfeel”, a multi-sensory concept plays more important role than the quality of “sweetness”. Bagli (2021)’s *Tastes We Live by* is a very recent publication that deals with the linguistic conceptualization of taste in the English language.

## 2.2 Research Gap

I have started this chapter with discussing the literature on spices through the eyes of different disciplines. I mentioned gastronomy, botany, history, trade and economics, and after a brief touch of classical medicine I have circled back to philology, and finally landed on research combining language and food, and the sensory modalities. So far, we saw that studies on spices—specific or in general—are available, most notably in the form of historical works focusing on some aspect of the spice trade or tracking the story of the material itself. Besides history, the availability of literature from food and nutritional science, biology and medicine is satisfactory, quenching the need of industry professionals. In this field we see a more rapid development, new studies and findings are relatively frequent, especially about popular spices.

What we also have seen is the obvious lack of linguistic studies themed around spice. A handful of scholars have investigated questions related to language, almost exclusively from a historical linguistic point of view—trying to unearth etymologies. The few available findings however are not collected, knowledge on spice names and related terminology is found sporadically in many disciplines. In the face of such scarcity of linguistic studies on spice terminology it is not surprising that the *Handbook of Herbs and Spices* of Peter (2012)—a standard reference work for chemistry and food industry professionals—often relies on an online blog to list spice names! This online blog created in the early 2000s is a personal website of one Gernot Katzer, who currently rules over the internet with his exhaustive collection of spice information, also including spice names in numerous languages. Katzer (2012b) supplies a massive amount of valuable information to the public, but his lists on spice names are often inaccurate, and—since he is an individual writing about his own travels and empirical experiences and not aiming at academia—sparsely cited.

Up to date, a comprehensive study on spices from a linguistics perspective is lacking. The information already out there is sporadic and unorganized, and as I have introduced above it was botanists, historians, chefs, and historical linguists who contributed to the research on aromatic products, their origins, and their place in the human culture and lexicon. In a few cases, findings happen to be misinformed, thanks to some authors making presumptions along erroneous lines, which only adds to the confusion. This is bound to happen when botanists attempt venture into the lands of etymology,

or when food writers choose to sail the high seas of historiography. For a good illustration of this problem, see the criticism of Haw (2017) on Austin and Felger (2008)'s attempt to trace the etymology of *fagara* (Sichuan pepper) where the authors with a background in botany have made questionable assumptions related to Classical Arabic phonology and morphology. We must be careful and not make similar mistakes, never give in to the temptation of baseless speculations, especially outside the realm of linguistics and philology. With that being said this dissertation would fill the gap that exists regarding research on spice terminology.

### 2.2.1 Research Questions

In order to do so, I will now try to formulate the questions I aim to answer. The first two questions arise from the investigation on the “diffusion of spices” and are more related to the philology component of the thesis. The third and fourth questions are more related to the corpus linguistic component of the study, investigating the “language of spices”.

- Q1 Does the propagation of [Wanderwörter](#) within the domain of the spice trade follow the diffusion of the materials?
- Q2 Is there any underlying pattern behind the mechanisms of spice diffusion, considering both the materials and the nomenclature?
- Q3 Is there any underlying pattern behind the language use surrounding spices, in terms of sensory words and synaesthetic properties?
- Q4 Do the presence or absence of various spice related lexical categories in a language show their level of embeddedness in a culture?
- Q5 Would the different patterns of spice name propagation and linguistic-cognitive characteristics correlate or show differences in any way?

## 2.3 Theoretical Framework

### TODO

- wanderwort
- loanword haspelmath
- prototype theory
- sensory modalities (higher senses-lower senses)

#### 2.3.1 [Wanderwörter](#)



# Methodology

**R**EALIZING that there is little work done on building a spice name database, or on analyzing spice nomenclature from historical and linguistic-cognitive perspectives, I have set out to assemble one that would facilitate this kind of analysis. To introduce very briefly, I have built a database of spices and spice terminology by combing through secondary and primary literature, botanical databases, encyclopedias and dictionaries, and searching for the spices in contemporary and historical corpora. I then used a few selected features of these materials (region of origin, spreadability, etc.) and the corresponding terms (borrowed status, word formation, etc.) and looked at the set of spices as a whole, trying to find patterns and make some interesting observations about the diffusion, naming, and other aspects of spices.

## 3.1 Research Design Principles

To achieve these aims, I first needed think of an ideal way to compile and arrange these very complex pieces of information, data that are highly interdisciplinary in nature. From the very beginning of the design of this study, the following principles were kept in mind regarding the database of spice names:

(1) The database must be grounded in the close study of the materials—the plants and their products—especially from a historical and botanical standpoint. Awareness of the material’s physical journey will help us to contextualize some of the ways the associated names spread. Take for example the Sanskrit term referring to asafoetida (the dried oleoresin gum from *Ferula assa-foetida* et al.): हिरूग् *hirigu*, which is the etymon of both Chinese 興藁 *xīngqú* (*Middle Chinese (MC)* /hiŋ giʌ/), and English *hing*, but they took very different paths: while the Chinese term is a learned loan from during the spread of Buddhist scriptures on the overland Silk Road, the English word is a late 16<sup>th</sup>-century borrowing via the sea trade with Mughal India. And if we study the source of the materials and learn about the plants, we will also realize that all the hing that was exported from India in the early modern period was in fact imported from Persia and Afghanistan.

(2) The database must be thoroughly cited; every word, statement, date, or other piece of information should be carefully referenced. I have already explained the motivation and necessity behind this practice in chapter 1, it is enough to say that currently no one is citing sources for the names they give (except philologists), and sometimes it hard to find the motivation and inspiration behind a term. It is always a good scholarly practice to record where we found certain pieces of information, and when it comes to spice etymologies, this should make it easier for experts to verify or refute the findings on a specific item or stage.

(3) The database should be easily expandable. Because of the limited time, it is impossible for me to include *every* spice. Therefore, I try to create a pipeline, where a new material and its names can be easily added to the fold, and quickly analyzed. This in principle can also accommodate for the future inclusion of incense, perfume, and herbs, which I will mention in section 7.3 when discussing future

plans to expand on this research.

### 3.1.1 Identification, Confusion, Adulteration, Clarification

The ideal first step of all types of research related to spices, herbs, incense, and other aromatics is to identify the product exactly. In the case of spices and incense, this is overwhelmingly a botanical question, while in the case of other exotic aromatics, such as musk or ambergris, we must involve the animal kingdom. Medical, pharmaceutical, and food industry studies are heavy on the hard sciences—chemistry, biology—but they sometimes also contain valuable information about both common and scientific names. All medical studies must start with the proper identification of the substance, in fact, there is a range of studies about various techniques on identification and differentiation (cf. Ford et al., 2019). The reasons for this are twofold.

Firstly, in many cases it is not a straightforward task to tell the substances apart, different spices can have very similar physical qualities. E.g., the fruits of Chinese star anise (*Illicium verum*) and Japanese star anise (*Illicium anisatum*) basically look the same, but the latter is toxic; see the excellent points made by Small (1996) on the confusion of their common names. Uncertainty in nomenclature and identity poses a further challenge to clinical trials if the origins of a substance is not properly identified. Take for example Oketch-Rabah et al. (2018), who writes on the confusion of cinnamon and cassia nomenclature and its implications in pharmaceutical research. Consider first cinnamon (*Cinnamomum verum* syn. *C. zeylanicum*). Common names include *true cinnamon* and *Ceylon cinnamon*. However, the cinnamon sold in the US and in the UK markets are generally not the same spice: most of the product labelled as cinnamon on American shelves is in fact cassia (*Cinnamomum cassia* syn. *C. aromaticum*) (Oketch-Rabah et al., 2018), which is sometimes called ‘fake cinnamon’ or ‘bastard cinnamon’. In retrospect, the Latin scientific name of the former makes bit more sense now: *verum* means ‘real, true, genuine’. But why is cassia fake cinnamon? This is due to historical reasons, from when the introduction of the much cheaper cassia pushed down the cinnamon prices drastically in the 19<sup>th</sup> century (Wijesekera & Chichester, 1978). Most scholars consistently refer to *C. zeylanicum* as cinnamon, and to *C. cassia* as cassia but it is not uncommon in everyday language use to confound the two, especially in referring to cassia as cinnamon, out of innocent ignorance. For more detail and on the identity of cinnamon and cassia please see section 4.8.2. Uncovering confusions from under heaps of synonyms lead us to interesting historical events that sometimes explain the vernacular names of a particular product, such as the case of cinnamon and cassia shows.

Secondly, adulteration and contamination are rampant in the industry. Saffron (*Crocus sativus*)—the most expensive spice by weight nearing the price of gold—is famous for being knocked up (and substituted) with the much cheaper flowers of safflower (*Carthamus tinctorius*). Even their names reflect these practices: although the two are very different and unrelated plants, their similar dyeing properties and constant confusion have left its mark. *Safflower* has been influenced by the French word for saffron, even if they have different origins (both ultimately from Arabic). And, on account of the adulteration, safflower have also came to be known as *bastard saffron*, attested in 1548.

We do not need to lurk modern pharmacological studies to find examples of confusion, the identity

of saffron was also elusive in ancient China, where at its introduction in the early Middle Ages, it was confused with safflower, and both were casually called 紅花 *honghua*. It is said that Buddhist monks picked up saffron in Kashmir on their way from India to China, but the knowledge about it was not clear until the Yuan dynasty, when it was actually used and imported (Laufer, 1919). During Tang times, it was also connected with the—also strongly yellow—turmeric. Turmeric came first, and got the name 鬱金 *yujin* [yü-gold], and later saffron was named 鬱金香 *yujinxiang* [yü-gold-aromatic] (Schafer, 1985). The confusion of saffron and turmeric (and truthfully every other yellow spice used as a dye) is also observable in Classical Arabic, *kurkum* ‘turmeric’, historically also ‘saffron’ (etymon of the word *curcuma*), and the perceived “similarity” of Sanskrit कुङ्कुम *kunkuma* ‘saffron’ did not help to clear the waters either (Guthrie, 2009, see).

Keeping all this in mind, I feel I must lean on rudimentary botanical identification in the investigation, linking the plants and plant parts to the products and their vernacular names. This is important, as it can clear up some of the confusion when two or more products are used interchangeably, and it will highlight problematic cases from the start.

### 3.1.2 Challenges in Spice Categorization

One of the most challenging parts of this project, is to chose a meaningful way to categorize spices and spice names. The design should make sense on multiple dimensions: botanically, historically, and maybe even gastronomically, but at all times keeping in mind the linguistic focus. The main goal is to assign a spice name to the appropriate product/material, which is correctly identified on a botanical level. This is not always straightforward, as some materials can have multiple botanical sources, one plant can yield multiple differently used plant products, and the same names can be used for different substances. We have already discussed the question of spice names vs. plant names in section 2.3.1, but there are several other issues.

One problem arises from the fact that many terms can have a meaning on different levels of specificity, depending on context and intent. Spice words are rich in senses. For example, according to the *Princeton WordNet (PWN)* *black pepper* can be both a hypernym and a hyponym to *pepper*, depending on if it refers to the plant, or the dried fruits with the husks on. In this specific case, *black pepper*#2 and *white pepper* are sister terms, but *white pepper* is also a subordinate to *black pepper*#1. This situation is then further complicated with the fruit of the *Capsicums*, that also have the name *pepper*. Thus, it is not immediately clear if we should treat black and white pepper as two different spices, or two manifestations of the same spice. There are many other examples, where a term can be understood on different levels: as a plant, a family of similar plants, a specific spice, or a group of spices. In an everyday setting, lexical semantic hierarchies are not always adhered to, and people organize spices in their heads according to their own convictions. One author might mention white pepper under the heading black pepper on account of their biology (a botanically driven categorization), while another might separate them and discuss them as different spices based on their different uses (a culinary approach). As for the historian, mentioning white pepper might be just not at all important. The reasons for these variations are usually determined by what is the intention of the categorization,

and who is the target behind the treatise. For us layman however, spice entities are most prominently structured by way of their names: the words are the handrails to cling to if we are not familiar with an item.

Even more challenging for categorization, is when we are not sure which spices were meant under certain names in different times. Cinnamon and cassia are a great example for this, as we saw in section 4.8.2. But, parallel to the question of identity, we also have seen that it does not always matter. Attitudes differ from place to place: while Europeans do sometimes differentiate, in China and the United States the concept of cinnamon is singular. For the analysis, I had to decide if I treat them as one item, or make a distinction. In a few cases, a spice name became obsolete and got “lost”, meaning that it cannot be identified with certainty, and we have to guess what the name referred to based on botanical and historical data, and categorize accordingly; as it is the case with *amomum*. The most extreme situation is when a spice goes extinct, as it happened to silphium in antiquity. At present, this thesis does not contain such items. In these cases, we need historical knowledge to say anything about the identity of said spices and where they belong in between the others.

Our knowledge or lack thereof also determines the concept we have of a certain item. For example, most people who know that nutmeg and mace come from the same fruit of the same plant and from the same place will always connect the two in their heads, the two spices are literally inseparable (until harvest, of course). From historical records however, it is clear that the knowledge regarding these substances was spiked with misunderstandings and inaccuracies, even among people who were in the spice business. According to an anecdote, during the Dutch monopoly of the Banda islands, an officer back home have written an angry letter to the colony on the Spice islands, ordering them to plant more mace trees, because there was a higher demand for it than nutmeg — a request that must have raised some eyebrows on the plantations. This shows that botanical organization is accessible to those with botanical knowledge.

Lastly, we must also mention that the language and words we use for these materials also defines our understanding of them. Analyzable, descriptive names help us to identify certain materials, while loanwords with forgotten original meanings (cf. *mace*) might not say much. For example, no Chinese would have the above misconception of mace, when faced with its name: 肉豆蔻皮 *roudoukoupi*, which means the ‘skin/cover of the nutmeg’, which is what it actually is. On the converse, the Chinese initially confused some cardamoms and nutmeg (unrelated plants), simply because they were both round, and sourced from the same region. Today, both are 豆蔻 *doukou*, with modifiers attached to distinguish between them.

Another point to make is the myriad of “fake” spices that feature especially in English. False peppers, false cardamoms, bastard cinnamon, and bastard saffron, are a reflection of historical economic attitudes, often pointing at the problem of adulteration. Names, such as *true pepper* and *true cinnamon* summon a sense of originality. This however, is highly subjective to a culture and language, after all, bastard cinnamon is just “normal” cinnamon for others, and false cardamoms are just cardamoms to those who have a different prototype for what is a cardamom. In a sense, it all boils down to translation, which can be arbitrary. Who decides if Chinese 桂 *gui* should be rendered *cinnamon* or *cassia* in English?

To avoid getting lost in the details of lengthy binomial names or botanical genera, I have opted to use a set of common names of the spices to be used for identification, under which the various spice names belong. These IDs are sometimes arbitrary (e.g.: all spicy, red, hot, chili peppers of the *Capsicum* genus and their names go under “chile”), but always clear cut and explained in the data chapter. I have therefore grouped some spices and spice names into larger categories, trying to find a smallest common denominator within the three languages. This only affects a few items: various false cardamoms in the *Amomum* genus will be grouped under the umbrella term: false cardamom. One better way would have been to divide the categories on a purely botanical basis, but I prefer this solution to make this set of closely related spices more accessible to the reader and avoid these items to fritter away in the crowd. Also, they constitute a linguistics and conceptual category as well, using similar prototype words in all three languages in their names. Using common names as identifiers also facilitates for a linguistically driven comparison, and so the IDs are essentially the same as the set of spices determined earlier: allspice, anise, asafoetida, black cardamom, caraway, cardamom, cassia, chile, cinnamon, clove, coriander, cumin, dill, false cardamom, fennel, fenugreek, ginger, long pepper, nutmeg, pepper, saffron, Sichuan pepper, star anise, turmeric, vanilla.

## 3.2 Data Collection

The data collection for this project was conducted in three stages. One for assembling the set of spices, one for gathering their names, and one for researching etymologies. The result of these three stages are open for inspection in the electronic files `spices.csv`, `names.csv`, and `etymologies.csv`, available on the corresponding GitHub page. Chapter 4 will introduce and explain the data in all three levels.

### 3.2.1 Collecting Spices

In the first stage, after I have assembled the set of spices, I collected information about them from encyclopedic handbooks written by experts in the plant sciences and spice industry professionals. I have made great use of van Wyk (2014), Peter (2012), and S.-Y. Hu (2005) at the start, especially when matching plant products to plants. At this stage, I have focused on the identity and characteristics of spices including geographical distribution and native habitats, especially where I saw any room for confusion. As I collected scientific names, I also recorded the common/vernacular names for each spice as an initial exploration, and I linked them to a botanical database that can supply further information. I have also collected information regarding their basic uses especially in traditional medicine.

Surprisingly, the abundance of synonyms is also palpable in the scientific nomenclature, sometimes one plant species has dozens of binomial `taxa`. In an attempt towards standardization of taxonomic data, collaborative efforts have sprung across numerous authoritative institutions to assemble and link their respective databases and sources. These online projects are usually run by a consortium of leading botanical institutions worldwide, among the key entities are the Royal Botanic

Gardens at Kew and Edinburgh, the Missouri Botanical Garden, the Harvard University Herbaria & Libraries, Geneva Conservatory and Botanical Garden, the Muséum National d’Histoire Naturelle in Paris, the South African Biodiversity Institute, the Australian National Botanic Gardens, and the Kunming Institute of Botany, just to name a few.

When it comes to botanical information, navigation in the ocean of scientific binomial names hiding the identity of a plant can be overwhelming. To alleviate this, I turned to a range of botanical databases for the purposes of correct identification, and information gathering. I used databases such as *The Plant List* (TPL) (<http://www.theplantlist.org>), which was recently superseded by the *World Flora Online* (WFO) (<http://www.worldfloraonline.org>); the *International Plant Names Index* (IPNI) (<http://www.ipni.org>); *Plants of The World Online* (POWO) (<http://www.plantsoftheworldonline.org>); the *Global Biodiversity Information Facility* (GBIF) (<https://www.gbif.org>); the *Flora of China* (FoC) hosted on eFloras (<http://www.efloras.org/index.aspx>) and the *Biodiversity Heritage Library* (BHL) (<https://www.biodiversitylibrary.org/>). TPL for instance claimed to be “a working list of all known plant species”, now under WFO it is “an online flora of all known plants”, and as such also connects different plant checklists and biodiversity databases using the nomenclatural and publishing information. In my dissertation I will frequently refer to POWO, which contains botanical descriptions and geographic data (native and introduced habitat), besides the usual taxonomic and botanical information.

In addition to online databases, I will occasionally also turn to reference books from the field of food technology and nutritional science, such as the *Handbook of Herbs and Spices* (Peter, 2006, 2012), and *The Encyclopedia of Herbs & Spices* (Ravindran, 2017a). These encyclopedias, although aimed at chemistry-focused food industry professionals, also contain holistic information on the plant-based products and discuss the origins and vernacular names, besides the usual particulars on usage and medicinal qualities. It is also worth noting that various dictionaries usually mention the scientific names of plants.

Regarding traditional medicine systems, I frequently consulted modern inventories of TCM to identify materials and extract Chinese names, including the the connecting databases of Hong Kong Baptist University: the HKBU Medicinal Plant Images Database<sup>1</sup>, the HKBU Chinese Medicinal Material Images Database<sup>2</sup> HKBU Chinese Medicine Specimen Database<sup>3</sup>; and the PolyU Chinese Herbal Medicine Database<sup>4</sup>. Armed with the botanical knowledge, we shall have an ideally clear picture on the spices, and a firm base to connect linguistic data to.

### 3.2.2 Collecting and Annotating the Names

In the second stage, I have collected the names of spices by combing through the published literature and online databases; whether botanical as described above, historical, or culinary. Always, prioritizing the existing linguistic and philological treatises, of course. I have linked the collected spice names

<sup>1</sup><https://library.hkbu.edu.hk/electronic/libdbs/mpd/index.html>

<sup>2</sup><https://library.hkbu.edu.hk/electronic/libdbs/mmd/index.html>

<sup>3</sup><https://libproject.hkbu.edu.hk/was4o/search?channelid=44273>

<sup>4</sup><https://herbaltcm.sn.polyu.edu.hk/>

to the respective spices and the result of this is an inventory of nearly 400 spice names that link to the initial set of 24 spices. For each spice, I tried to collect their names in the three languages, and it was also my goal to record where I have found these names. Therefore, thorough citations are available in the dataset pointing towards books, journal articles, databases, dictionaries, or sometimes even Wikipedia. As a preparatory step for the linguistic analysis, I have added some annotations.

### Conventionalized Terms

First and foremost, I have checked the words against dictionaries to see if their use is conventionalized or not, and I have marked words that appear in a dictionary. If a word occurs in multiple dictionaries, I only recorded the one that I deem the most authoritative or reliable, unless they are both extremely interesting entries or contradict each other.

### Present Status of the Terms

Then, as an internal operational measure, I have assigned the names into categories regarding their lexicographic status as spice words: default, alternative, historic, archaic, and obsolete. This was mostly for myself to better orientate after the terms started to accumulate, and I used the following scheme:

“Default” marks the names the spices are mostly prevalently known by today, that most people are familiar with. They comprise the words that should be most commonly found in a dictionary, or most frequent in a corpus. These are also the names what you see as section-headers in the thesis. These names also act as keys in my datasets. The term “default” as an indicator is somewhat arbitrary, since there is no reason for one item not to have several equally relevant synonyms (e.g., *chili* vs. *chili pepper*), but I needed to chose one main term to represent one spice. The reasons for this are the following: (1) I needed a convenient way to “call” each item, so they can be efficiently compared across the three languages. (2) I needed an identifying key for all of the other names of the same spice, and (3) I wanted to avoid any possible confusion between item that have overlapping common names (i.e. *pepper* vs. *pepper* is problematic, so I settled with *pepper* vs. *chile*<sup>5</sup>). The rationale behind the default set of names is further explained in chapter 6.

“Alternative” refers to any other current name that a spice can be known by, regardless of popularity, context, or reason. For example, *aniseed* is an alias for *anise* (the default term), and *Chinese parsley* is an alternative name for *coriander*.

“Historic” refers to once important terms that were at a certain point in history would have been considered default, and—due to their role and popularity in the past—still relevant today. This category especially includes cases where spice was attested under a different name from what it is known by now. For example, *badian* is now a chiefly historical term and was attested before the now standard *star anise*.

“Archaic” refers to historic words that are rare and not relevant today, but still recognizable, such as *Guinea pepper*, anno an early name for Cayenne pepper, but referring to one of three African spices

---

<sup>5</sup>In my dataset and code, I use the more botanically affiliated term, *chile*, to avoid confusions/errors due to spelling.

today.

“Obsolete” refers to names that are essentially dead, cf. *amomum*, which was last used for a specific spice in the 19<sup>th</sup> century. If a dictionary uses these remarks, (e.g., obsolete), I comply with the dictionary. I have identified a few more cases that could be best characterized as “speculative”, this refers to spice names that are not attested anywhere, and I assume them to be the author’s invention/translation.

I have highlighted the so-called default items as they also act as keys or identifier (ID) to the rest of the alternative names corresponding to the same spice.

### Borrowed Terms

In my analysis, I have marked spice terms according to their borrowed status. Based on data from dictionaries, etymological dictionaries, primary and secondary literature and my own judgment, I have indicated if the name is a borrowing or not, or whether it needs further checking. I have annotated spice names with ‘yes’, ‘not’, and ‘maybe’. Whenever available, I relied on word origins from general and etymological dictionaries for this information, but for a number of words I could not find existing entries or published research (see section 3.2.3). Whenever this was the case, I used historical corpora to find the earliest records, and in a handful of times where even this attempt failed, I resorted to estimation based on circumstantial historical sources. These are all marked in the relevant dataset.

On a deeper level, I have also annotated the nature of the borrowing: whether it is a phonetic loan, calque (loan translation/semantic translation), learned loan, or phono-semantic matching, and marked folk etymologizations.

### Meanings, Literal Meanings, Glosses

For every term in Arabic or Chinese, I added a gloss, so the literal meanings could be decoded, and most names also have written notes and comments on their logic, formation, origin, or any other remarkable aspect. Sometimes a short explanation is needed to understand the emergence of a term, or the grounds for its existence. Soon, the dataset of spice names was populated with terms corresponding to the botanically informed binomial names and the materials they represent, and based on the information from stage one, the names were also annotated with the macro-areas of their native geographic origin.

### Attestation

I have also recorded the details concerning attestation where available, noting a date, approximate date, century, and period (i.e. early Old English, Tang dynasty, etc.). For this information I used dates from the OED, in English, and historical corpora for Arabic and Chinese where available. The source of the attestation dates are noted in the dataset. I have also tried to gather the pre-modern documents where each name was recorded, with the title and author of the historical works for future reference.

### 3.2.3 Collecting Etymologies

In the third stage, I have collected detailed etymological information on selected names: the terms that were marked as default, and a few historic and highly relevant alternative names (aliases). Doing so, I now have a parallel set of spice nomenclature of the three languages for 24 spices, and I can compare them in terms of borrowed status, and their etymological development and origins. The etymologies will be discussed in the next chapter in detail, under every spice, and I also highlighted them using dedicated environments called *Etymology boxes* (see for example [Etymology 1](#)).

In terms of representation and storage, I deviated from the usual text format, and I have recorded etymological data in a way that it is machine-readable, but still easy to grasp and edit for the human eye as well. I have separated etymological stages, and types of information for each word, creating large spreadsheets that is relatively easily accessible and modifiable for both man and machine. Doing so, I enabled a way to extract only specific information when needed (sources, attestation dates, donor languages, etc.). I also facilitated for geospatial plotting that can be found in chapter [6](#), which gives a visual representation of the etymological stages the words have embarked on.

## 3.3 Sources

### 3.3.1 Primary Sources

One core component of this study is philological research. Philology is the meticulous study of literary texts, primarily of historical documents, to study language, history, philosophy, literature, culture, religion, or any traditional knowledge of exceptional importance strongly connected to a society, primarily through the analysis of historic texts (sometimes written in now dead languages). Modern philological research relies on two types of sources: primary and secondary literature. Primary literature denotes historical texts, the so-called classics, for example, the already mentioned *De Materia Medica* of the Greek physician Dioscorides (c. 40–90 AD) ([Dioscorides, ca. 50–70/2005](#)), books of Roman historians, such as Pliny the Elder (23/24–79 AD) and his *Naturalis Historia* (Pliny the Elder, [77/1855](#)) are good examples, not to mention the or 1<sup>st</sup>-century cookery book by Apicius ([Apicius, 1977](#)). There also available *materia medicas* from the Islamic scientific golden-age, such as the *al-Qānūn fī l-Tibb* [*Canon of Medicine*] of Ibn Sina/Avicenna (980–1037) ([Ibn Sīnā, 1025/1329](#)) and fantastic miscellanies from the Tang dynasty era, such as the *Youyang Zazu* [*Miscellaneous Morsels from Youyang*] from the 9<sup>th</sup> century ([Duan, ca. 860](#)). Indeed, we must not forget the Bible or Quran, as they are also rich historical and linguistic sources for our topic. A number of these primary texts are available in their original form through museums' and libraries' online databases, as transcribed editions in historical corpora, and of course published English translations. A vast number of classical texts (Greek and Latin) can be accessed through the Perseus Digital Library ([Crane, n.d.](#)). Critical editions of a classical text, such as that of the famous *Periplus Maris Erythraei* by Casson ([1989](#)), or de Goeje ([1870](#))'s *Bibliotheca Geographorum Arabicorum* series are also considered primary. Ancient and Classical dictionaries, such as the *Shuowen Jiezi*, or the *Lisān al-‘Arab* are also an integral part of philology. Secondary literature is everything else building on these works, monographs, histories

reviewing a multitude of authentic texts, published in recent times.

### 3.3.2 Etymological Dictionaries

Besides the literature itself discussed earlier, a core part of the philology component in this research are etymological dictionaries. Etymological thirst, the seeking of word origins was one of the cardinal thrills for early thinkers ever since Plato, and we will make use of the advances made in the past centuries. The [OED](#) has detailed etymological information based on previous works on English and for other languages, a couple of works to be mentioned are for Greek Beekes and van Beek ([2010](#)), Hebrew, Klein ([1987](#)), Old Chinese Schuessler ([2007](#)) and Chinese Liu et al. ([1985](#)). Unfortunately, Arabic lacks an authoritative etymological dictionary for many reasons<sup>6</sup>, but we can still turn to essential reference works such as the *Encyclopaedia of Islam*<sup>7</sup> (Bearman et al., [1960–2005](#)) or the *Encyclopaedia Iranica*<sup>8</sup> (Foundation & Yarshater, [1996–present](#)).

### 3.3.3 Reference Dictionaries

Key dictionaries were consulted throughout the data collection process, the following is an enumeration of the general or historical dictionaries I used:

**Note 3.3.1.** References to dictionary entries are made very frequently in this dissertation, and so I made the decision to use a compact way of citing dictionaries. Instead of following the standard APA 7<sup>th</sup> guideline and referencing every entry separately, I will indicate the entry as a page number or headword and reference every dictionary just once. This would save us from the pain of reading (Oxford University Press, n.d.-a) (Oxford University Press, n.d.-b) (Oxford University Press, n.d.-c) and its endless permutations. This minor deviation from the APA style will make the number of dictionary entries in the bibliography less oppressive, and the running citations more reader-friendly. I will also use footnote citations whenever I reference a dictionary, and I stick to this practice throughout the dissertation to make reading more comfortable.

## 3.4 Corpora

The second major component of this study is corpus linguistics, and I will use corpora from three major languages: English, Arabic, and Chinese. I chose these languages for two reasons. One, they represent three influential civilizations in the history of spices, as well as powers actively participating in trade throughout history, each having its zenith at slightly different historical periods, as I described previously.

For modern corpora, I will use the English Web 2020 (enTenTen20, circa 36.5 billion words), the

<sup>6</sup>For a brief overview on the matter, see Blažek ([2006](#))

<sup>7</sup>Limited access online at <https://referenceworks.brillonline.com/browse/encyclopaedia-of-islam-2>

<sup>8</sup>Accessible online at <https://iranicaonline.org/>

Arabic Web 2012, preprocessed with the Stanford tagger (arTenTen12, ca. 7.5 billion words), and the Chinese Web 2017, Simplified version (zhTenTen17, ca. 13.5 billion words), all hosted on the *Sketch Engine* (SkE) (<https://www.sketchengine.eu/>) (Kilgarriff et al., 2004, 2014). Enormous web corpora such as the above contains billions of words, therefore I will certainly have enough instances even for spices more rare.

language	type	period	corpus	size
English	web	modern	enTenTen20	36,5 billion words
Arabic	web	modern	arTenTen12	7,5 billion words
Chinese	web	modern	zhTenTen17	13,5 billion words
English	books	historic (15–19 <sup>th</sup> c.)	EHBC	826 million words
Arabic	books	historic (7–12 <sup>th</sup> c.)	KSUCCA	47 million words
Chinese	books	historic (–20 <sup>th</sup> c.)	Chinese Text Project	25 million characters
Chinese	books	historic (–20 <sup>th</sup> c.)	Scripta Sinica	797 million characters
Chinese	books	historic (–20 <sup>th</sup> c.)	CBETA	? million characters

Table 3.1 The list of corpora consulted in the thesis.

In terms of historical corpora, I have consulted a few collections. For English, I relied on the *English Historical Book Collection* (EHBC) (EEBO, ECCO, Evans) hosted on the Sketch Engine, that is around 826 million words and contains books published between 1473–1820, with a vast majority written around 1600. English also has a good coverage on the Google Books project ???. For Arabic, I have settled on using the *King Saud University Corpus of Classical Arabic* (KSUCCA), which is around 47 million words containing literature on various genres between the 7–11<sup>th</sup> centuries, ranging from books on medicine, geography, law, history, and religious texts (Alrabiah et al., 2013; Alrabiah et al., 2014). As for Chinese, I have frequented the *Chinese Text Project* (CTP) (Sturgeon, 2021, n.d.) which has base of 25 million characters pre-modern Chinese documents, not including the community edited texts. I also used the *Scripta Sinica* (SS) (around 754 million words), containing classics ranging from ancient times up until 1949 (Academia Sinica, 1993–2008); the 全唐詩 *Quan Tangshi* [Complete Tang Poems] (QTS) [Tang poetry collection], which contains around 48,900 poems; and the *Chinese Buddhist Electronic Texts Association* (CBETA) project, which contains the Chinese Buddhist Canon, also known as the Chinese Tripitaka (Ch'en, 1964, pp. 365–386). Thus, accommodating textual heritage from ancient times up until the 20th century.



# The Data: Spices

**A**N this chapter, I will introduce the data that this project is build on: the spices and their names. Every section in this chapter introduces a spice, on some occasions two or more closely related items. The set of spices will be presented alphabetically, and all sections are adhering to the following structure:

(o) A *Spice profile*, a name card-like environment for the spice under discussion with short, factual information, linked to a botanical database. This box also identifies the spice by listing its vernacular names in multiple languages. This is intended to be a convenience for the reader, a reference point of sorts one can return to anytime.

(1) A brief description about the nature, characteristics, and importance of the spice. This is intended as an introduction to the spice and its uses, and it includes the physical description of the material, its role as medicine, culinary seasoning, perfume, or dye, and its cultural significance, either locally or globally.

(2) A subsection on the botany, origins, cultivation, and identity of the spice, where the latter is included only if deemed necessary because of the situation is unclear or confusing. Under the heading “botany” I only discuss basic information regarding geographic distribution, native and introduced habitats, and conditions of growth that factor into a plant’s “spreadability”, which is tightly knit to its value as a crop. Agronomy and harvesting will also be mentioned where it commits to interesting notions about scarcity and demand.

(3) A subsection on the history of the spice follows, focusing on the first mentions, whether it is evoked in religious scriptures, described in pharmacopeias, documented in historiography, or praised in poetry. Besides this, key steps and events on the spices’ journey and spread will be introduced, especially where an item’s history is not widely known, or there are a lot of misconceptions. Materials whose cultural history, itinerary, and names have already been researched and written about will be only discussed concisely, directing the reader to existing scholarly publications.

(4) Lastly, I will examine the spice terminology in a subsection on the names of the spices under scrutiny, focusing on word origins and etymological analysis on one hand, and collecting and explaining synonyms on the other. This step will be conducted in three languages, English, Arabic, and Chinese, and will cover historic and closely related or alternative names. An alphabetic directory of spices treated in this dissertation follows:

1. allspice ( <i>Pimenta dioica</i> )	31	6. cassia ( <i>Cinnamomum cassia</i> et al.)	83
2. anise ( <i>Pimpinella anisum</i> )	42	7. chile ( <i>Capsicum annuum</i> et al.)	79
3. asafoetida ( <i>Ferula assa-foetida</i> et al.)	48	8. cinnamon ( <i>Cinnamomum verum</i> )	83
4. caraway ( <i>Carum carvi</i> )	63	9. clove ( <i>Syzygium aromaticum</i> )	101
5. cardamom ( <i>Elettaria cardamomum</i> )	67	10. coriander ( <i>Coriandrum sativum</i> )	103

11. cumin ( <i>Cuminum cyminum</i> )	109	18. nutmeg ( <i>Myristica fragrans</i> )	125
12. dill ( <i>Anethum graveolens</i> )	112	19. pepper ( <i>Piper nigrum</i> )	56
13. fennel ( <i>Foeniculum vulgare</i> )	114	20. saffron ( <i>Crocus sativus</i> )	128
14. fenugreek ( <i>Trigonella foenum-graecum</i> )	117	21. Sichuan pepper ( <i>Zanthoxylum spp.</i> )	135
15. ginger ( <i>Zingiber officinale</i> )	119	22. star anise ( <i>Illicium verum</i> )	138
16. long pepper ( <i>Piper longum</i> )	122	23. turmeric ( <i>Curcuma longa</i> )	141
17. mace ( <i>Myristica fragrans</i> )	125	24. vanilla ( <i>Vanilla planifolia</i> )	144

## 4.1 Allspice

### 1. ALLSPICE

POWO

English: allspice; pimento; Jamaica pepper. Arabic: فلفل إفرنجي *fulful ifranjī* [European pepper]; nan. Chinese: 多香果 *duōxiāngguǒ* [many-spice-fruit]. Hungarian: szegfűbors [clove-pepper]; *jamaicaibors* [Jamaican-pepper]; *amomummag* [amomum-seed].

Plant species:	<i>Pimenta dioica</i> (L.) Merr. (syn. <i>P. officinalis</i> Lindl.)
Family:	Myrtaceae
Plant part used:	unripe fruit; leaf
Region of origin:	S. Mexico to C. America; Caribbean
Cultivated in:	Jamaica, Mexico
Color:	dark brown



(a) berries



(b) powder



(c) leaves

Figure 4.1 Allspice berries, powder, and leaves from *Pimenta dioica*.

**Note 4.1.1.** Introducing the *Spice profile box*. As it can be seen above in *Spice profile 1* presenting allspice, this business-card-like environment gives a quick reference of the spice under scrutiny in a concise way. This is intended to be a convenience for the reader to return and glance back at brief, factual information about a particular item whenever necessary. The box also contains a clickable link to the related plant species in a botanical database, [POWO](#), where more information can be found, such as the plants' biodiversity, distribution, botanical synonyms, as well as images of specimens.

Allspice, also known as pimento and Jamaica pepper, refers to the dried unripe fruits of a tropical evergreen tree growing in the Caribbean: the *Pimenta dioica*. The dried berries are dark brown, hard to the touch, and 4–6 mm in diameter (thus larger than black pepper). Their signature crown is by a small ring of the calyx (van Wyk, 2014, p. 210). It is one of the few spices that do not come from the East; chili, vanilla, and allspice are the traditional three when one is listing spice products native to

the Americas (disregarding cacao which is not considered a spice today). It is also the only spice that is exclusively cultivated on the western hemisphere (Duke, 2002, p. 21). The term *allspice* is a coinage playing on the notion that the flavors and aroma of allspice is similar to that of clove, cinnamon, nutmeg, and black pepper (Mabberley, 2017, p. 717) — the most popular spices in Europe at the time when Europeans got in contact with this New World spice. People who only saw ground allspice but not whole, often tend to think that is in fact a spice mixture, after its name and rich flavor profile. Usually ground to powder, allspice is one of the key ingredients of Caribbean cuisine, especially jerk style dry-rub meat preparation. It is also used in European sausage making, pickling, baking, and flavoring liqueurs, it an overall “handy spice”.<sup>1</sup> It also found its way into some Middle Eastern spice blends.

**Note 4.1.2.** Allspice is sometimes called pimento, which is also the name of a cultivar of *Capsicum annuum*, famous from the Southern United States appetizer pimento-cheese. It is therefore important not to confuse allspice with the heart-shaped mild cherry peppers that North Americans also call pimiento or pimento.

#### 4.1.1 The Botany, Origin, and Cultivation of Allspice

The allspice tree is a small mid-canopy tree or shrub with smooth, bay-like leaves and tiny white flowers. The berries turn dark purple if left to ripe, and the leaves and the bark are also aromatic (Riffle, 1998, p. 279). Belonging to the myrtle family (*Myrtaceae*), allspice is related to other aromatic trees, such as clove, eucalyptus, and the bay rum tree. Its binomial name is made up of *pimenta*, the Portuguese (or corrupted Spanish) equivalent of ‘pepper’, and *dioica* ‘of two houses’ (Greek *di-* from *dyo* ‘two’ and *oikos* ‘house’), indicating that the male and female flowers are found on different plants (Peter, 2012, vol. 2, p. 166).

Allspice is indigenous to the regions ranging from Southern Mexico to Central America and the Greater Antilles of the Caribbean, especially Jamaica (Czarra, 2009, p. 146). Where naturalized, it spreads by birds carrying the seeds. Allspice has been since introduced to a few neighboring places, such as Colombia, Venezuela, and Florida (POWO, 2022a, p. 146). In 1885 it was introduced from Jamaica to Hawaii and Kauai, and it even reached Tonga.

Allspice is cultivated as a crop in a few countries, notably in Jamaica, Mexico, and to a lesser extent in Honduras and Grenada. The primary producer and the source of the highest quality being Jamaica. Saplings are grown from seeds, then soon transplanted when still small. The trees need well-drained soil and humid conditions (van Wyk, 2014, p. 210). It is one of the only spices that no one managed to grow in the East, transplantation efforts were quickly abandoned, and its commercial cultivation is confined to the Americas (Duke, 2002, p. 21). Harvesting happens similarly to how black pepper is harvested; the still green, unripe fruits are picked by hand, and then dried under the sun.

The flavor of allspice mainly comes from the component eugenol, which is dominant both in the fruit and the leaves, but other compounds also add to the complexity of its aroma. Eugenol — also

<sup>1</sup>The Icelandic name is *altrahanda*, literally ‘of all hands’, meaning ‘for various purposes’; showing its multifaceted uses.

called clove oil, for it constitutes 80-90% of the essential oil from clove buds (Barnes et al., 2007, p. 166) — is widely used as a flavoring agent by the food industry and in pharmacology, and is also found in cinnamon, nutmeg, and bay leaves. It has antiseptic, antibacterial, anesthetic, and analgesic properties (Ulanowska & Olas, 2021). The leaves of a related plant called the West Indian Bay Tree (*Pimenta racemosa*) is used to produce bay rum, a popular essential oil used by the perfume industry for its spicy notes.

#### 4.1.2 The History of Allspice

There is not much we know about allspice before the arrival of the Europeans, except that the Aztecs used it to spice up their chocolate drink (Farrell, 1985, p. 27), although Dalby (2000, pp. 145, 177) doubts this was the case that early on. According to Duke (2002, p. 21), the Maya used allspice for embalming. We know that it reached Europe as a consequence of Christopher Columbus's voyages. Spanish colonizers must have encountered allspice in the West Indies sometime after Columbus and his crew explored the islands of Hispaniola, Cuba, and Jamaica, and the year 1494 is reported (Opara & Chohan, 2021, p. 12). Columbus himself did not find it. In fact, he did not recognize any spice he was so keen on finding — pepper, cloves, nutmeg, cinnamon — but kept himself and his patrons in the delusion that he will. In his first letter to Ferdinand and Isabella he writes: “On this island there are many spices and great mines of gold and other metals. [...] I believe that I have found rhubarb and cinnamon.” (Columbus, 1893, pp. 10–18) — in reality, he had none.<sup>2</sup>

He was adamant that the islands he *discovered* were full of spices and brought up excuse after excuse (out of season, etc.) after every voyage he returned with no spice (Dalby, 2000, p. 149). He also believed that he was in India or Cathay, on one of the outlying islands. Between apologies, Columbus also promised more gold, silver, cotton, mastic, and slaves. As Dalby (2000, p. 150) reports, what he recorded in his private journal is a bit more honest and realistic version of events: “I think that many trees and plants grow here which will be highly valued in Spain for dyes and medicinal spices. But I am sorry to say that I do not recognize them.” Columbus repeatedly regrets his ignorance in botany in his journal (see also Columbus, 1893/2010, p. 57).

Interestingly, authors love to claim that Columbus brought back allspice (together with vanilla and chili): “He returned with allspice from the West Indies, chilies from Mexico and vanilla from Central America.” (Craze, 1997, p. 17), and “Columbus brought it back to Europe thinking it was pepper.” (Czarra, 2009, p. 146), or “Though he did not find the Spice Islands, Columbus brought allspice, vanilla and red peppers from the West Indies back to his Spanish supporters.” (Parthasarathy et al., 2008, p. 1). This is not true, he most likely never even saw allspice, but it was reported him that it is there and can be cultivated, along with cinnamon, and mulberry for silk production (Colón, 1571/1959, p. 151). Columbus returned from his first voyage of 1492–93 with some gold nuggets and jewelry, pearls, a hammock, tobacco, the turkey, and a few poor captured Taínos, but no spices were presented to the Spanish monarchs Ferdinand and Isabella. He did bring back pineapple and cassava

<sup>2</sup>Columbus's first letter of his first voyage, sent on March 4, 1493 from Lisbon to the Spanish court (and its translation) is also available online at King's College London. Transcription: <http://www.ems.kcl.ac.uk/content/etext/eo21.html>, translation: <http://www.ems.kcl.ac.uk/content/etext/eo22.html>

(J. Turner, 2004, p. 11).

Diego Álvarez Chanca, the court appointed physician who accompanied Columbus on his second expedition in 1493 is often credited with bringing home both chili, and allspice (McCormick, n.d.), but in his 1494 letter describing the flora and fauna, he only mentions *agi*, also *axi* — modern Spanish *ají* from Taíno — (see Corominas, 1987, p. 34), and that the natives use it to season their food, with what we now know as *Capsicum annuum*: the chili pepper (Chanca, 1494/2003, p. 31).

In the following century the Spanish tried to turn Mexico into a spice plantation by transplanting eastern spices, an effort that mostly failed. Only after this did the colonizers start to pay proper attention to native spices (Machuca et al., 2020, p. 6).

Francisco Hernández de Toledo, King Philip II's court physician and naturalist spent 7 years in New Spain between 1571–1577, studying its species and conducting interviews with the natives. He was the first to formally describe allspice. He called it *Pipere Tavasci* 'Tabasco pepper' (today *Pimienta de Tabasco*, after the region of Tabasco, famous today for a brand of hot sauce. Hernández also recorded the Nahuatl name of allspice: *xocoxochitl* 'sour flower'.<sup>3</sup> Hernández likens the flowers to pomegranates, and the aroma to that of orange blossoms, describing it to be very pleasant and attractive, with a sharp taste of the fruit. (Hernández, 1615, p. 2). In Machuca et al. (2020)'s translation:

“Xocoxochitl meaning sour flower, is a large tree, with leaves like those of the oranges, red flowers like a pomegranate, but with an aroma like the orange blossom, and in such a smooth and pleasant way, that even the leaves of the tree add to its attraction: the fruit is round, and hangs in clusters, which at first appear green, and then beige, and finally towards black: it is sharp and scathing to taste, and good-smelling”

According to Machuca et al. (2020), although allspice was known by the Spanish from early on “there are few historical records of its production and trade”, and only in the 18<sup>th</sup> century started they to consider American products to have economic potential.

Allspice berries are around 30% larger than peppercorns, and since their color and shape resembles black pepper, and it gave a spicy taste to food, it is no wonder that the Spanish called them *pimiento* 'pepper'. The Portuguese version is *pimento*, and later the botanical name *Pimenta* was given to the genus of plants related to allspice (Farrell, 1985, p. 26). I disagree with the often repeated trope that the Spanish explorers mistook allspice berries for pepper and called them *pimiento* “by mistake”<sup>4</sup>, these people knew exactly what they were looking for, and that what they have found is not the mighty black pepper; but for them it was a kind of pepper. The crew showed samples of pepper and cinnamon to presumably confused Native Americans hoping for directions, and as Columbus wrote in his journal on the 4<sup>th</sup> of November, 1492, they indicated by sign language that there is a lot of it around (Duke, 2002, p. 21; Columbus, 1493/2010, p. 67). The Europeans, however, soon recognized the value of allspice, even if it was not the expensive black pepper, but still more pungent and exotic than some cheap Old World substitutes, the juniper and myrtle berries (which are very similar to allspice in appearance and usage) (Dalby, 2000, p. 150).

<sup>3</sup>cf. S. Wood, 2000–2022, s.v. xococ, xochitl.

<sup>4</sup>Britannica, n.d., allspice.

In short, allspice was introduced to Europe by the Spaniards in the 16<sup>th</sup> century, its import was first recorded in 1601, according to Britannica (n.d.) and Farrell (1985, p. 26). After 1655, when Jamaica became a British colony for nearly three centuries, the Brits developed a taste for allspice and started to use it to season meat dishes, sauces, and pickles (A. Green, 2006, p. 74). They were also responsible for its spread to some extent which is illustrated by the names of allspice in some languages, e.g. Polish *ziele angielskie* ‘English herb’.

#### 4.1.3 The Names of Allspice

Allspice is a fascinating case, because it gives us examples for a plethora of names that showcase us many of the motivations, mechanisms, and solutions people choose when naming spices. As I mentioned before, some people are puzzled if allspice is a spice blend or not. The names in some languages often just add to the confusion, for example French *quatre-épices* (lit. ‘four spices’) can have the sense ‘allspice’, but also ‘a kind of spice mix’ made up of four different spices.<sup>5</sup>

##### English

**Etymology 1.** English *allspice*, from *all* + *spice*; after the flavour profile that resembles the combined aroma of cloves, nutmeg, cinnamon, and black pepper, 1621<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. allspice)

**Note 4.1.3.** Introducing the *Etymology box*. This environment, as seen above in *Etymology 1*, offers a quick look at a words’ origins and development.

Since its introduction to the spice cabinet, allspice has been known by many names from which currently *allspice* seems to be prevailing. *Allspice* was formed by compounding *all* and *spice*, for its flavor was perceived to be a combination of four characteristic spices that the Europeans knew and sought after: black pepper, cinnamon, cloves, and nutmeg.<sup>6</sup> It was first recorded in 1621: “Amber-greese, nutmegs, and all spice.”<sup>7</sup>, and probably inspired the French *toute-épice* ‘all-spice’, attested in 1762.<sup>8</sup>

Sadly, the original word for allspice was lost with the demise of the native Taíno people of the Caribbean, nevertheless we got Taíno<sup>9</sup> words such as barbecue, *cassava*, *guava*, *hammock*, and *tobacco* (Rafinesque, 1836, p. 229). As we concluded before, it is assumed that it was the Spanish who first got in contact with the allspice berry, and that they simply called it *pimienta* ‘pepper’.

<sup>5</sup>TLFi, 2012, s.v. *quatre-épices*.

<sup>6</sup>OUP, n.d., *allspice*; Britannica, n.d.

<sup>7</sup>OUP, n.d., *allspice*.

<sup>8</sup>TLFi, 2012, *toute-épice*.

<sup>9</sup>Taíno is a now extinct Arawakan language.

**Etymology 2.** English *pimento* ‘allspice; sweet pepper’, ca. 1660 < partly Portuguese *pimenta* ‘allspice; sweet pepper; black pepper’ < and partly Spanish *pimiento* ‘hot and sweet pepper; formerly also black pepper; pepper plant of both kinds’, earlier *pimienta* ‘black pepper; peppercorn; ground pepper’ 13<sup>th</sup> c., 1495 < Medieval Latin *pigmenta* ‘plant juice; food seasoning; condiment; spices; perfumes’, plural of *pigmentum* < Latin *pigmentum* ‘colour, paint; ointment; drug; spiced wine’, from *pingō* ‘to paint’ + *-mentum* ‘instrument’<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *pimento*); OUP (n.d., s.v. *pimento*); OUP (n.d., s.v. *pimiento*); Gómez de Silva (1985, p. 415) and Corominas (1987, p. 495); C. T. Lewis and Short (1879, s.v. *pigmentum*)

pimento For a long time *pimento* (and to a much lesser extent *pimiento*) — the words for ‘pepper’ in Portuguese and Spanish, respectively — was commonly used in English to refer to allspice. This is still the case in Jamaican English for example, where the term *allspice* is not used. In North American English however, *pimento* now rather refers to a small, round variety of chili pepper (*Capsicum annuum*), commonly known as cherry pepper explained in note 4.1.2.

The corruption and mix-up between the English words *pimento* and *pimiento* and their origins is as confusing as it gets. For the sake of a clear understanding, let us first consider the modern names for allspice in Spanish: *pimienta de Jamaica*, and Portuguese: *pimenta-da-jamaica*. In both cases, *pim(i)enta*, with a final *-a*, means ‘pepper’, referring to peppercorns of the usual black and white pepper (*Piper nigrum*). In Spanish and Portuguese, the words endings of *-o* and *-a* mark the grammatical gender, the significance of which dissipates in English. It is important to remember however, that the Spanish form *pimienta* emerged first from a Latin neuter plural suffix in the 13<sup>th</sup> century. Thus, perhaps a century or so later when the word *pimienta* was already embedded in Spanish, speakers perceived the word as a feminine noun, and a vacuum of a masculine counterpart emerged. This allowed for a practical differentiation by gender between the peppers of the Old World and the New World. Corominas (1987, p. 459) explains that *pimiento* derived from *pimienta*, and it was first applied in the Americas for the red fruits of the chili.

Gómez de Silva (1985, p. 415) makes the most compact distinction: “*pimienta* ‘(black) pepper; allspice’, *pimiento* ‘(hot and sweet) pepper’”. In contemporary Spanish, *pimiento* (the masculine form) refers to the fruits and plants of the *Capsicum* family, e.g. the numerous spicy chilies and mild bell peppers of red, green, and yellow, while *pimienta* (the feminine form) refers to the small round fruits of black and white pepper and its powdered forms. The distinction seems consistent, belonging to this latter group see for example *pimienta dulce* ‘sweet pepper’, and *pimienta gorda* ‘fat pepper’ both of which refers to allspice, not to be confused with *pimiento dulce*, which refers to sweet paprika powder.<sup>10</sup>

*Pimento* in English is a partly Portuguese, partly Spanish borrowing, while *pimiento* comes from Spanish. In fact, it is explained in the *OED* that in the ‘allspice’ sense of the word, *pimento*, from Portuguese *pimenta* (*daJamaica*), went through an alteration influenced by the Spanish word form, which is not attested in the ‘allspice’ sense. Ergo, Spanish *pimiento* maybe did not refer to allspice in

<sup>10</sup>Española, 2014, *pimiento*, -a.

Spanish at the time when the borrowing happened. And if so, *pimento* is a borrowing from Portuguese *pimenta* meaning ‘pepper’ and, as *pimenta da Jamaica*, ‘allspice’, influenced by Spanish *pimiento* ‘chili, sweet pepper’, also in the sense of the pepper plants of both kinds (chili and black). Spanish *pimiento* formerly had the sense of ‘black pepper, peppercorns, and ground pepper’ (before 1495), with an earlier form *pimienta* (13<sup>th</sup> century), now usually in sense ground pepper and peppercorns<sup>11</sup>. The Portuguese connection is only discussed by the *OED*, other dictionaries do not mention it. A direct Spanish borrowing is also plausible if we consider that it was the Spanish who most likely brought it back first, they probably called it *pimiento/-a*, and they were responsible for its subsequent diffusion in Europe. English spellings varied greatly of this this Romance word, using forms such as *piemente* in the late 1600s.

The origin of these words is the classical Latin *pigmentum* ‘a material for coloring, a color, paint, pigment’, with a transferred meaning ‘the juice of plants’ in post-classical Latin.<sup>12</sup> The word *pigmentum* is made up of *pingō* ‘to paint’ and *-mentum*, a suffix denoting an ‘instrument, medium’, well recognizable from Romance languages and English (i.e. excitement). According to Corominas (1987, p. 459), Catalan *pimienta* is attested in the 13<sup>th</sup> century and it comes from the plural (*pigmenta*) of Latin *pigmentum* ‘coloring, paint’, which already meant ‘drug, ingredient’, and later, ‘condiment’ in Medieval Latin. Derived from this, in 1495 *pimiento* was applied to the the plants bearing the pungent red fruits of the Americas. *Pigmentum* also entered English as *pigment* ‘paint, dye, ingredient in an ointment, drug’. According to the *OED*, Medieval Latin *pigmentum* also referred to spiced drinks (9<sup>th</sup> century), perfumes, and hence spice in general. Old French cognates support this, *pigment* had the sense of ‘balm, fragrant spice’ in the 12<sup>th</sup> century, Anglo-Norman *pigment/piment* meant ‘spice, spice wine’<sup>13</sup>, and Middle English *pihmentum* (12<sup>th</sup> century, later *piment*) had a sense of “a spiced drink, a remedy or concoction containing spices”,<sup>14</sup> “a sweetened, spiced wine used for refreshment and in medical recipes; a medicinal potion”.<sup>15</sup> *Piment* in French were later applied for chili, especially the cultivar of cayenne pepper. (The *OED* points to the sense ‘cayenne pepper’ in a “10<sup>th</sup> century French source”, which must be an error.)

Allspice is also known as *Jamaica pepper*, for it mainly grows on the island and the historical reasons described above. Many languages calqued *pimienta de Jamaica* from Spanish, or another transmitting language (e.g. Italian *pepe della Giamaica*). *Jamaica pepper* was first recorded in 1661: “A kind of Pepper, that tastes like Cloves, and very Aromatick (known by the name of Iamaica-Pepper)”.<sup>16</sup>

The name *myrtle pepper* echoes the similarities of the allspice tree with European myrtle (*Myrtus communis*), especially after the resemblance of their purple berries. Beyond the physical resemblance, myrtle berries are also edible, and are also dried to add to pepper mills as a spice. Furthermore, the European myrtle has aromatic leaves and wood as well, and it is used to grill and smoke meat in Southern Europe since Roman times, especially on Sardinia and Corsica; the same way the Caribbean

<sup>11</sup>OUP, n.d., *pimento*.

<sup>12</sup>C. T. Lewis and Short, 1879, *pigmentum*.

<sup>13</sup>OUP, n.d., *pigment*.

<sup>14</sup>Harper, n.d.-b, *pigment*.

<sup>15</sup>R. E. Lewis et al., 1952–2001, *piment*.

<sup>16</sup>OUP, n.d., *Jamaica*.

people use allspice wood and leaves. The myrtle berry appears in Roman and Greek mythology as well (van Wyk, 2014, p. 186).

#### clove pepper

The name *clove pepper* has “chemical reasons”, namely that this name arises from the aroma of allspice that reminded people of clove. This is due to its eugenol content we discussed above. *Szegfűbors* lit. ‘clove-pepper’ is the most common name for allspice in Hungarian still, and it is used in sausage making.

#### newspice

One of the most interesting spice names we can come across in my opinion is *newspice*. The term is now archaic in English, but the idea still exists in a few European languages, such as Serbian and Macedonian *најгвирц* *najgvirc* from German (*Neugewürz*), Czech and Slovak (*nové koření/korenie*), and Turkish *yenibahar* and Romanian *ienibahar* from Ottoman Turkish يېنى باھار *yeñibahar*; all the above literally meaning ‘new spice’.

The reason behind these names is that during the 17-18<sup>th</sup> centuries, allspice “suddenly” arrived to Central and Eastern Europe as a new (and possibly marketed as a trendy) spice. This happened a century after the red hot paprika took the world by storm (by 16<sup>th</sup> century it reached Hungary from the Ottoman Empire), and while the chili did not conquer northern Europe, allspice — to an extent — did. We could philosophize why the chili did not deserve the name ‘new spice’ when it first arrived, or why the Europeans — except on the south — were reluctant to assimilate it into their cuisines. Was the pungent chili too harsh for a Northern palate to consider? Is it the sophisticated chemical complexity of allspice that made it fashionable in Victorian England? All these questions are leading us to deep waters regarding the human palate and cultural attitudes toward spices and spiciness, as well as environmental and genetic factors deciding the heat of preference explored by interesting papers such as Spence (2018) and Törnwall et al. (2012).

We know that in the beginning allspice was overlooked by Europeans, and this is possibly the reason why allspice’s original name did not survive unlike the Nahuatl word *chilli*. Allspice was later sold and used in beverages and cookery, but its rising star never came close to that of chili. In Asia, where chilies were adopted early on and, eagerly transplanted, they transformed and revolutionized cuisine forever. It is unimaginable to think of Indian, Indonesian, or Chinese dishes without chilies today. Inversely, allspice is mostly unknown in East Asia, and the reasons behind it are just as botanical as historical: In the 16-17<sup>th</sup> century nobody knew how to grow allspice, while chili can be grown everywhere effortlessly. In addition, Europeans did not sail to Asia to sell spices, they went to take them.

As the 20<sup>th</sup> century came around, allspice — the only spice still exclusively imported from the Western hemisphere — quietly became one of the many, and its fervor faded a little. America was not new anymore, and the name *new spice* as well became obsolete. An English textbook for students of Italian narrates a letter from 1680 about this *Nuova Spezie* and the author’s opinion on it:

“I Am much obliged to you for the Drug you sent me inclosed in your last letter, about which I cannot tell you any thing but that it is called the New Spice, and it comes as it is said, or as it is guessed, from the West-Indies, and not from the East-Indies; and it is but six months that I had knowledge of it from Count Laurence Magalotti, who showed it me

under the abovesaid name of New Spice. How many different tastes are found in it by several honest folks ! that of the clove is the principal ; that of the nutmeg is the second in rank ; the cinnamon comes as it were the third in order ; next the citron ; then the smell of the musk and of the amber, and the most sweet taste of sugar. The truth is, in my opinion, that it is a pretty Drug. I am in Florence, and with for an occasion to do you service ; so command me with all freedom, and be certain that I will count it as good luck to have any power to serve you. I affectionately kiss your hands. Florence, 26th March 1680.” (Baretti, 1755, p. 5)

And so, we have established a few categories when it comes to the names of allspice: (1) names that are made up of *spice* as a headword and a modifying word, (2) names that use *pepper* as a headword with a modifier, and (3) names that are taken from Portuguese and Spanish. See table 4.1 for a concise overview.

#	Species	Name	Source
1	<i>Pimenta dioica</i>	allspice	van Wyk (2014)
2	<i>Pimenta dioica</i>	clove pepper	Duke (2002)
3	<i>Pimenta dioica</i>	Jamaica pepper	van Wyk (2014)
4	<i>Pimenta dioica</i>	myrtle pepper	Peter (2012)
5	<i>Pimenta dioica</i>	newspice	Peter (2012)
6	<i>Pimenta dioica</i>	pimento	van Wyk (2014)
7	<i>Pimenta dioica</i>	pimento berry	OUP (n.d.)
8	<i>Pimenta dioica</i>	pimiento	OUP (n.d.)

Table 4.1 Various names for allspice in English.

## Arabic

**Etymology 3.** Arabic *fulful ifranjī* فلفل إفرنجي ‘allspice’ [European pepper], literally ‘Frankish pepper’, named so because it was transmitted by Europeans, 1700?<sup>a</sup>

<sup>a</sup>Baalbaki (1995)

Arabic, similarly to English, boasts with a diverse set of names when it comes to allspice. First and foremost, it is known as *filfil ifranjī* ‘European pepper’. *Ifranjī* literally translates to ‘Frankish’, but it became the epithet of white Europeans, similarly to the term *farang*<sup>17</sup> in Southeast Asia. The rationale behind this name is evident: it was Europeans who introduced this spice to the Middle East and North Africa in the centuries following its debut.

Allspice’s Middle Eastern history is the topic I have found the least amount of information on, considering every other spice in this chapter. As it is an ingredient that have arrived long after the

<sup>17</sup>A word of Persian origin, applied for the Franks during the crusades (from Old French *franc*), and later by extension to any white merchant used from Persia to Thailand.

classical times, it is not discussed in the literature I have consulted, and modern articles only deal with it for its pharmaceutical and health benefits, not with its journey. The challenge to find further Arabic synonyms is also increased, because both English names *allspice* and *pimento* are ambiguous. I have found examples of wrongly glossed entries in both Arabic, and Chinese dictionaries. Be that as it may, I have managed to collect a few other Arabic names for allspice from contemporary dictionaries, these can be seen in table 4.2.

Further common vernacular names are *fifil hulw* lit. ‘sweet pepper’, and *bahār hulw* lit. ‘sweet spice’, where *bahār* ‘spice’, is a loanword from Persian. Persian بھار *bahār* means spring (the season), it was borrowed into Arabic with a sense of blossoms and foliage, alluding to the leaves and flowers of plants as the source of many spices.<sup>18</sup> In the ‘spice, seasoning, condiment’ sense, the word spread regionally via Ottoman Turkish (loaned from Arabic). Similarly to the case of English, the word for spice was associated with the allspice berries, and consequently resulted in the already mentioned Turkish *yenibahar* [newspice] ‘allspice’, and μπαχάρι *bachári* ‘allspice’. Thus, just like English, Arabic propagates allspice names by using the words for ‘spice’ and ‘pepper’ with modifiers indicating qualities of taste, or who carried the spice.

#	Species	Name	Tr.	Gloss	Source
1	<i>Pimenta dioica</i>	بھار حلو	<i>bahār hulw</i>	sweet spice	E. O. T. Wiktionary (n.d.)
2	<i>Pimenta dioica</i>	فلفل البساتين	<i>fulful al-basātīn</i>	pepper of the gardens	Almaany (n.d.)
3	<i>Pimenta dioica</i>	فلفل افرنجي	<i>fulful ifranjī</i>	European pepper	Baalbaki (1995)
4	<i>Pimenta dioica</i>	فلفل تابل	<i>fulful tābil</i>	spice pepper	Almaany (n.d.)
5	<i>Pimenta dioica</i>	فلفل حلو	<i>fulful hulw</i>	sweet pepper	Baalbaki (1995)

Table 4.2 Various names for allspice in Arabic.

## Chinese

duoxiangguo In Chinese, allspice goes by the name 多香果 *duōxiāngguǒ* [many-spice-fruit], supposedly a Chinese rendering of *allspice*. However, in China allspice is practically non-existent; it is not used in dishes, does not feature in TCM databases, and generally unknown besides Western specialty grocery shops. A search in Baidu Index yields no results as well. All the names except 甜胡椒 *tián hújiāo* ‘sweet (black) pepper’ shown in table 4.3 are relatively modern semantic translations of presumably English sources. Just like in Arabic, it obviously does not show up in pre-modern corpora, and scarcely present in the modern corpus.

## Summary

<sup>18</sup>Dozy, 1881, p. 121.

#	Species	Name	Tr.	Gloss	Source
1	<i>Pimenta dioica</i>	多香果	<i>duōxiāngguǒ</i>	many-spice-fruit	Kleeman and Yu (2010)
2	<i>Pimenta dioica</i>	全香子	<i>quánxiāngzǐ</i>	all-spice-seed	
3	<i>Pimenta dioica</i>	甜胡椒	<i>tiánhújiāo</i>	sweet-barbarian-pepper	Lau (n.d.)
4	<i>Pimenta dioica</i>	牙買加胡椒	<i>yámǎijiā hújiāo</i>	Jamaica-barbarian-pepper	MDBG (n.d.)
5	<i>Pimenta dioica</i>	眾香子	<i>zhòngxiāngzǐ</i>	many-spice-seed	MDBG (n.d.)

Table 4.3 Various names for allspice in Chinese.

#	Language	Term	Gloss	Loan	Source
1	English	<i>allspice</i>		no	OUP (n.d.)
2	English	<i>Jamaica pepper</i>		no	OUP (n.d.)
3	English	<i>pimento</i>		yes	OUP (n.d.)
4	English	<i>pimento berry</i>		no	OUP (n.d.)
5	English	<i>pimiento</i>		yes	OUP (n.d.)
1	Arabic	<i>fulful al-basātīn</i>	pepper of the gardens	no	Almaany (n.d.)
2	Arabic	<i>fulful ifranjī</i>	European pepper	no	Baalbaki (1995)
3	Arabic	<i>fulful tābil</i>	spice pepper	no	Almaany (n.d.)
4	Arabic	<i>fulful hulw</i>	sweet pepper	no	Baalbaki (1995)
1	Chinese	<i>duōxiāngguǒ</i>	many-spice-fruit	yes	Kleeman and Yu (2010)
2	Chinese	<i>tiánhújiāo</i>	sweet-barbarian-pepper	no	Lau (n.d.)
3	Chinese	<i>yámǎijiā hújiāo</i>	Jamaica-barbarian-pepper	yes	MDBG (n.d.)
4	Chinese	<i>zhòngxiāngzǐ</i>	many-spice-seed	yes	MDBG (n.d.)

Table 4.4 Conventionalized names for allspice in English, Arabic, and Chinese, found in dictionaries.

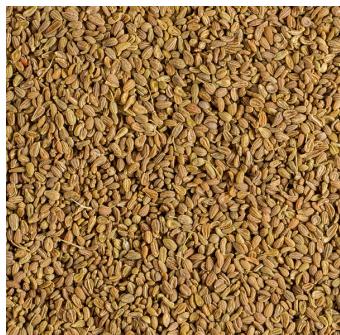
## 4.2 Anise

### 2. ANISE

POWO

English: anise; aniseed. Arabic: أيسون *anīsūn*. Chinese: 茴芹 *huíqín* [anise-celery]. Hungarian: *ánizs*.

Plant species:	<i>Pimpinella anisum</i> L.
Family:	<i>Apiaceae/Umbelliferae</i>
Plant part used:	fruit; oil
Region of origin:	E. Mediterranean; W. Asia
Cultivated in:	Turkey, Egypt, Spain, Russia, Italy, etc.
Color:	light brown



(a)



(b)



(c)

Figure 4.2 Anise *Pimpinella anisum*.

Anise (*Pimpinella anisum*) is a herbaceous plant, native to the Eastern Mediterranean and the Levant. It yields downy schizocarps,<sup>19</sup> fruits which people call seeds. Hence the popular contracted form of the name, *aniseed*. The seed-like fruits are grayish-green to light brown in color, and around 3–6 mm long (van Wyk, 2014, p. 212). Commercially available anise is usually sold whole, with a bit of stalk attached. Anise has visible *vittae* (oil ducts) embedded in the fruit wall (Peter, 2012, vol. 2, p. 139), which is a feature similarly found on the fruits of related umbelliferous aromatic plants, such as fennel, cumin, caraway, carom/ajwain, and dill seeds. Anise is sought after for its characteristic, liquorice-like sweet aroma and flavor, used in gastronomy, confectionery, and liqueur making – especially around the Mediterranean. Anise and its essential oil is traditionally used as a flavoring for food, candy, and alcoholic drinks, however star anise oil from China has gradually replaced anise oil in the industry thanks to it being a much cheaper substitute (van Wyk, 2014, p. 212).

<sup>19</sup>Schizocarp refers to a dry compound fruit which splits into two or more one-seeded carpels (mericarps) without dehiscing

**Note 4.2.1.** It is important to make the distinction between anise (*Pimpinella anisum*) and star anise (*Illicium verum*) from the beginning. These are two unrelated spices with distant origins. The similarities in name are due to their similarity in flavor, thanks to the organic compound anethole.

The taste, smell, and even the appearance of anise resembles other — related and unrelated — spices, such as fennel, dill, liquorice, and star anise. This leads to a certain degree of confusion around the names which these plants and their products are known today in various languages. We will introduce this problem in more detail in section 6.3 in [The Names of Spices](#).

#### 4.2.1 The Botany, Origin, and Cultivation of Anise

Anise is an annual herb from the family *Apiaceae/Umbelliferae*. Growing less than a meter tall, it brings small white flowers in umbels, the shape of an umbrella which is typical for this family of parsley, celery, and carrot. This family also contains many other aromatic flowering plants, such as asafoetida, coriander, cumin, caraway, dill, and fennel.

Anise originates in the Eastern Mediterranean region, growing from South East Turkey through Syria to the coasts of Lebanon, Israel, Palestine, and Egypt, including Cyprus, and in some sources also Greece. It has been cultivated since 2000 BC (Mabberley, 2017, p. 718). Anise today is naturalized in most of Europe and Central Asia, and it is cultivated as a crop in various regions around the globe, including, Southern Europe, Southern Russia, Turkey, the Middle East and North Africa, Pakistan, India, China, Chile, Mexico and the United States (Farrell, 1985, p. 32). It requires good soil, lots of sun and warmth, and also arduous to transplant. During harvest at summer's end when the fruits begin to ripen, the plant parts above ground are cut and the “seeds” are dried (van Wyk, 2014, p. 212).

#### 4.2.2 The History of Anise

Anise has a long history around the Mediterranean, and its popularity is still concentrated there. It was used both as medicine and a culinary spice, as I mentioned above. The ancient Greeks took it as a breath freshener, and the Romans used it in their cooking (Farrell, 1985).

Pliny wrote a section of remedies with anise in his *Natural History*, where he explains that it was recommended by Pythagoras to take with wine against scorpion stings, but it is also a great ingredient—both green and dried—in sauces and breads. And of course, it sweetens the morning breath with a little honey and smyrnion<sup>20</sup> (Pliny the Elder, 77/1855, 20:72 ).

Medieval European herbals tell of carminative effect: “The seed wasteth and consumeth winde, and is good against belchings and upbraidings of the stomach, alaieth gripings of the belly, provoketh urine gently, maketh abundance of milke, and stirreth up bodily lust: it staieth the laske (diarrhea), and also the white flux (leukorrhea) in women.” (Gerarde, 1597, 880 ). Based on modern research, anise oil and anethole is antibacterial, antifungal, antioxidant, carminative, and expectorant (Peter,

<sup>20</sup>*Smyrnium olusatrum*, an edible pot herb commonly known as *alexanders*

2012, vol. 2, p. 144).

The Brits and Arabs use it since the Middle Ages. According to Wilson (2005), the tradition of the wedding cake grew out of the customary spiced cakes at the end of feasts during Roman times, which served as digestive. In modern Europe, its use is prevalent in confectionery (such as aniseed balls), but especially liqueurs. From the many Mediterranean alcoholic beverages flavored with anise, we can mention anisette and absinthe (made with *Artemisia absinthium*), from France, sambuca from Italy, and ouzo and mastika from Greece. In the Eastern Mediterranean, it can be found in Turkish raki, and the many araks of the Levant.

#### 4.2.3 The Names of Anise

Anise is a typical **Wanderwort**: emerging from moderately obscure origins, it is now ubiquitous to the languages of Europe and its sphere of influence where it is culturally significant.

##### English

#	Species	Name	Source
1	<i>Pimpinella anisum</i>	anise	van Wyk (2014)
2	<i>Pimpinella anisum</i>	aniseed	van Wyk (2014)
3	<i>Pimpinella anisum</i>	sweet cumin	Peter (2012)

Table 4.5 Various names for anise in English.

**Etymology 4.** English *anise*, ca. 1325 < French *anis* ‘anise’, 1236 < Latin *anīsum* ‘anise’, (dill is *anēthum*) < Ancient Greek ἄνισον *ánison* ‘anise; dill’, and other Greek dialectal variants, e.g.: *ánēthon*; included both plants, only later distinguished (probably of substrate origin) <? Egyptian (Ancient) *jnst* ‘a medicinal, edible plant (probably anise)’<sup>a</sup>

<sup>a</sup>OUP (n.d., anise) and AHD (2022, anise); TLFi (2012, s.v. *anis*); C. T. Lewis and Short (1879); Liddell and Scott (1843/1940); Erman and Grapow (1926, p. 99) and Hemmerdinger (1968, p. 240)

To English, it arrived in the 14<sup>th</sup> century via French *anis*, which descended from Latin *anīsum*. The Latin word is a borrowing from Ancient Greek ἄνισον *ánison*, which is attested in different forms in various Greek dialects of the time, sometimes with -nn- and theta instead of sigma (e.g. ἀνῆθον *anēthon*). We can often read that this word originally referred to dill, but it seems that the Greeks did not distinguish between the two, and the terms included both plants.<sup>21</sup> Hence the scientific name of dill: *Anethum graveolens*. According to Beekes and van Beek (2010, pp. 103, 107), *ánison* is anise, while *anēthon* is dill, but he points out that they probably have the same etymon. The Romans borrowed both words, and the distinction was made explicit in *anīsum* vs. *anēthum*. The modern scientific

<sup>21</sup>OUP, n.d., anise.

names bear the Latin names: *Pimpinella anisum* (anise), where meaning of *pimpinella* is uncertain, and *Anethum graveolens* (dill), where *graveolens* means ‘strong scented’ (Gledhill, 2008, pp. 184, 303). The confusion of the Greek words had an effect on English much later as well, in Matthew 23:23 of the *King James Version of the Bible (KJV)*<sup>22</sup> talks of anise, while newer, more accurate translations, such as the *New Revised Standard Version of the Bible (NRSV)*<sup>23</sup> mention dill. In fact, one of the first attestation in English comes from Wycliffe’s Bible in 1382, between mint and cumin: “That tithen mente, anete [anese], and comyn.”<sup>24</sup> Beyond Greek, the etymology of this word is uncertain, Beekes and van Beek (2010, pp. 103, 107) suspects a pre-Greek, substrate origin demonstrated by the phonological variations. Although the *Wb* in an early Egyptian glossary makes a connection with the Egyptian word rendered as *jnst*<sup>25</sup> ‘an edible plant for medicinal use’ in the literature of the Middle Kingdom, the assumption is marked with question marks in the original handwritten glossary (Hemmerdinger, 1968, p. 240; Erman & Grapow, 1926, p. 99). The *American Heritage Dictionary of the English Language (AHD)* remarks that the Greek word is “perhaps from or akin” to Egyptian *inšt*—using a different transliteration—which is a kind of plant used in the preparation of refreshing drinks, possibly anise.<sup>26</sup>

The idea is not far-fetched, anise, dill and other herbs are native to the region and were “almost surely grown” for their medicinal properties (Redford, 2001, vol. 2, p. 3). We know that spices and herbs were used to flavour Ancient Egyptian cooking, Egyptologists have identified indigenous ingredients (dill, fenugreek, parsley, thyme, nigella, fennel, marjoram, mint), those imported and transplanted from neighboring Palestine (dill, cumin, coriander, caraway) and those obtained through distant trade (cinnamon and peppercorns from Asia) by the wealthy, later during the New Kingdom times (Redford, 2001, vol. 1, pp. 394, 540).

Anise is also known as *aniseed*, which is a contraction from *anise* and *seed*, a usage form that emerged in the late 14<sup>th</sup> century.

*Sweet cumin* is another conventional name for anise, which shows the primacy of the word *cumin* in English, when it comes to similar aromatic plants and their seeds. Cf. *wild cumin*, *Armenian cumin*, *mountain cumin* (caraway); *royal cumin*<sup>27</sup> (bishop’s weed), and the always ambiguous *black cumin*

## Arabic

**Etymology 5.** Arabic *anīsūn* أَيْسُون ‘anise’, (later assimilated as *yānsūn* يَانْسُون), a. 791 < Ancient Greek ἄνισον *ánison* ‘anise; dill’, and other Greek dialectal variants, e.g.: *ánethon*; included both plants, only later distinguished (probably of substrate origin) <? Egyptian (Ancient) *jnst* ‘a medicinal, edible plant (probably anise)’, ca. 2030–1650 BC<sup>a</sup>

<sup>a</sup>Wehr (1976); Liddell and Scott (1843/1940); Erman and Grapow (1926, p. 99) and Hemmerdinger (1968, p. 240)

<sup>22</sup>Source: <https://www.biblegateway.com/passage/?search=Matthew+23%3A23&version=KJV>

<sup>23</sup>Source: <https://www.biblegateway.com/passage/?search=Matthew+23%3A23&version=NRSVUE>

<sup>24</sup>OUP, n.d., anise.

<sup>25</sup>Transliterated as *inš.t* in Erman and Grapow (1926, p. 99), conventional Egyptological pronunciation: /inset/

<sup>26</sup>AHD, 2022, anise.

<sup>27</sup>Parallel to Indo-Persian *shāh-jūrā* [king-cumin] ‘caraway’

#	Species	Name	Tr.	Gloss	Source
1	<i>Pimpinella anisum</i>	أنيسون	<i>anīsūn</i>	phonetic	Wehr (1976)
2	<i>Pimpinella anisum</i>	كمون حلو	<i>kammūn ḥulw</i>	sweet cumin	Wehr (1976)
3	<i>Pimpinella anisum</i>	بانسون	<i>yānisūn</i>	phonetic	Wehr (1976)
4	<i>Pimpinella anisum</i>	حبة حلوة	<i>ḥabba ḥulwa</i>	sweet grain, seed	Wehr (1976)

Table 4.6 Various names for anise in Arabic.

In Arabic, similarly to English, the name of anise is a loanword from Greek. It is known by many spelling variations: *anīsūn*, *ānīsūn*, *ansūn*, *yānsūn*, and *yansūn*. In general, the *a*- forms were the initial loanword taken directly from Greek, then a *y*- form emerged that assimilates better in Arabic phonology. In addition, synonyms for anise are *kammūn ḥulw*, lit. ‘sweet cumin’, and *ḥubba ḥulwa* ‘sweet grain, sweet seed’.

Anise in Persian, is بادیان رومی *bādyān rūmī*<sup>28</sup>, literally ‘Roman anise’, where *bādyān* is an archaic word for either fennel or anise, the etymon of French *badiane* that begot English *badian* ‘star anise’. A possible connection between Persian *bādyān* and Mandarin Chinese 八角 *bajiao* ‘star anise’ have been proposed before, but in my opinion this is merely wishful thinking.

### Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Pimpinella anisum</i>	茴芹	<i>huíqín</i>	hui-celery	Kleeman and Yu (2010)
2	<i>Pimpinella anisum</i>	茴香	<i>huíxiāng</i>	hui-spice	Kleeman and Yu (2010)
3	<i>Pimpinella anisum</i>	西洋茴香	<i>xīyáng huíxiāng</i>	western-ocean-hui-spice	Wikipedia (n.d.)
4	<i>Pimpinella anisum</i>	洋茴香	<i>yáng huíxiāng</i>	ocean-hui-spice	CUP (2022)
5	<i>Pimpinella anisum</i>	歐洲大茴香	<i>ōuzhōu dàhuíxiāng</i>	European-big-hui-spice	Wikipedia (n.d.)

Table 4.7 Various names for anise in Chinese.

The gathering of names for anise is a bit difficult in Chinese for two reasons. Firstly, anise as a spice is relatively unknown in China except for Xinjiang, and therefore names are hard to find in sources. Since other spices with a similar flavour profile, such as the native star anise and the naturalized fennel are readily available, so anise was never imported into China. Consequently, we cannot find anise in reference works on Chinese food plants nor in Chinese *materia medica* (see S.-Y. Hu, 2005; S.-y. Hu, 1980/1999). It does however appear in the FoC<sup>29</sup> Secondly, identifications is problematic and confusing due to the mixing of terms *anise*, *aniseed*, *star anise*, *star aniseed*, etc. in English, and

<sup>28</sup>Hayyim, 1934–1936, Vol. 1, p. 197.

<sup>29</sup>Source: [http://www.efloras.org/florataxon.aspx?flora\\_id=2&taxon\\_id=200015767](http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=200015767)

Chinese dictionaries, and in some databases as well. Dictionaries that do not give botanical names are of little help to clarify doubts, but some conclusions can be derived with care. Most dictionary entries in Chinese that translate *anise* to *aniseed* should in fact say *star anise*, as they are all words referring to the Asian spice, except for one: 茴芹 *huiqin*.

Anise in Chinese is 茴芹 *huiqin* ‘anise-celery’, which appears to be a relatively modern, scientific coinage, and the only **phytonym** that appears in any publication (the FoC). It is used in the strict sense of *Pimpinella anisum* and cannot be misunderstood for star anise (*Illicium verum*). It does not appear in historical corpora, and it is not included in the 7<sup>th</sup> edition of the *Xiandai Hanyu Cidian* [A Dictionary of Modern Chinese] (Chinese Academy of Social Sciences, 2016), but it appears in the *Cambridge English-Chinese (Traditional) Dictionary (CEC)*<sup>30</sup>, which gives us *huiqin*, along with 洋茴香 *yanghuixiang* ‘Western anise’. 茴香 *huixiang* really refers to fennel, and the only reason it appears in Kleeman and Yu (2010) is the confusion between the materials, and their names. The nomenclature and the reasons behind its confusion will be explored in more detail in section 6.3. A few other names are mentioned on the Chinese Wikipedia page of the plant, these all refer to the European origins of this spice, or referring to “Western Ocean”, the Indian Ocean used to denote foreign, western products that have arrived over sea.<sup>31</sup>.

A Latin-Chinese dictionary from a presbyterian missionary from 1841 lists *huiqin* as *thymus* ‘thyme’,<sup>32</sup> which is rather confusing considering that 10 years earlier, the same author rendered it ‘oregano’ in his Portuguese-Chinese dictionary.<sup>33</sup>. From this, we can speculate that more of the various spice herbs that the Portuguese and other Europeans brought to Macao were first denoted with *huiqin*.

## Summary

Table 4.8 shows the names of anise that can be found in dictionaries.

#	Language	Term	Gloss	Loan	Source
1	English	<i>anise</i>		yes	OUP (n.d.)
2	English	<i>aniseed</i>		no	OUP (n.d.)
3	English	<i>sweet cumin</i>		no	OUP (n.d.)
1	Arabic	<i>anīsūn</i>	phonetic	yes	Wehr (1976)
2	Arabic	<i>kammūn ḥulw</i>	sweet cumin	no	Wehr (1976)
3	Arabic	<i>yānisūn</i>	phonetic	yes	Wehr (1976)
4	Arabic	<i>ḥabba ḥulwa</i>	sweet grain, seed	no	Wehr (1976)
1	Chinese	<i>huíqín</i>	hui-celery	no	Kleeman and Yu (2010)
2	Chinese	<i>huíxiāng</i>	hui-spice	no	Kleeman and Yu (2010)

Table 4.8 Conventionalized names for anise in English, Arabic, and Chinese, found in dictionaries.

<sup>30</sup>Source: <https://dictionary.cambridge.org/dictionary/english-chinese-traditional/anise> and <https://dictionary.cambridge.org/dictionary/english-chinese-traditional/aniseed>.

<sup>31</sup>Source: <https://zh.wikipedia.org/wiki/%E8%8C%B4%E8%8A%B9>

<sup>32</sup>Gonçalves, 1841, p. 715.

<sup>33</sup>Gonçalves, 1831, p. 585.

## 4.3 Asafoetida

### 3. ASAFOETIDA

POWO

English: *asafoetida*; *hing*; *devil's dung*. Arabic: حلبيت *hiltit*. Chinese: 阿魏 *āwèi*. Hungarian: *ördöggyökér* [devil's root]; *aszatgyanta* [asat resin]; *bűzös aszat* [stinking asat].

Plant species:	<i>Ferula foetida</i> (Bunge) Regel; <i>Ferula assa-foetida L.</i> ; et al.
Family:	<i>Apiaceae/Umbelliferae</i>
Plant part used:	gum-resin (latex)
Region of origin:	Iran; W. and C. Asia
Cultivated in:	Iran; Afghanistan
Color:	from pale yellow to brown



(a) gum-resin



(b) powder, colored with turmeric



(c) plant

Figure 4.3 Asafoetida in various forms, and one of its principal sources *Ferula assa-foetida* in the Kyzylkum Desert. Credit: Glorian; Aromatique; Public Domain

Asafoetida is the dried, golden brown oleoresin that forms after cutting the stems of various ferula plants of Central Asia. The material itself is a waxy gum-resin, and it is sold either in gum or powdered form. Asafoetida is an extremely pungent, strong-smelling substance; it is described having a “garlic-like” and “sulphurous odor” that is sometimes too strong in itself and must be diluted with other materials (van Wyk, 2014, p. 138). Asafoetida is a drug and spice, and was used for centuries in both Asia and Europe (Leung & Chen, 2019). It is still an integral part of Indian cuisine as an ingredient, while in Europe and East Asia it was mainly utilized as medicine.

Regarding the characteristics and uses of the plant asafoetida, there are parallels with the now extinct giant ferula plant, which is believed to be the source of the lost silphium or laserpitium of antiquity. Silphium was a drug used in ointments of traditional Greek medicine, and a coveted ingredient in Roman cuisine. It was and introduced from Libya in North Africa, and was once a commercially crucial product featured on Roman coins. We now believe that over-harvesting led to its demise (Dalby, 2000; Langenheim, 2003; Leung & Chen, 2019; van Wyk, 2014).

#### 4.3.1 The Botany, Origin, and Cultivation of Asafoetida

Asafoetida is obtained from species of the genus *Ferula* in the *Apiaceae* family, such as *Ferula assa-foetida*, *F. foetida*, and *F. narthex* (Mabberley, 2017). These plants are “robust perennial herbs” that can grow to 2 m high, and as umbelliferous plants surmounted by large yellow flowers (van Wyk, 2014, p. 138). The plants cope well in mountainous and dry, desert-like conditions of Iran (from Yazd to Lar), up to Southern Uzbekistan (Kyzylkum Desert), and the Qandahar region of Afghanistan where they grow wild (Leung & Chen, 2019). Asafoetida is wild-harvested the same way it has been for thousands of years. The plant is cut before flowering, at the base of the stalk just above the root, and left exposed. The exudate is then collected once it solidifies, and this process is repeated again and again for up to three months, until no more liquid can be tapped (van Wyk, 2014, p. 138).

#### 4.3.2 The History of Asafoetida

A fantastic chapter on the history of asafoetida already exists “The Itinerary of Hing/Awei/Asafetida across Eurasia, 400–1800” by Leung and Chen (2019)

#### 4.3.3 The Names of Asafoetida

##### English

**Etymology 6.** English *asafoetida*, a. 1398 < Medieval Latin *asafoetida* [stinking asa] <<sup>?</sup> from Persian *āzā* ‘mastic’, in a Lanized form, *asa* + Latin *foetid* ‘ill-smelling, stinking’, (feminine of *fœtidus*)<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. asafoetida); Laufer (1919, p. 353); Steingass (1892, p. 42)

*Asafoetida* (also spelled *asafetida*) is a term directly from Medieval Latin that found its way into the English lexicon via the early modern European medicinal and botanical literature. Often seen with archaic spellings, such as “*assafetida*”, the name is made up of the Latinized version of Persian ازا/*āza/āzā* ‘mastic’<sup>3435</sup>, and Latin *foetida*, feminine of *foetidus* ‘stinking, ill-smelling, fetid’<sup>36</sup>.

The first detailed discussion about asafoetida’s name comes from (Laufer, 1919, pp. 353–362)’s *Sino-Iranica*, where he vehemently opposes the theories of Persian origin regarding *aza*, stating that its purported meaning, ‘mastic’ is “a product entirely different from what we understand by asafoetida”, and prefers the inferred theory first proposed by Garcia da Orta (1563/1913, p. 41) that *asa* — “mutilated by the druggists of the middle ages” — somehow derives from the *laser* or Pliny’s *laserpitium* (a synonym for silphium, an important spice, medicine, and aphrodisiac used in antiquity just mentioned above). None of the two explanations are supported with documentary evidence,

<sup>34</sup>Mastic, also known as *tears of Chios* is, a resin exuded from the trees *Pistacia lentiscus*. The dried, yellowish and translucent brittle pieces of resin resemble teardrops, and turn white when chewed, behaving like nature’s (initially bitter) chewing gum. It is traditionally produced on the island of Chios, Greece.

<sup>35</sup>Steingass, 1892, p. 42, [https://dsal.uchicago.edu/cgi-bin/app/steingass\\_query.py?page=42](https://dsal.uchicago.edu/cgi-bin/app/steingass_query.py?page=42).

<sup>36</sup>OUP, n.d., asafoetida.

and he is right in that “in no oriental language is there a word of the type *asa* or *aza* [...]. I am not sure why did Laufer immediately dismiss the connection between mastic and asafoetida; both are obtained from the dried oleo-resin of Western and Central Asian plants, and even his own descriptions of mastic and its uses are very similar to that of asafoetida (Laufer, 1919, p. 252). His reports from a 1610 Chinese source, using the transcribed Arabic name *mastaki* say that it is produced in Turkestan, used “as *jiao*” (Sichuan pepper), and that its odor is very strong, and beneficial for digestion. Laufer, an expert in East Asian languages expects *aza* to come up in other oriental languages, but it seems to me that the problem of *aza* starts with Latin and therefore should be searched within the medieval European scientific literature. If *aza*, a Persian term for a dried resinous substance (i.e. mastic) loaned by scribes of Latin existed, why does *asa foetida*, literally ‘stinking mastic’ for a foul smelling dried resinous gum sound so impossible? In fact, one of the Arabic names for asafoetida literally translates to ‘the mastic of the giant ferula’; but here ‘mastic’ is likely to simply mean ‘gum’.

Asafoetida was first attested in Middle English, indicating its arrival in Europe. Sometime before 1398, we can read: “Some stynkyng þinges beþ ydoon in medycyne, as..brymston and asa fetida.”<sup>37</sup>. This illustrious entrance of asafoetida immediately points out its stench, and to be paired here with brimstone — once a synonym for sulfur, now a term chiefly used in a Biblical context in the description of hell (cf. “fire and brimstone”) — is an apt premonition for the nickname *devil’s dung*. It is also worth noting that in English, the word first referred to the material, with the plant producing asafoetida sense only secondary; this is understandable, because no European have seen the ferula plants until the 17<sup>th</sup> century, and the origins of the drug were obscure.

**Etymology 7.** English *hing* ‘asafoetida’, 1599 < Hindi हिंग *hīṅg* ‘asafoetida’ < Sanskrit हिङ्गु *hiṅgu* ‘asafoetida’; cf. cognates Sogdian ’ynkw < Proto-Iranian\* *\*aṅgu-ja-*tu- ‘resin-gum’; cf. Tokharian B, Khotanese<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *hing*); OUP (n.d., s.v. *hing*); Gharib (1995, p. 87); Adams (2013, p. 7)

India was always a big importer and consumer of asafoetida, and also played a role in exporting it to other part of the world. Bombay served as the key port in the 19<sup>th</sup> century, where the stinking gum would change hands (sometimes after a bit of manipulation and adulteration). Contrary to China and Europe, Indians also developed an affinity to use it in their cooking. Thus, when the British came in contact with asafoetida in India, they adopted the local name: *hing*<sup>38</sup>. *Hing* comes from Hindi हिंग *hīṅg*, through Sauraseni Prakrit *hiṅgu* from Sanskrit हिङ्गु *hiṅgu*<sup>39</sup>. The Sanskrit term is believed to have derived from an Iranian source reconstructed as Proto-Iranian *\*aṅgu-ja-*tu- where *ja-*<sup>40</sup> is ‘gum’ (Modern Persian زد *zad* ‘gum’) and other derivates are Tocharian B *ankwas(t)*, Khotanese *amguṣḍā*, and Sogdian *\*anguzat* (Adams, 2013, p. 7; Gharib, 1995, p. 87; R. L. Turner, 1962–1966, p. 281), also various Classical Persian forms, both inherited, e.g. انجان *angudān*, آنگزه *ānghuzah* and borrowed,

<sup>37</sup>OUP, n.d., asafoetida.

<sup>38</sup>see Yule et al., 1903, p. 418,

<sup>39</sup>AHD, 2022, *hing*.

<sup>40</sup>*Proto-Indo-European (PIE)* *\*gʷʰétu* ‘resin, gum’

e.g. انجاد *anguzad* from Parthian (Tremblay, 2005, p. 438).

In English, *hing* is first attested in Hakluyt's *Principle Navigations* (new ed.): "One hundred and fourescore boates laden with Salt, Opium, Hinge, Lead, Carpets [etc.]."<sup>41</sup>, and soon identified as a substance identical to asafoetida, as an example from 1662 shows: "The Hingh, which our Drugsters and Apothecaries call Assa foetida, comes for the most part from Persia."<sup>42</sup>

Among its many vernacular names in European languages, such as *devil's dung* in English, there is often a hint to the devil, possibly due to the connection between the smell of sulfur and hell in the Biblical tradition ("fire and brimstone"). The name *devil's dung* in its various glosses is popular among European languages (e.g. German *Teufelsdreck* lit. 'devil's filth', Finnish *pirunpihka* lit. 'devil's resin', or Turkish *şeytanboku* lit. 'Satan's shit', which shows the strong aversion this material induces in European people, and why it never gained popularity in cookery. Other vernacular names in English include *devil's dung*, *asant*, *stinking gum* (cf. George, 2012). On the far opposite, the phrase "food of the gods" on Wikipedia actually links to asafoetida, because in an Indian context asafoetida was and is a desirable ingredient. Garcia da Orta, a Portuguese Jewish herbalist and ethnobotanist pioneer who spent much time on Goa wrote in the 16<sup>th</sup> century:

"Well, you must know that the thing most used throughout India, and in all parts of it, is that Assa-fetida, as well for medicine as in cookery. A great quantity is used, for every Gentio who is able to get the means of buying it will buy it to flavour his food." (Garcia da Orta, 1563/1913, p. 44)

But as a European, he also notes on the next page: "The nastiest smell in the world for me is Assa-fetida".

#	Species	Name	Source
1	<i>Ferula assa-foetida</i> et al.	devil's dung	van Wyk (2014)
2	<i>Ferula assa-foetida</i> et al.	hing	van Wyk (2014)
3	<i>Ferula assa-foetida</i> et al.	stinking gum	Peter (2012)
4	<i>Ferula spp.</i>	asafoetida	van Wyk (2014)

Table 4.9 Various names for asafoetida in English.

## Arabic

**Etymology 8.** Arabic حلتیت *hiltīt* 'asafoetida resin'; cf. cognates Hebrew חַלְתִּית *hiltit* < Aramaic חַלְתִּיתא/סָלָה *heltītā* 'id.'<sup>a</sup>

<sup>a</sup>Fraenkel (1886, p. 140); Löw (1881, p. 36) and Löw (1924, vol. 3, p. 452-455)

<sup>41</sup>Hakluyt, 1589, <http://www.perseus.tufts.edu/hopper/searchresults?target=en&inContent=true&q=hinge&doc=Perseus%3Atext%3A1999.03.0070>.

<sup>42</sup>OUP, n.d., hing, <https://www.oed.com/view/Entry/87092>.

Arabic terms now make a difference between the material and the plant; asafoetida as a spice/medicine hiltit is called حلتیت *hiltīt*, while the plant is called انجدان *anjudān*. The word *hiltīt* comes from Aramaic ↗*חַלְתִּית* *heltītā*, and also exists in a Hebrew cognate as חַלְתִּית *hiltīt* (Fraenkel, 1886, p. 140; Löw, 1881, p. 36; Löw, 1924, Vol. 3, p. 452–455). It is first attested in Sibawayhi's (ca. 760–796, a Persian native) *al-Kitab* [The Book], which is the earliest work on Arabic grammar and linguistics. *Hiltīt* appears in the first Arabic dictionary, the *Kitāb Al-'Ayn* [The Source] compiled by al-Farāhīdī (ca. 786), simply sending the reader to *al-anjudhān* 'asafoetida', which could mean that this word was more widely known than *hiltīt* at the time. *Anjudān* is first mentioned in its earlier form *anjudhān* in the *Kitab Al-'ayn*, which also tells us that the source (*uṣūl*) of *anjudān* is a plant called *maḥrūt*, which also appears in the poetry of Imru' l-Qays, the most eloquent poet of pre-Islamic Arabia<sup>43</sup>. Arabic *anjudān* is a loanword from Persian, likely borrowed before the 6<sup>th</sup> century and it comes from the same Proto-Iranian \**aŋgu-žatu-* as Sanskrit, and later English *hing*.

**Etymology 9.** Arabic انجدان *anjudān* < Persian انگدان *angudān* < Proto-Iranian\* \**aŋgu-žatu-* 'resin-gum'; cf. Tokharian B, Khotanese<sup>a</sup>

<sup>a</sup>Lane (1863, pp. 79–80); Steingass (1892, pp. 114, 106); Adams (2013, p. 7)

#	Species	Name	Tr.	Gloss	Source
1	<i>Ferula spp.</i>	أبو كبير	<i>abū kabīr</i>	big father	Wehr (1976)
2	<i>Ferula spp.</i>	أنجدان	<i>anjudān</i>	phonetic	Baalbaki (1995)
3	<i>Ferula spp.</i>	صمغ الأجدان	<i>samgh al-anjudān</i>	gum of anjudan	Baalbaki (1995)
4	<i>Ferula spp.</i>	صمغ راتيناجي	<i>samgh rātīnājī</i>	rātīnājī gum	Baalbaki (1995)
5	<i>Ferula spp.</i>	حلتیت	<i>hiltīt</i>	phonetic	Wehr (1976)

Table 4.10 Various names for asafoetida in Arabic.

### Chinese

**Etymology 10.** Mandarin Chinese 阿魏 *āwèi* MC MC /?a ɿuiH/ 'asafoetida' < Tokharian B *ankwaṣ(t)* 'asafoetida' < Sogdian \**angužat* 'asafoetida' < Proto-Iranian\* \**aŋgu-žatu-* 'resin-gum'<sup>a</sup>

<sup>a</sup>Leung and Chen (2019); Laufer (1919, p. 353); Tremblay (2005, p. 438)

As for Chinese, 阿魏 *āwèi* is the term that gained much prevalence in the 7<sup>th</sup> century (Leung & Chen, 2019). It seems likely that it was Kuchean traders from around the Tarim basin who first brought asafoetida to Chang'an, the Tang capital on the eastern terminus of the Silk Road. The consensus now among both Sinologists and experts on the languages of the Silk Road is that *āwèi* is a loan from Tocharian B *ankwaṣ(t)*, originating from the same Proto-Iranian etymon as two of the above Arabic

<sup>43</sup>see Ibn Manzūr, 1290/1979, p. 819.

and English examples (Laufer, 1919, p. 353; Baxter & Sagart, 2014, p. 121).

**Etymology 11.** Mandarin Chinese 興蕖/興渠/興瞿 *xīngqú* MC /hirj giʌ/ ‘asafoetida’, phonetic transcription < Sanskrit हिङ्गु *hingu* ‘asafoetida’ < Proto-Iranian\* \**angu-jatu-* ‘resin-gum’; cf. Tokharian B, Khotanese<sup>a</sup>

<sup>a</sup>Leung and Chen (2019); Laufer (1919, p. 353); Adams (2013, p. 7)

But, there was an earlier name for asafoetida in Chinese: 興蕖/瞿/渠 *xīngqu*, doublet of 形虞 *xīngyu*. These are direct transcriptions of the Sanskrit *hingu* we mentioned above, and were attested in 5<sup>th</sup>-century Buddhist sutras (Leung & Chen, 2019). It is also worth mentioning that in this case, the Chinese monks most likely had no idea what exactly *xīngqu* is, just that it some plant resin, and as such, it exemplifies a rare case when the word precedes the thing it refers to. In the *Bencao Gangmu* (BCGM), besides the names above, other synonyms can also be found. These are 阿虞 *ayü*, from the transcription of Persian *anguz(a)d*, and 哈昔尼 *haxini*, the transcription of Ghazni, a city in Afghanistan where asafoetida was exported from. In the *Taiping Guangji* (TPGJ) (citing the *Youyang Zazu* (YYZZ)), it is said that *awei* comes from the country of 伽闍那 MC /gazana/, which is likely a rendering of Ghazna, a variant of Ghazni.<sup>44</sup>

From all the names, the most successful was unquestionably *awei*, it enjoyed popularity for centuries, and further propagated into Sinoxenic words of Japanese 阿魏 *agi*, Korean 阿魏 *아위* *awi*, and Vietnamese *ngui* (Leung & Chen, 2019).

I highly recommend both Laufer (1919)’s *Sino-Iranica*, and Leung and Chen (2019)’s “The Itinerary of Hing/Awei/Asafetida across Eurasia, 400–1800” for those who are interested in asafoetida’s journey and its names.

Say something about  
Middle Chinese  
phonology and  
Zhengzhang,  
Baxter-Sagart?

#	Species	Name	Tr.	Gloss	Source
1	<i>Ferula spp.</i>	阿虞	<i>ayü</i>		Leung and Chen (2019)
2	<i>Ferula spp.</i>	哈昔尼	<i>hāxīnǐ</i>		Leung and Chen (2019)
3	<i>Ferula spp.</i>	黑黎提提	<i>hēilítítí</i>		Rossabi (2013)
4	<i>Ferula spp.</i>	形虞	<i>xíngyú</i>		Leung and Chen (2019)
5	<i>Ferula spp.</i>	興蕖/興渠/興瞿	<i>xīngqú</i>		Leung and Chen (2019)
6	<i>Ferula spp.</i>	阿魏	<i>āwèi</i>		Leung and Chen (2019)

Table 4.11 Various names for asafoetida in Chinese.

## Summary

And so, what we see here is that all three languages under scrutiny — English, Arabic, and Chinese — have at least one word that goes back to the same Proto-Iranian etymon, from the geographic source of the material it signifies and from the native region of the plant it is harvested from. This is not a

<sup>44</sup> CTP — <https://ctext.org/taiping-guangji/414/awei?searchu=%E9%98%BF%E9%AD%8F&searchmode=showall#result>

surprise, rather evidence showing that the words do follow the material, even with twists and turns, and that tracing their journey correlates with the trade routes thus marking the contact zones where information about the material was transmitted.

#	Language	Term	Gloss	Loan	Source
1	English	<i>devil's dung</i>		no	OUP (n.d.)
2	English	<i>hing</i>		yes	OUP (n.d.)
3	English	<i>asafoetida</i>		yes	OUP (n.d.)
1	Arabic	<i>abū kabīr</i>	big father	no	Wehr (1976)
2	Arabic	<i>anjudān</i>	phonetic	yes	Baalbaki (1995)
3	Arabic	<i>samgh al-anjudān</i>	gum of anjudan	no	Baalbaki (1995)
4	Arabic	<i>samgh rātīnājī</i>	rātīnājī gum	no	Baalbaki (1995)
5	Arabic	<i>hiltīt</i>	phonetic	yes	Wehr (1976)
1	Chinese	<i>āwèi</i>		yes	MDBG (n.d.)

Table 4.12 Conventionalized names for asafoetida in English, Arabic, and Chinese, found in dictionaries.

## Etymological stages of names for asafoetida

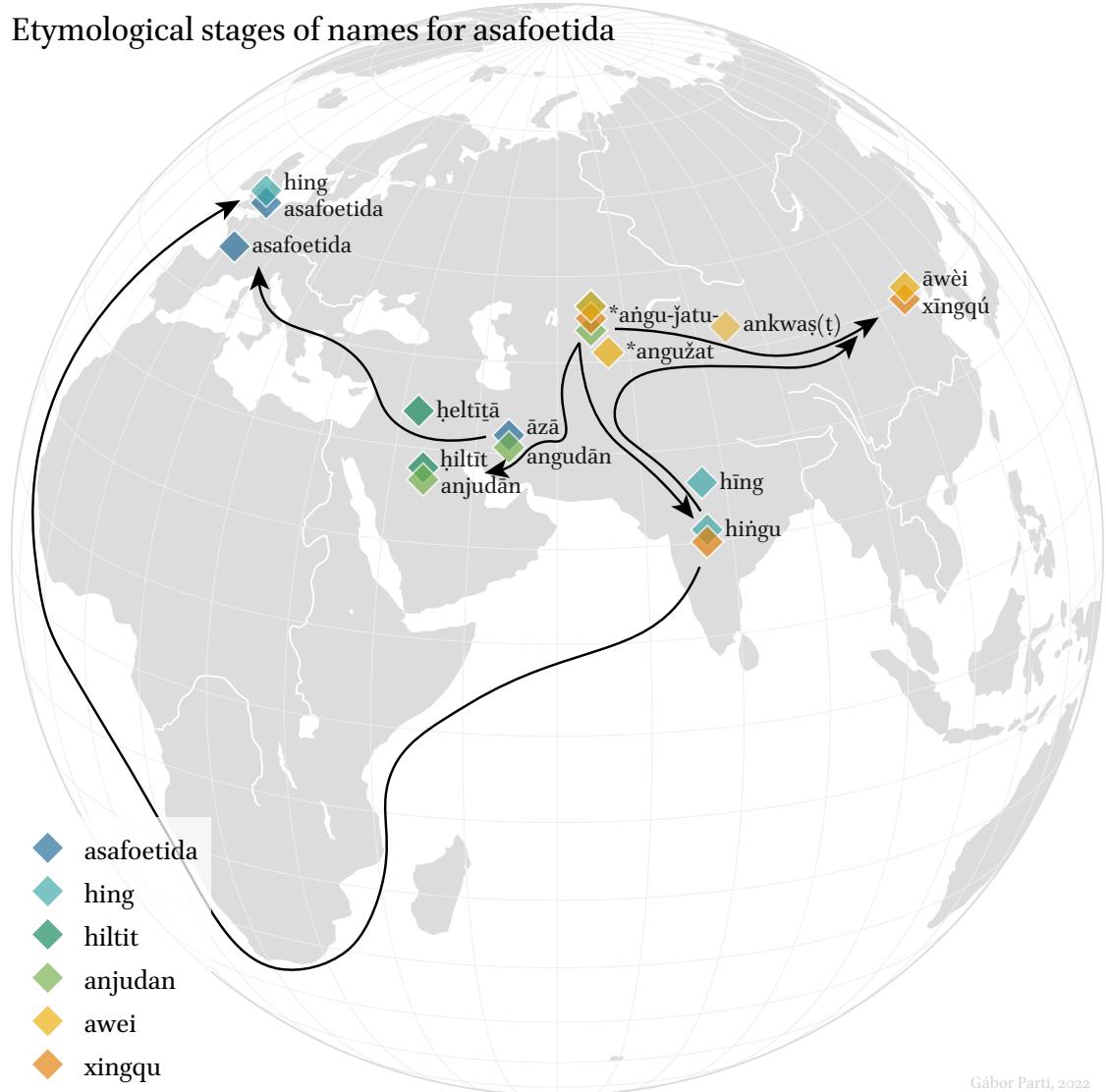


Figure 4.4 Etymological stages in the progression of prototypical names of asafoetida.

## 4.4 Black Pepper

### 4. PEPPER

POWO

English: *pepper*; *black pepper*. Arabic: فلفل *filfil, fulful*. Chinese: 胡椒 *hújiāo* [barbarian-pepper]; 黑胡椒 *hēihújiāo* [black-barbarian-pepper]. Hungarian: *bors; fekete bors* [black pepper].

Plant species:	<i>Piper nigrum</i> L.
Family:	<i>Piperaceae</i>
Plant part used:	fruit
Region of origin:	Malabar coast (South India)
Cultivated in:	Vietnam; Brazil; Indonesia; India; Sri Lanka; etc.
Color:	black; white; green

**Etymology 12.** Arabic فلفل *filfil, fulful* ‘pepper’ < Persian پلپل *pilpil* ‘id.’; cf. cognates Old Armenian պղպել *p̥pet*, Old Georgian პილპილი *pilpili* <<sup>?</sup> Middle Indo-Aryan\* ‘long pepper’ < Sanskrit पिप्पलि *pippali* ‘long pepper *Piper longum* (plant and berry); a berry’<sup>a</sup>

<sup>a</sup>Lane (1863, p. 2434); Sultan Qaboos University (1985)

**Etymology 13.** Mandarin Chinese 胡椒 *hújiāo* ‘black pepper’ [barbarian-pepper], from 胡 *hú* ‘Western barbarians, steppe nomads’ + 椒 *jiāo* ‘pepper, spice’ (*jiāo* was the prototype spice in China, originally referring to the local “Sichuan pepper” which is now called 花椒 *huājiāo* [flower-pepper]), [Northern and Southern] 420-445<sup>a</sup>

<sup>a</sup>Schuessler (2007)

Black pepper is the dried fruit (drupe)<sup>45</sup> of the species *Piper nigrum*. Pepper fruits are often called peppercorns, and they come in black, white, green, and even red. However, black pepper, white pepper, green and “true” red peppercorns are not different varieties, they are the fruits of the same plant. Their difference merely lies in the harvesting and drying process. All of them have a unique, pungent taste and a fresh, spicy aroma that they release when being crushed or ground.

Black pepper is the most important, most popular, and most consumed spice in the world (Maberley, 2017, p. 721). Valued for its pungency and flavor, pepper has been used since ancient times in traditional medicine and gastronomy from East to West, and it is the most influential spice that shaped human history. It is found and used virtually everywhere around the globe (Hill, 2004, p. 253), and most of us are familiar with the biting sensation it causes on the tongue and in the nose. Black pepper

<sup>45</sup>Botanical term: A drupe refers to a type of fleshy fruit with thin skin and a single, central pit containing the seed, also known as a “stone-fruit” (e.g.: plum, cherry, peach, nutmeg, olive, mango). It is a term used to denote the contrast to a botanical “berry”, which contains many seeds (e.g.: blueberry, grape).

was one of the first aromatic substances used medicinally in India, and one of the first products of global commerce to be traded, alongside long pepper, and ginger. It was transplanted to other tropical regions of Asia early on, and cultivated extensively. Black pepper's early diffusion is remarkably interesting, it is the prototype spice for many of us. Also referred to simply as *pepper* from here on, it was among the first oriental spices to reach the Occident (Peter, 2012, vol. 1, p. 86). Pepper was known to the ancient Egyptians, Greeks, and Romans in the West, and have changed medieval Europe. It was even used as currency in small amounts. Today it accounts for more than a third of all spices traded in the world, making it the most traded spice as well (Ravindran, 2017b). Its importance is well demonstrated by the many books and monographs about its history (see Shaffer, 2013; Wernick, 2014), agronomy (see Nair, 2020; Ravindran, 2000), and appeal (see Barth, 2019; De Kerros, 2016).

Interestingly, black pepper is the only spice to be traded on the stock market as a commodity, the International Pepper Exchange was established in 1997 in Kochi, India. One result of this is cargo containers of black pepper sitting in warehouses waiting to change hands, leading to a loss in nutritional value and flavour and thus an unnecessary underwhelming experience for future consumers (Madagascar Spices Company, 2022). Spice merchants often urge serious customers to buy directly from the producer cutting the middlemen, citing the above inconvenience of product waiting in transit and retail.

## Uses

Black pepper had and has various uses in multiple areas. Nowadays, we mainly consider its importance in the culinary arts — from seasoning food in the kitchen to the dining table — but it is extensively used in the food industry as well for flavouring and preserving processed foods (Peter, 2012, vol. 1, p. 86). Often called the “king of spices”, black pepper is so ubiquitous and well known in cooking that it is essentially pointless to list cuisines and dishes that feature it. It is present in practically all savoury dishes, sauces, marinades, and pickles. It is used whole, crushed, or ground, and its role in Western gastronomy is well marked by the fact that virtually all restaurant table host a pair of salt and pepper mills or shakers. On the other hand, white pepper is a key ingredient in French and Chinese cuisine, where it is much more popular than black pepper, while green pepper is popular in Thai and South Indian cooking. But besides just a seasoning, pepper also has roles in perfumery and beauty care, not to mention its use as a home remedy (Ravindran, 2000, p. 467). In fact, as it is true for most spices, pepper in the past was considered primarily a medicine. Black pepper is well known in the traditional herbal systems, whether Ancient Greek, Ayurvedic, or Traditional Chinese Medicine, as well as contemporary pharmacology and phytotherapy (a modern name for chemistry-assisted herbalism). Reviews and updates on the research of *Piper nigrum*, its active components, and their effects on human physiology are being published at a steady pace (see Butt et al., 2013; Haq et al., 2021; Meghwal & Goswami, 2013; Srinivasan, 2007). Recent scientific research shows that piperine displays numerous pharmacological effects, such as antimicrobial and antioxidant (Haq et al., 2021). It is therefore not surprising that health benefits of black pepper have been recorded in pharmacopoeias since ancient times, and that it has been used for the treating of various illnesses: ranging from

stomach pains and digestive problems to fever, cold, and even food poisoning (Quattrocchi, 2014, p. 2952).

**Note 4.4.1.** Throughout this dissertation — unless stated otherwise — the term *pepper* alone always denotes the pepper(s) of *Piper nigrum*, of the genus *Piper*, from the pepper family (*Piperaceae*) or, originating in India (i.e. black pepper, white pepper, etc.). This is to make an arbitrary distinction with the various kinds of hot chile, or chili peppers of the genus *Capsicum* in the nightshade family (*Solanaceae*), native to the Americas. A partial objective of this dissertation is to untangle the messy nomenclature around these plant and spice names, which is evident if we take into account all the different items we can refer to with the words *pepper* in English, *jiāo* in Chinese, and *filfil* in Arabic; a situation true to many other languages as well.

### False peppers

There are other aromatic, spice yielding plants (other kinds of peppers, if you like) in the *Piperaceae* family, constituting to different species, such as cubeb, tailed peppers, or Java peppers (*Piper cubeba*), (Indian) long peppers (*P. longum*; *P. retrofactum*), “piper chilies” (*P. chaba*), Ashanti/Benin pepper (*P. guineense*), etc., and they will be referred to using these common names throughout. Cubeb, and long pepper especially, were more common in ancient times but virtually disappeared from the global spice trade in the modern age. Other, less common spices unrelated to the *Piper* genus, such as pink peppercorns from South America (*Schinus molle*; *S. terebinthifolia*), Sichuan peppers from East Asia (*Zanthoxylum spp.*), and alligator peppers (*Aframomum danielli*) from Africa are sometimes referred to as “false peppers”. These will always be referred to with their usual full vernacular names to avoid confusion.

Do other peppers at the end of this

#### 4.4.1 The Botany of Black Pepper

Pepper is native to the Malabar region in South India where the Western Ghats, a mountain range parallel to the coastline, traps the monsoon rains. This results in the most humid region in India, making it one of the plant biodiversity hot-spots on Earth (Ravindran, 2000, p. 1). Often called the “king of spices”, pepper originates here in the evergreen tropical forests of Kerala, which is the origin and centre of plant diversity for the “queen of spices” as well: cardamom (Ravindran, 2000, p. 1). Wild populations of pepper and closely related species grow in the moist, shady forests, up to 1200 m above sea level (Ravindran, 2017b). Pepper is cultivated for thousands of years in these areas, and once South India was the only place that produced it. Due to the human desire for this valuable spice, the crop was slowly transplanted from here to other tropical zones, mainly in the Asia-Pacific: Sri Lanka, Malaysia, Indonesia; but also to the West as far as Madagascar and Brazil. Today it is cultivated in 26 countries (Ravindran, 2000). The top five producers in 2020 were Vietnam, Brazil, Indonesia, India, and Sri

Lanka.<sup>46</sup> Pepper grows on a perennial vine, blooming a cluster of small flowers on hanging spikes that bring young, round fruits that are first green, turning to bright red as they ripen; resembling berries. Pepper plants in their native habitats spread on the forest floor, or climb over rocks, shrubs, and trees. Pepper prefers the hot tropics with high humidity, and optimal temperatures of around 20-30°C. Open cultivation is possible in places where rainfall is well distributed (e.g.: Thailand, Vietnam, Malaysia), whereas in India shade is required because of the 6 months of drought between monsoon seasons (Ravindran, 2017b). Wild pepper species are dioecious<sup>47</sup>, having male and female individuals, while the domesticated pepper populations became monoecious:<sup>48</sup> one plant is both male and female. This is probably due to thousands of years of selective multiplication and it leads to greater quantities in production: bisexual flowers mean high fruit yields (Ravindran, 2000, p. 38). Pepper lianes are propagated from cuttings, and being climbers, they are usually grown around trees for live support, or with the use artificial poles (van Wyk, 2014, p. 216).

When it comes to harvesting, the techniques are different depending on the intended end product. In the case of black pepper, the near-ripe (still green) fruits are hand-picked and sun-dried in the course of several days up to two weeks. Oxidation leads to the darkening of the pericarp<sup>49</sup> (the outside skin and flesh of the fruit) to a hue ranging from deep brown to jet black, while also attaining the signature wrinkles and dimples (Hill, 2004, p. 254). The drying process can be sped up by boiling the pepper fruits in hot water for a short time. Chemical changes induced by the heat hasten the subsequent oxidation process, which causes the outer layer to gradually shrivel and blacken while getting dried (van Wyk, 2014, p. 216). White pepper is obtained by letting moisture and micro-organism dissolve the cellular tissue of the fully ripe red fruits, basically letting them rot in a technique called retting<sup>50</sup>. The fruits' decomposed skin and flesh are easily removed by hand or machine after soaking and gentle washing, and the remaining pale seed is then dried on the sun, or bleached (van Wyk, 2014, p. 216). Green peppercorns are a result of traditional pickling, or in modern times rapid freeze-drying of the unripe fruits as a way to prevent fermentation. This process results in a product with a light weight and seemingly higher price. Occasionally the ripe, red fruits are sold as well to be used fresh, but the "true" red peppercorns – as Hill (2004) calls them – are rare and mostly found in producing areas: they lose their vigour within days of harvest and so must be used fresh unless preserved in vinegar or brine. As it is a hallmark of spices, the two varieties that are dried (black pepper and white pepper) are much more known worldwide, their dry quality allows them to be transported on longer journeys. If we think of white pepper as de facto decorticated black pepper, we would rightly guess that the flavour of white pepper is weaker than black pepper, as the outer peel of black pepper contains much of the spicy compounds responsible for the heat. Green peppercorns have an even milder taste and a much shorter shelf-life. Indigenous to the Malabar coast, a well known and popular variant is the Malabar

<sup>46</sup>In order of production quantity, from highest to lowest. All production data is from FAOSTAT (Food and agriculture data of the Statistics Division, Food and Agriculture Organization of the United Nations): <https://www.fao.org/faostat/en/#home>; license: CC BY-NC-SA 3.0 IGO.

<sup>47</sup>Bot.: the male and female reproductive organs are found in separate individuals.

<sup>48</sup>Bot.: having both the male and female reproductive organs in the same individual; hermaphrodite.

<sup>49</sup>Bot.: In fruit anatomy, pericarp is the collective name for the outer layers around the seed of a fleshy fruit or drupe: the endocarp (innermost covering of the seed; the pit), the mesocarp (flesh), and the exocarp (skin).

<sup>50</sup>

pepper or Malabar black, a commodity sought-after by traders since Roman times (De Romanis, 2020). Another famous name on the market is the Tellicherry black, which according to spice traders is not a regional designation, but rather a requirement of size. If a peppercorn is larger than 4.25 mm pinhead, it is classified as Tellicherry (Eirinberg, 2021). Other famous and/or protected pepper variants with Geographical Indication (GI) certificates are Kampot pepper from Cambodia, the Muntok white and Sarawak white from Indonesia and Malaysia respectively, and the Penja pepper from Cameroon. A relatively recent publication by pepper grower and merchant De Kerros (2016) accompanied by remarkable photographs aims to present all the dozens of pepper varieties around the world that are available to those with an adventurous taste. Pepper owes its punch to the alkaloid piperine, while the wrinkly pericarp supplies the complex spicy aroma and flavour thanks to a high number of chemical compounds in the form of volatile oils (Ravindran, 2000, p. 467). The most powerful one of which is rotundone, a highly potent compound also found in Shiraz wines (C. Wood et al., 2008). For more on details on the botany, chemistry, cultivation, agronomy, and other aspects of black pepper, please refer to Nair (2011), Parthasarathy et al. (2008), and Ravindran (2000).

#### 4.4.2 The History of Black Pepper

The history of pepper accompanies the history of mankind from the earliest times of contact and exchange between civilizations. The story of pepper is global and must travel to Ancient Egypt to begin. According to a popular anecdote in books and articles about pepper, peppercorns were used in the embalming process of mummies (Ravindran, 2000), and they were found in the nostrils of Ramses II (J. Turner, 2004, p. 168). I have read this on many occasions, and I have spent way too much time to find out if this is true or not. In short, there is no definitive answer, but that the alleged peppercorns were only “seen” through X-ray, and that the original reports are dubious at best, as reported by Bucaille (1990, p. 206). Ramses II died in 1213 BC, and even if these specific are problematic, it is said that peppercorns and cinnamon were imported “from Southeast Asia and the East Indies” and thus available to wealthy citizens of Egypt as early as New Kingdom era (16<sup>th</sup> c. BC–11<sup>th</sup> c. BC) (Salima, 2001/2005, p. 394).

Pāṇini, the famous Sanskrit grammarian (ca. 4–6<sup>th</sup> c. BC) recorded the use of pepper in spiced wine, and pepper appears in early Indian medical texts of Suśruta as well (Ravindran, 2000). In the 4<sup>th</sup> century, Theophrastus recorded and described both black pepper and long pepper, and by the 1<sup>st</sup> century AD its source was accurately described by Pliny the Elder; stating that black pepper is from south, long pepper is from north India. Rome conquered Egypt in 30 BC, and with that the pepper trade as well, which was a key enterprise in Rome’s later financial success. From here onwards, the history of pepper within the Indo-Roman trade is well studied and documented, for further details please see De Romanis (2020), Miller (1969), and Sidebotham (2011).

During the late Middle Ages, pepper also brought great riches to Europe, the former wealth of Venice was due to its trade. After the crusades, European sea powers tried to get ahold on the monopoly of the spice trade, and Vasco de Gama’s landing near Calicut in 1498 in the Venetian, Portuguese, Spanish, Dutch, and English vied with each other for centuries up to the modern era. Pepper reached

Southeast Asia probably during the t The story of pepper is very well explored in the Age of Exploration as well, there is no need for me to delve into it deeper. I recommend Dalby (2000), Shaffer (2013), and J. Turner (2004) for those interested.

#### 4.4.3 The Names of Black Pepper

##### English

**Etymology 14.** English *pepper* <? West Germanic\* \**pirpor* ‘id.’ < Latin *piper* ‘black pepper, long pepper’ < Ancient Greek πέπερι *péperi* ‘id.’ < Middle Indo-Aryan\* पिप्परी *pippari* ‘long pepper’ < Sanskrit पिप्पलि *pippali* ‘long pepper *Piper longum* (plant and berry); a berry’<sup>a</sup>

<sup>a</sup>Bosworth and Toller (1898/2014), R. E. Lewis et al. (1952–2001), and OUP (n.d.); Harper (n.d.-b); C. T. Lewis and Short (1879); Liddell and Scott (1843/1940); Sheth (1923–1928, p. 599); Monier-Williams (1899, p. 626)

The word *pepper* arrived to modern English via Middle English *peper* and Old English *pirpor*, *piper*, from an early, Proto-West Germanic borrowing of Latin *piper*.<sup>51</sup> The Latin word comes from Greek πέπερι *péperi*, a word “of oriental origin”<sup>52</sup> or “Indic origin”.<sup>53</sup> The source is most probably from a Middle Indo-Aryan language, akin to Prakrit *pippari*<sup>54</sup>, probably via Pahlavi (Middle Persian)<sup>55</sup>, ultimately from Sanskrit *pippali* or *pippali*.<sup>56</sup>

As for the meaning, we know that in Latin the word *piper* was used for both black pepper and long pepper, and this is true for the Greek word as well. As long pepper gradually disappeared and was completely replaced by black pepper in the Middle Ages, so vaned the that sense of the word. The original word’s meaning however was exclusively long pepper, *pippali* did not refer to black pepper. In Monier-Williams (1899), *pippali* is ‘long pepper’, while *pippali* refers to ‘a berry; *Piper longum* (both plant and berry)’. The Sanskrit word for ‘black pepper’ was मरिच *marica*<sup>57</sup>, attested in the *Suśrutasamhitā*, the foundational text of *Ayurveda*. Hindi-Urdu میرچ/چور mirch is the most obvious descendant of the Sanskrit word, and it is similar in meanings to the word *pepper* in English today: by itself it rather refers to chili, while with a distinguishing word, it refers to black pepper (i.e. *kālī mirc* [black pepper]). The use of both black and long pepper in India can be dated to ancient times, as Ayurvedic texts compiled in Sanskrit, such as the *Suśrutasamhitā* testify. Together with ginger (*śringavera* in Sanskrit), these three spices are a base combination in traditional Indian medicine, the name for which is त्रिकटु *trikatū* ‘three spices’.

The ancestors of English speakers adopted the word during the Anglo-Saxon period, before they arrived to England, and so its cognates are found in other West Germanic languages as well.<sup>58</sup>

<sup>51</sup>OUP, n.d., pepper.

<sup>52</sup>Hoad, 2003, pepper.

<sup>53</sup>AHD, 2022, pepper.

<sup>54</sup>Sheth, 1923–1928, p. 599.

<sup>55</sup>Harper, n.d.-b, pepper.

<sup>56</sup>Monier-Williams, 1899, 628.

<sup>57</sup>Monier-Williams, 1899, p. 790.

<sup>58</sup>Cresswell, 2021, pepper.

According to Mabberley (2017, p. 695), the following common names refer to the species *Piper nigrum*: pepper, black pepper, Madagascar pepper, and white pepper. Except the green peppercorns mentioned above, other spices, such as the Sichuan peppers from China, pink peppercorns from Brazil, and Guinea peppers (*Aframomum melegueta*) from tropical West Africa are different, often botanically unrelated species. Only connected by their names and similar uses, looks, or flavour profiles.

The confusion of the two kinds of pepper – most notably of black pepper and chile pepper in English – is also present in Chinese, as well Arabic. Whether in culinary or medicinal spice terminology, or just in vernacular names in daily conversation, the curse of “one word for all peppers” is present in many languages.

#### *Jiao* ‘pepper’ in Chinese

In Chinese, the word for ‘pepper’ is *jiao*. And just like in English, *jiao* now can refer to all the three major sources of pepper. So which pepper is it? Who is the O.G. of peppers?. It would be safe to assume that *jiao* originally referred to indigenous Chinese peppers of various *Zanthoxylum* species, or Sichuan peppers as we today call them. We can find instances of Classical Chinese texts featuring the pepper plant, *jiao* and its branches appear in a poem from the *Book of Poetry*:

椒聊之實、蕃衍盈升。

彼其之子、碩大無朋。

椒聊且、遠條且。

The clusters of the pepper plant,  
Large and luxuriant, would fill a pint.  
That hero there  
Is large and peerless.  
O the pepper plant!  
How its shoots extend!

Translated by James Legge,  
from the *Shijing*,  
c. 8–11<sup>th</sup> century BC.

## 4.5 Caraway

### 5. CARAWAY

POWO

English: caraway. Arabic: كراویا *karāwiyā*. Chinese: 葛縷子 *gělǚzi*. Hungarian: *fűszerekömény* [spice-cumin].

Plant species:	<i>Carum carvi</i> L.
Family:	<i>Apiaceae/Umbelliferae</i>
Plant part used:	fruit
Region of origin:	Mediterranean; Eurasia
Cultivated in:	Denmark, Lebanon, The Netherlands, Poland
Color:	dark brown



(a) a



(b) b

Figure 4.5 Caraway *Carum carvi*.

#	Species	Name	Source
1	<i>Carum carvi</i>	Armenian cumin	OUP (n.d.)
2	<i>Carum carvi</i>	caraway	van Wyk (2014)
3	<i>Carum carvi</i>	caraway-seed	OUP (n.d.)
4	<i>Carum carvi</i>	meridian fennel	Wikipedia (n.d.)
5	<i>Carum carvi</i>	mountain cumin	OUP (n.d.)
6	<i>Carum carvi</i>	Persian cumin	Wikipedia (n.d.)
7	<i>Carum carvi</i>	royal cumin	OUP (n.d.)

Table 4.13 Various names for caraway in English.

#### 4.5.1 The Botany, Origin, and Cultivation of Caraway

#### 4.5.2 The History of Caraway

#### 4.5.3 The Names of Caraway

English

**Etymology 15.** English *caraway* ‘caraway’, ca. 1440 < Medieval Latin *carui* ‘caraway’, or some allied Romanic form, ca. 1080; cf. cognates French *carvi*, Italian *carvi*, Spanish *carvi*; Old Spanish *alcaravea*, *alcarahueya*, Portuguese *alcaravia*, *alcorovia* < Arabic كَرَّاْوِيَّة karāwiyā ‘caraway’, (loaned to some European languages with *al-* definite article, via Andalusian Arabic) < Aramaic כָּרְוַיָּה karwāyā ‘caraway’ < Ancient Greek καρώ karō ‘caraway’, a form of the word *káron*, derived from *káre* ‘head’; -ó form seems Pre-Greek (these forms could not immediately give the Arabic, hence possibly via \*καρψία \*karpsiā a typical plant derivation form of καρώ karō, κάρον káron); cf. cognates Latin *carum*, *careum*<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. caraway); AHD (2022, s.v. caraway); Corriente (2008, p. 74) and TLFi (2012, carvi); Löw (1881, p. 207) and Löw (1924, pp. 437–438); Beekes and van Beek (2010, p. 653) and Sokoloff (2002, p. 599)

caraway English *caraway* comes from a Romance language, such as French *carvi* (attested in 1256)<sup>59</sup> or the equivalent Medieval Latin *carui* (ca. 1080), whence the scientific name.<sup>60</sup> The Romance languages borrowed this word from Arabic كراويا *karāwiyā*, sometimes with the definite article *al-*.<sup>61</sup> (Many Arabic loanwords in Spanish contain the definite article, and many of these borrowings go back to the times of Muslim Spain in al-Andalus, otherwise known as *La Convivencia*; e.g., *almohada* ‘pillow’, *alcatraz* ‘cormoran’, *alcohol* ‘alcohol’, *álgebra* ‘algebra’, etc.)

The Arabic term has Semitic cognates in Aramaic, which is thought to be a loanword from Ancient Greek καρό *karō*, (also etymon of *carrot*), which shows sign of being pre-Greek.<sup>62</sup>. According to Sokoloff (2002), the development of the Greek word follows typical plant name derivation patterns.

<sup>59</sup>Tl/Fi, 2012, carvi.

<sup>60</sup>QUP, n.d., caraway; TLEFi, 2012, caryx.

<sup>61</sup>Corriente, 2008.

<sup>62</sup>Beekes and van Beek, 2010.

The spice ajowan/ajwain *Trachyspermum ammi* also has a synonym from this etymon: *carom*.

Further English vernacular names use *cumin* as the prototype word, and modify it with distinguishing words that indicate the general direction and places where caraway was arriving from: the mountainous regions of Armenia and Persia. *Royal cumin*—attested in 1614—seems to be a semantic translation of Hindustani شاہ جیرا/جیرا shāh jīrā, a Persianate term that is modeled from the Farsi words *shāh* ‘king’ (origin of the word *check* in the “checkmate” of chess) and *jīrā* ‘cumin’, but its use is restricted to South Asia and not Iran. However, in the first record of it in “A short Table expounding all the hard words in this book”, it refers to bishop’s weed, bullwort, or *ammi* (ameos) (*Ammi majus*), which another umbelliferous herb with similar seeds (Markham, 1614).

## Arabic

#	Species	Name	Tr.	Gloss	Source
1	<i>Carum carvi</i>	کراویا	<i>karāwiyā</i>	phonetic	Wehr (1976)

Table 4.14 Various names for caraway in Arabic.

The Arabic word for caraway is كراویا *karāwiyā*, the etymology of which was discussed under Etymology 15, just above. Caraway was known to the Arabs early on, it appears in the *Kitāb al-Ḥāwī fī l-Tibb*, the monumental 10<sup>th</sup>-century medical encyclopedia of al-Razi.

## Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Carum carvi</i>	葛縷子	<i>gēlǚzǐ</i>		Kleeman and Yu (2010)
2	<i>Carum carvi</i>	頁蒿	<i>yèhāo</i>	leaf-wormwood	MDBG (n.d.)
3	<i>Carum carvi</i>	藏茴香	<i>zànghuíxiāng</i>	Tibetan-hui-spice	MDBG (n.d.)

Table 4.15 Various names for caraway in Chinese.

In Chinese, the modern word for caraway is 葛縷子 *geluzi*, but this does not appear in historical documents or corpora. We know from Laufer (1919) and Schafer (1985) that caraway was not distinguished from cumin, and the same words were used for both. In any case, the first record of this word is from a 1822 Japanese book on Western medicinal products, where it appears to be the rendering of the Latin name *carui*, probably informed by English *caraway* (in modern Japanese caraway is キヤラウェイ *kyarawei* and 姫茴香 [princess-fennel-spice]). The kanjis in the 1822 book are annotated with a katakana reading of カリュイ *karyui*. I can not say for certain that Chinese loaned the Japanese term, but until I come across 19<sup>th</sup>-century attested forms in Chinese publications, I will assume so.

**Etymology 16.** Mandarin Chinese 葛縷子 *gělǚzi* ‘caraway’ [bean-hemp-seed?], phono-semantic matching; see *shilo* ‘cumin and caraway’ < Japanese 葛縷子 *karyuushi* ‘caraway’, probably a transcription of Latin *Carui*, or English *caraway + zi* (also キヤラウエイ *kyarawei* and 姫茴香 [princess-fennel-spice]), 1822 <<sup>?</sup> from English *caraway* ‘caraway’, ca. 1440 or from Medieval Latin *carui* ‘caraway’, or some allied Romanic form; cf. cognates French *carvi*, Italian *carvi*, Spanish *carvi* (whence Scots *carvy*, *kervie*), Old Spanish *alcaravea*, *alcarahueya*, Portuguese *alcaravia*, *alcorovia* < Arabic كاراويه *karāwiyā* ‘caraway’, (loaned to some European languages with *al-* definite article; via Andalusian Arabic) < Aramaic ܟܼܾܻܰ/ܟܼܾܻܰ *karwāyā* ‘caraway’ < Ancient Greek καρώ *karō* ‘caraway’, a form of the word *káron*, derived from *káre* ‘head’; -ó form seems Pre-Greek (these forms could not immediately give the Arabic, hence possibly via \*καρυΐα \**karuía* a typical plant derivation form of καρώ *karō*, κάρον *káron*); cf. cognates Latin *carum*, *careum*<sup>a</sup>

<sup>a</sup>Kleeman and Yu (2010, p. 100); OUP (n.d., s.v. *caraway*); AHD (2022, s.v. *caraway*); Corriente (2008, p. 74); Löw (1881, p. 207) and Löw (1924, pp. 437–438); Beekes and van Beek (2010, p. 653) and Sokoloff (2002, p. 599)

## Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>Armenian cumin</i>		no	OUP (n.d.)
2	English	<i>caraway</i>		yes	OUP (n.d.)
3	English	<i>caraway-seed</i>		no	OUP (n.d.)
4	English	<i>mountain cumin</i>		no	OUP (n.d.)
5	English	<i>royal cumin</i>		no	OUP (n.d.)
1	Arabic	<i>karāwiyā</i>	phonetic	yes	Wehr (1976)
1	Chinese	<i>gělǚzi</i>		yes	Kleeman and Yu (2010)
2	Chinese	<i>yèhāo</i>	leaf-wormwood	no	MDBG (n.d.)
3	Chinese	<i>zànghuíxiāng</i>	Tibetan-hui-spice	no	MDBG (n.d.)

Table 4.16 Conventionalized names for caraway in English, Arabic, and Chinese, found in dictionaries.

## 4.6 Cardamom

### 6. CARDAMOM

POWO

English: *cardamom*. Arabic: حَلْ hāl. Chinese: 豆蔻/豆蔻 dòukòu [bean-cardamom]. Hungarian: *kardamom*.

Plant species:	<i>Elettaria cardamomum</i> (L.) Maton (syn. <i>Amomum cardamomum</i> L.)
Family:	<i>Zingiberaceae</i>
Plant part used:	fruit (seed pods, capsules)
Region of origin:	India
Cultivated in:	Guatemala; India; Sri Lanka; Tanzania; Papua New Guinea
Color:	green seed pods, brown seeds

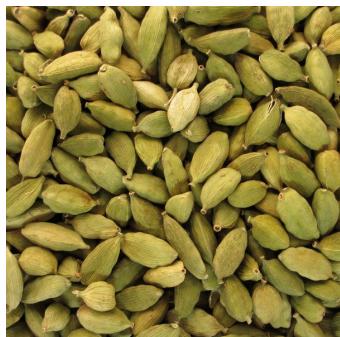


Figure 4.6 Cardamom fruits cured, and powdered (*Elettaria cardamomum*). Credit: Aromatiques.

Cardamoms are the dried, ripe fruits of the cardamom plant *Elettaria cardamomum*. These fruits are sometimes called seeds, but they are in fact the seed pods, “three-valved capsules” (van Wyk, 2014, p. 132), containing several brown-colored small seeds, as it can be seen in figure 4.6. The cardamom of commerce is widely used in Asia as medicine and spice, and is valued for its unique, minty and eucalyptus-like flavor. It is most prevalent in Indian cooking, but also known from the Arabic coffee tradition where it is sometimes added to the beverage. Indian restaurants often place a bowl of cardamoms at the entrance, so customers can take one as a masticatory on their way out, and chew on the refreshing capsules as they were nature’s breath mints. Native to the same region as the mighty black pepper in India, cardamom is sometimes referred to as the “queen of spices” (Ravindran & Madhusoodanan, 2002, p. 1). Cardamom was imported to Europe since the Roman era, and it is still used in meat dishes, sausages, Swedish meatballs, Danish pastries, ice-cream and liqueurs (Mabberley, 2017, p. 326). It is the third most expensive spice of our times, after saffron and vanilla (Business Insider, 2021).

Although *cardamom* usually refers to the fruits of *E. cardamom* from India — also sometimes known as green cardamom and true cardamom — there are numerous other cardamoms, similarly segmented capsule-like fruits used as spices and medicine in South, Southeast, and East Asia, and

even in Africa. Many of these belong to the *Amomum* genus of the ginger family (*Zingiberaceae*), such as the black cardamom from the Himalayas (*Amomum subulatum*), and the round cardamom from Java (*Amomum compactum*). See them in detail below in section 4.6.3.

#### 4.6.1 The Botany, Origins, and Cultivation of Cardamom

The cardamom plant is a tall perennial herb from the ginger family (*Zingiberaceae*) with pink white flowers that grow at the base of the stem in clusters (van Wyk, 2014, p. 132). *Elettaria cardamomum* is indigenous to the Western Ghats region in South India, the same area that gave us black pepper and the center of its production and biodiversity (Ravindran & Madhusoodanan, 2002, p. 1). Together with black pepper and ginger, it has been wild-harvested since time immemorial, and formed the livelihood of many from the beginnings of the ancient spice trade around the 3<sup>rd</sup> century BC, until today (van Wyk, 2014, p. 132). Cardamom can only grow in a tropical climate, thriving in higher altitudes in the shade of trees, similarly to black pepper (which is a climbing vine) and thus modern cultivation does not differ much from traditional wild harvesting (van Wyk, 2014, p. 132). Cardamom is hand picked when ripe or near-ripe one by one — explaining its relatively high price — and then dried. It generally comes in light green, but one can also find them in white, which is a result of an extra step of steaming or bleaching before the drying process (van Wyk, 2014, p. 132). From the 1920s, Guatemala gradually became a major cardamom exporter, surpassing India in production. It is also grown in Tanzania and Papua New Guinea on a small scale.

#### 4.6.2 The History of Cardamom

It is difficult to trace the history of cardamoms with certainty because of the confusion in nomenclature (Cumo, 2013). However, the cardamom described in 4<sup>th</sup> century BC in Indian Ayurvedic literature is probably the green or true cardamom of today, called *elā*<sup>63</sup> in Sanskrit. Cardamom was also described by Theophrastus in the 4<sup>th</sup> century BC. He reports that *kardamomon* and *amomon* (cardamom and black cardamom) come from Media, or according to some, from India — just like spikenard and most other spices (Theophrastus, 1916, p. 249). Pliny connects amomum to North India, which is quite a punctual source for black cardamom. Cardamom was known to Dioscorides and Hippocrates, who have both written on its health benefits, e.g. aiding digestion. In Modern Greek, there is an informal way of saying ‘to strengthen, get strong’: *καρδαμών* *kardamónō*<sup>64</sup> deriving from the name of the spice.

Medieval Arab doctors wrote about cardamom in similar ways, and the geographer al-Idrīsī described ca. 1150 that it is brought to the port of Aden from Sindh, India and China, whereas in China, black cardamoms were important in the economy of the Song period (960–1279) (Prance & Nesbitt, 2005, pp. 158–159). Green cardamom reached China from Southeast Asia, in Hong Kong it is consumed primarily by the Indians and the Portuguese. It is cultivated in Guangdong, Guangxi, and Yunnan, rather used in medicine than cooking (S.-Y. Hu, 2005, pp. 325–326). For more on cardamom’s history, see Dalby (2000, pp. 102–106).

<sup>63</sup>Monier-Williams, 1899, p. 232.

<sup>64</sup>[https://www.greek-language.gr/greekLang/modern\\_greek/tools/lexica/triantafyllides/search.html?lq=%CE%BA%CE%81%CE%B4%CE%B1%CE%BC%CF%8E%CE%BD%CF%89&dq=](https://www.greek-language.gr/greekLang/modern_greek/tools/lexica/triantafyllides/search.html?lq=%CE%BA%CE%81%CE%B4%CE%B1%CE%BC%CF%8E%CE%BD%CF%89&dq=)

#### 4.6.3 A Crowd of Cardamoms: Identity and Confusion with Other Spices



Figure 4.7 False cardamoms: (a) Black cardamom from the Himalayas (*Amomum subulatum*), (b) Chinese black cardamom or *tsao-ko* from Yunnan, China (*Amomum tsao-ko*), and (c) round cardamom from Java (*Amomum compactum*). Credit: Aromatiques, NAI.

When it comes to cardamoms most of us are only familiar with one or two kinds, however, there is a multitude of plant species that are harvested for their fruit known by their common names as some kind of cardamom. All of these belong to *Zingiberaceae*. True cardamom — commercially the most important species — belongs to the genus *Elettaria*, a name derived from the Tamil root *elettari*, meaning cardamom seeds (Ravindran & Madhusoodanan, 2002, p. 1). Besides the genus *Elettaria*, “false” cardamoms are found in two other genera: *Amomum* and *Aframomum*. Following van Wyk (2014, pp. 290–308)’s checklist, these are listed in table 4.17.

<i>Amomum aromaticum</i>	Bengal cardamom; Nepal card.; large card.	Bangl.; Nepal
<i>Amomum compactum</i> *	Indonesian cardamom	SE. Asia
<i>Amomum costatum</i> *	Chinese black cardamom	E. Asia
<i>Amomum globosum</i>	round Chinese cardamom	China
<i>Amomum kepulaga</i> *	round cardamom	Trop. Asia
<i>Amomum krervanh</i>	Cambodian cardamom; krervanh	Trop. Asia
<i>Amomum maximum</i>	Java cardamom	Trop. Asia
<i>Amomum subulatum</i>	brown cardamom; greater card.; Indian card.	Asia
<i>Amomum tsao-ko</i> *	tsao-ko cardamom; large cardamom	Asia
<i>Amomum villosum</i>	Malabar cardamom; Tavoy card.; wild Siamese card.	Asia
<i>Amomum xanthoides</i>	bastard Siamese cardamom; wild Siamese card.	Asia
<i>Aframomum alboviolaceum</i>	Cameroon cardamom	Trop. Africa
<i>Aframomum angustifolium</i>	Madagascar cardamom	Madagascar
<i>Aframomum daniellii</i>	bastard Melegueta; Cameroon cardamom	Trop. W. Af.
<i>Aframomum hanburyi</i>	Cameroon cardamom	Trop. W. Af.
<i>Aframomum corrorima</i>	Ethiopian cardamom; korarima	Trop. NE. Af.
<i>Aframomum macrospermum</i>	Guinea cardamom	W. Af.

Table 4.17 Spice plants with a common name that includes *cardamom* from the *Amomum* genus in Asia cultivated for their fruit & seed, and those from the *Aframomum* genus of Africa, cultivated for their seed (van Wyk, 2014). Items marked with asterisks are identified as botanical synonyms by me.

*Amomum*<sup>65</sup> is a genus home to a remarkable number of plants that yield pungent fruits and seeds, most known for *Amomum subulatum*. The *Amomum* genus contains of dozens of aromatic, spice-yielding and medicinal plant species primarily growing in India and China, and elsewhere in tropical and subtropical Asia, New Guinea, and North Queensland. Commonly called black cardamom or brown cardamom, but also referred to in various other names in English, such as Nepal cardamom, greater cardamom, Indian cardamom, Indian black cardamom, fake cardamom, Bengal cardamom, big cardamom, hill cardamon, and winged cardamom, the fruits of *A. subulatum* are larger than green cardamom, and it is native to the eastern Himalayan region; North India, Nepal, Bhutan, and Tibet. In Hindi it is called बड़ी इलाइची *badī ilāichī* ‘big cardamom’ or काली इलाइची *kālī ilāichī* ‘black cardamom’. In Chinese it is known as 香豆蔻 *xiāngdòukòu* ‘fragrant cardamom’, and S.-Y. Hu (2005, p. 327) also reports a local name in eastern Tibet for it: 嘎哥拉 *gágēlā* (ka-ko-la), which we will return to later. The dried fruits of this plant (see figure 4.7) are used in savory dishes of northern India and Pakistan, and have a heavy smoky aroma and camphor-like taste. The brown color is a result of roasting and smoking on open fires (van Wyk, 2014, p. 132).

There are even larger (black) cardamoms, growing in the mountainous Vietnam-China borderlands, important in the cuisines of Vietnam, Yunnan, and Sichuan, such as *A. tsao-ko*<sup>66</sup> (recently renamed as *Lanxangia tsao-ko* (Crevost & Lemarié) M.F.Newman & Skornick.), which S.-Y. Hu (2005, p. 326) calls Yunnan cardamom, and explains that in Yunnan, it goes into the chicken soup whole, as a flavoring agent. It is also used medicinally<sup>67</sup>, and the scientific species name comes from the transcribed Chinese name 草果 *cǎoguǒ*. In English it is called *tsao-ko cardamom*. S.-Y. Hu (2005, p. 326) distinguishes an *A. hongtsaoko* Liang et Fang (red cardamom), which appears to be a synonym for *A. tsao-ko* after consulting botanical databases. If one searches for “red cardamom” online, spice vendors’ advertisements would appear offering *tsao-ko* cardamom, also named “cao guo”. Putzel (2017) calls *tsao-ko* cardamom simply as black cardamom, and explores its cultivation and trade in Yunnan in great detail. He explains that in the last 50 years it has become a cash crop, and it is now the primary source of cardamom in Yunnan, together with *A. villosum*<sup>68</sup>, known as Tavoy cardamom, or 砂仁 *shāré* in Chinese (Putzel, 2017, p. 41).

Lastly, there are cardamoms that are round and white, indigenous to Southeast Asia. *Amomum krervanh* (newly reassigned as *Wurfbainia vera* (Blackw.) Skornick. & A.D.Poulsen) is Siam cardamom, Cambodian cardamom, or krervanh in English, and 白豆蔻 *báidòukòu* ‘white cardamom’ in Chinese. *A. compactum* (newly reassigned as *Wurfbainia compacta* (Sol. ex Maton) Skornick. & A.D.Poulsen) is known as round cardamom, Indonesian cardamom, or Java cardamom in English, and 咖哇白豆蔻 *Zhǎowā báidòukòu* ‘Java white cardamom’ in Chinese, a spice used in TCM, and botanically very similar to *A. maximum*, which is 九翅豆蔻 *jiǔchìdòukòu* ‘nine-winged cardamom’ in Chinese. These are the first cardamoms that were imported to China from mainland Southeast Asia, together with nutmegs that caused an initial confusion we will shortly see. Cardamom in Indonesian is called *kapulaga* (Javanese

<sup>65</sup>GBIF Secretariat, 2021, *Amomum Roxb.*

<sup>66</sup><https://herbaltcm.sn.polyu.edu.hk/herbal/caoguo>

<sup>67</sup>FoC — [http://www.efloras.org/florataxon.aspx?flora\\_id=2&taxon\\_id=24000100](http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=24000100)

<sup>68</sup><https://herbaltcm.sn.polyu.edu.hk/herbal/villous-amomum-fruit>

کالپولاگا *kapulaga*), primarily referring to *A. compactum* (more specifically *kapulaga jawa* ‘Javanese cardamom’, with an Old Javanese word<sup>69</sup> that people on the Wiktionary try to connect with Sanskrit कक्कोल *kakkola*<sup>70</sup>. Wyk’s *A. kepulaga* is a synonym for *A. compactum*.

Moving on to Africa, the genus *Aframomum*<sup>71</sup> contains around 50 species from the tropical regions of Africa, including Madagascar, Mauritius, and the Seychelles on the Indian ocean. The most important spice crop of this genus is *Aframomum melegueta* (grains of paradise, Melegueta pepper), and *A. exscapum* (alligator pepper), and staying on cardamoms: *A. corrorima*, commonly known as Ethiopian cardamom, or korarima. The latter is also often referred to as false cardamom, because the structure of the fruit imitates the true cardamom. One difference between the African and Asian cardamoms, is that in Africa, mostly the seeds are used, while in Asia, the whole seed pods are made use of (van Wyk, 2014).

What is common in all these different spice plants spanning from Asia to Africa? What connects them and makes us discuss them under cardamom? Their physical (and biochemical) properties. Not only are these plants related botanically, but the anatomy of their fruits are quite similar. Consequently, we can deduct that cardamom as a prototype has two features: (1) it is aromatic, (2) it is a capsule containing edible seeds. And just as cardamom is a prototypical object, *cardamom* — as a name — is a prototypical word that is used and reused as a headword to propagate spice names. There is also a certain dichotomy at play, the dynamics of adjectives that describe, distinguish, and evaluate a type of cardamom. Think of: green vs. black, Indian vs. Nepal, lesser vs. greater, true vs. false.

#### 4.6.4 Some Remarks on Common Names

When combing through the literature of cardamoms, there is small degree of conflict and overlap in the English common names that authors give to a plant and its spice. The vernacular names contend each other because authors come from different backgrounds, where one name might exist, but another does not, and — as mentioned in the introduction of this thesis — there are no rules governing this; it is up to each author. Scholars such as van Wyk from South Africa, Ravindran and Madhusoodanan from India, and S.-Y. Hu from China all bring a layer of diversity to the discussion of spices with their mentions and omissions of various common names of the plants/spices they so systematically try to present. This is expected, writers with a botanical focus pay attention to the strictly regulated scientific names in plant identification, so sometimes the included and excluded vernacular names are chosen on a whim, or depend on how much space is there left on the page. Some authors just note one common name, while some try to include as many as there are. A more interesting question would be: how do authorities on plant science go about the selection process? Where do they gather the vernacular names from?

Often, botanical and gastro writers have to make up what I call “speculative names”, where an author feels the need to devise/translate a common name for a plant that does not necessarily exist in the target language they write. In this section, *red cardamom* is certainly a case on point. This is not a

<sup>69</sup> Southeast Asian Languages Library (SEAlang) — <http://sealang.net/ojed/index.htm>

<sup>70</sup> Monier-Williams, 1899, 241.

<sup>71</sup> GBIF Secretariat, 2021, *Aframomum K.Schum.*

judgment, rather an observation; sometimes these inventions come to life and begin their journey as “real” plant/spice names that people will use if it fills a need. Further examples are found in Raghavan (2007, p. 64), who calls allspice *English spice* in English, which is an obvious translation from other languages that do in fact call it “English spice” (for the English fleet disseminated it from their colony of Jamaica).

#### 4.6.5 The Names of Cardamom

##### English

**Etymology 17.** English *cardamom* ‘cardamom’, (via post-classical Latin *cardimomum*, a. 1398), ?ca. 1425 < later also from Old French *cardemome* ‘cardamom’, ca. 1170; cf. modern French *cardamome* < Latin *cardamōnum* ‘cardamom’, 1<sup>st</sup> c. AD < Hellenistic Greek καρδάμωμον *kardámōmon* ‘cardamom’, haplological κάρδαμ- *kárdam-* ‘cress’ + ἀμωμον *ámōmon* ‘an Indian spice plant’, 3<sup>rd</sup> c. BC < Ancient Greek κάρδαμον *kárdamon* ‘garden cress *Lepidium sativum*’, perhaps a loanword (many plant names with *-amon* are clear loanwords; the suffix *-amon* is known from Pre-Greek), 4<sup>th</sup> c. BC; cf. cognates classical Latin *cardamum* <? unknown \*<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. cardamom); TLFi (2012, s.v. cardamome); C. T. Lewis and Short (1879, s.v. cardamum); Liddell and Scott (1843/1940, s.v. καρδάμωμον); Liddell and Scott (1843/1940, s.v. κάρδαμον); Beekes and van Beek (2010, p. 644)

#	Species	Name	Source
1	<i>Elettaria cardamomum</i>	cardamom	van Wyk (2014)
2	<i>Elettaria cardamomum</i>	green cardamom	Ravindran and Madhusoodanan (2002)
3	<i>Elettaria cardamomum</i>	true cardamom	Ravindran and Madhusoodanan (2002)

Table 4.18 Various names for cardamom in English.

cardamom The word *cardamom* came from Latin *cardamōnum* via a Late Latin form attested in the late 14<sup>th</sup> century, and was later also influenced by French *cardamome*, which has the same Latin etymon. *Cardamōnum* is the Latinized form of Greek καρδάμωμον *kardámōmon*, a word that was formed by compounding the Ancient Greek κάρδαμον *kárdamon* ‘cress’, which is of unknown origin, and ἀμωμον *ámōmon* ‘amomum’, signifying an unidentified Indian spice plant, formed with haplology (\**kardamamōmom*).<sup>72</sup> The OED also lists many other European cognates of the English word, such as Spanish *cardamomo* (mid 13<sup>th</sup> c. or earlier), Italian *cardamomo* (late 13<sup>th</sup> c.), and Middle High German *kardamōm* (13<sup>th</sup> c., modern German *Kardamom*). In some cases, the form shows a dissimilation of the two final nasals, and so we can come across forms, such as *cardamon*.

Beekes and van Beek (2010, p. 644) does not speculate on the origin of *kárdamon*, but explains that plant names ending in *-amon* are clearly and frequently loanwords, and that the suffix *-anon* is a known pre-Greek element. He also mentions some doubtful attempts to explain the word by

<sup>72</sup>OUP, n.d., cardamom; AHD, 2022, cardamom.

previous authors, and mentions that it has been connected with a Hittite word: *karšani* ‘an alcalic plant’. *Kárdamon* was identified with the word Καρδαμόν *ka-da-mi-ja*<sup>73</sup>, (*kardamia* as a feminine form of *kardamon*) appearing on Mycenaean tablets listing spices in Linear B, excavated in the “House of the Sphinxes” in 1950s, and dated to the 1200s BC (Bennett et al., 1958, p. 107). Meaning ‘garden cress’ (*Lepidium sativum*), of which the pungent seeds were consumed similarly to that of mustard and was popular in ancient Persia, it has been suggested that this is a Near Eastern *Wanderwort*, related to Middle Armenian կոտեմ *kotem* ‘garden cress’, and Classical Persian كودم *kūdim* ‘a sort of plant (water-cress?)’, and Akkadian *kudimmu(m)* ‘a herb, perhaps cress’.<sup>74</sup>

**Etymology 18.** English *amomum* ‘any of several species of genus *Amomum*, family Zingiberaceae, including cardamom.’, An odoriferous plant. The *Amomum* of the ancients not being certainly identified, the word was used with uncertain denotation by earlier writers;; a. 1398 < Latin *amomum* ‘amomum and a balm containing this spice’ < Ancient Greek ἄμωμον *ámōmon* ‘an Indian spice-plant, black cardamom (*Amomum subulatum*)’, an Oriental loan-word, cf. κιννάμωμον < Semitic\* ‘id.’; cf. cognates Classical Syriac حَمَامَة *ḥamāmā* → Arabic حَمَامَة *ḥamāmā*; Akkadian *ḥamīmu*<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *amomum*); C. T. Lewis and Short (1879); Liddell and Scott (1843/1940) and Beekes and van Beek (2010, p. 97); Löw (1881, p. 169), Lev and Amar (2008, p. 100), and Roth et al. (1968/2004, vol. 6, p. 66)

As for the identity of Greek *ámōmon* (Latin *amomum*)<sup>75</sup>, it is one of the more perplexing ancient *amomum* spices. Although some consider it unidentified, the *amomum* of antiquity was probably what we call today as black cardamom. In the *Liddel-Scott-Jones: A Greek-English Lexicon* (LSJ) entry, it is defined as “an Indian spice plant, prob.”, but nevertheless recognized as *Amomum subulatum*, “Nepal cardamom”.<sup>76</sup> Dalby (2000, p. 103) thinks that Linnaeus made a good guess about the identity of the spice plant when he aptly named the Asian genus *Amomum*, in which several other spice yielding plants we discussed above bear fruits known as “false cardamom” and “bastard cardamom”. The Greek word of *ámōmon* is a loan from Semitic languages whose further origin is uncertain, akin to and Akkadian *ḥamīmu*, Classical Syriac حَمَامَة *ḥamāmā*, Arabic حَمَامَة *ḥamāmā*<sup>77</sup>, and Hebrew חַמָּם *ḥāmām*, which are not re-borrowings from Greek according to Löw (1881, p. 123). Denoting ‘a spice-plant’, these are probably from the Semitic root *h-m-m* ‘to be hot’ (Klein, 1987, p. 222). Thus, rendering the Greek word to be a loanword, just like in the case of *cinnamon*, which is clearly marked as an “oriental loanword” in Greek etymological dictionaries.

If most likely candidate for this “lost spice” is black cardamom, what happened to the name? One of the last reports on it comes from 1834, when Edmund Roberts traveling on a diplomatic mission sent by United States president Andrew Jackson listed items of Chinese trade lesser known in the West,

<sup>73</sup>Palaeolexicon — <http://www.palaeolexicon.com/Word>Show/16764>

<sup>74</sup>cf. Kouyoumdjian, 1970, p. 371; Asatrian, 2012; Black et al., 1999/2000, p. L14.

<sup>75</sup>C. T. Lewis and Short, 1879, *amomum*.

<sup>76</sup>Liddell and Scott, 1843/1940, ἄμωμον.

<sup>77</sup>cf. Roth et al., 1968/2004, vol. 6, p. 66; AHD, 2022, *cardamom*; Löw, 1881, p. 169; Lev and Amar, 2008, p. 100.

and among them: amomum. He notes in his account that amomum is a seed, with “strong pungent taste, and a penetrating aromatic smell; [...] used to season sweet dishes” (Roberts, 1837, p. 135), which can easily describe any kind of cardamom people nowadays use. The term *amomum* is not used anymore; no prevailing spice, seed, or medicinal herb today is called the sort, however the Latin name for the genus *Amomum* from the ginger family (*Zingiberaceae*) carries on the name. The question of amomum will come up again in the discussion of *cinnamon*’s origins in section 4.8.4. Cardamom is also referred to as the queen of spices, as it can be seen on the book title of Nair (2011), *Agronomy and Economy of Black Pepper and Cardamom: The “King” and “Queen” of Spices*, and we can come across green cardamoms advertised using its Hindi name spelled in English: *ilaichi/elaichi*, especially in the locales of the Indian diaspora.

And so, reflecting on table 4.18 which shows all the names using the headword *cardamom*, we identified *cardamom* as a prototype word used in the propagation of other, related spice-names.

Arabic

**Etymology 19.** Arabic *هال* *hāl* ‘cardamom’ < Persian *هیل* *hil* ‘the lesser cardamoms’ < Sanskrit एला *elā* ‘cardamom’ < Proto-Dravidian\* *\*ēla* ‘cardamom’; cf. Tamil *ēlam*<sup>a</sup>

<sup>a</sup>Wehr (1976, p. 1223); Steingass (1892, p. 1521); Dalby (2000, p. 104); Burrow and Emeneau (1984, p. 87)

In Arabic, cardamom is known by many different names varying from dialect to dialect, but the most common to come across in both modern and historical dictionaries is *hāl* or هيل *hayl*. *Hāl* is from Persian هیل *hil* ‘id.’ which goes back to a Sanskrit etymon, एला *elā*, which is ultimately a Dravidian loanword, reconstructed as \**ēla*. In modern Arabic dialects, an occasional /l/ to /n/ sound change can be observed, resulting in a version with a final /n/. Sometimes it is also prefixed by the word for ‘seed’, as in *habb al-hāl* [cardamom seed], referring to true cardamom, hence the contracted modern Egyptian Arabic *habhān*. *Hāl* appears in Ibn Sina’s *Canon of Medicine* (1025), in a passage on how to prepare a concoction made with *hāl* (cardamom), *qāqulla* (black cardamom?), *qaranful* (clove), *dār filfil* (long pepper), using one *dirham* (~3 gr) each.<sup>78</sup>

**Etymology 20.** Arabic قَالْة qāqulla ‘cardamom; black cardamom’ < Classical Syriac qāqullā ‘cardamom’ < Akkadian (qa-qu-ul-lu.SAR) qāqullu ‘cardamom’ <? Sanskrit तक्कोल, कक्कोल takkola, kakkola ‘plant with aromatic berry; the perfume made from it’; cf. Pali takkola; Tibetan ལྷྲྷ རླྷ རླྷ kakola<sup>a</sup>

<sup>a</sup>Wehr (1976, p. 863); Löw (1924, vol. 1, p. 489); Zimmern (1915, p. 58); Monier-Williams (1899, pp. 431, 241)

Whether we consult dictionaries, explore the spice terminology of modern dialects, or read medieval travel writers, the word *qāqulla* emerges often. This word is unmistakably a loanword, indicated by its distinct, alien form deviating from the usual Arabic word patterns. It is first attested

78

in 8<sup>th</sup>-century medical literature.<sup>79</sup> In contemporary dictionaries it is usually glossed simply as ‘cardamom’. If we look at the origins of names for cardamom in modern languages, *qāqulla* is not a remarkably “successful” word; in terms of distribution, words originating in Greek surpass this and most others. However, if we dig deeper, we will find that *qāqulla* is likely a prominent ancient [Wanderwort](#), possibly exhibiting a long journey in its history. Modern Turkish *kakule* is one of the few breadcrumbs to hint that we are dealing with a regional [Wanderwort](#). According to the *Nişanyan Sözlük* (NS), *kakule* is attested in the 15<sup>th</sup> century, and comes from Arabic whose etymon is Aramaic *qāqūlā*, a word going back to Akkadian *qāqullu*, thus stretching our investigation to quite the time depth.<sup>80</sup>. The [Chicago Assyrian Dictionary](#) (CAD)’s only information on it that it was a plant, growing in the garden of Merodach-Baladan II, a king of Babylon who ruled in the 8<sup>th</sup> century BC.<sup>81</sup>. The Arabic word later entered the vocabulary of Latin, and survives today as the name for the genus *Cakile*.

Similarly to amomum, we are not entirely sure what Arabic *qāqulla* denoted in the past, but due to the fact that some medicinal recipes list both *hāl* and *qāqulla* as ingredients, we can be certain that they denoted different materials. Furthermore, it is likely that similarly to the word *cardamom*, *qaqulla* was an umbrella term. Consulting Ibn Sīnā confirms this approach, he distinguishes a greater and a lesser kind of qaqulla, and describes their appearance, taste, and uses:

“Qāqulla. Its nature: There are big ones and there are small ones. The big ones are like small black walnuts [...] reminding the tongue of aromatic cubebs. The small ones are like cloves in shape, and also aromatic (Ibn Sīnā, 1025/1329).

In Amar and Lev (2017, pp. 66–68)'s work, the big qāqulla is identified as *Amomum melegueta* [sic] (grains of Paradise) with a question mark attached to it, while the small qāqulla is identified as true cardamom *E. cardamomum*. I would argue with the first. Both items appear in the book of Ibn Rushd (1126–1198), also known as Averroes.

Chinese

**Etymology 21.** Mandarin Chinese 豆蔻 *dòukòu* MC MC /dəuH həuH/ ‘cardamom’ [bean-cardamom], compound of 豆 ‘bean(-like)’ + 蔻 ‘many; profusion’ (BCGM); or phono-semantic matching (confused with nutmeg at first), ca. 863 <<sup>?</sup> Middle Chinese 多骨 *duōgǔ* MC MC /ta kuət/ ‘round cardamom’ <<sup>?</sup> Pali *takkola* ‘Bdellium, a perfume made from the berry of the kakkola plant’ <<sup>?</sup> Sanskrit तक्कोल, कक्कोल *takkola, kakkola* ‘plant with aromatic berry; the perfume made from it’; cf. Pali *takkola*; Tibetan ལྷ་སྒྲྲ ། *kakola*; Chinese 嘎哥拉 *gágélā*<sup>a</sup>

<sup>a</sup>Donkin (2003, p. 22); Duan (ca. 860, 18:55); Pali Text Society (1921–1925, p. 292); Monier-Williams (1899, pp. 431, 241).

In Chinese, the word equivalent to English *cardamom* is 豆蔻 *doukou* [bean-cardamom], some- doukou

79 Ske

<sup>80</sup>Nışanyan, 2022, kakule.

<sup>81</sup>Roth et al., 1968/2004, Vol. 13, p. 124.

#	Species	Name	Tr.	Gloss	Source
1	<i>Elettaria cardamomum</i>		حال <i>hāl</i>	pho- netic	Wehr (1976)
2	<i>Elettaria cardamomum</i>		خَيْر بُوَّاء <i>khayr buwwā'</i>	good- scent	Lane (1863)
3	<i>Elettaria cardamomum</i>		قَافْلَة صَغِيرَة <i>qāqulla ṣaghīra</i>	small car- damom	Amar and Lev (2017)
4	<i>Elettaria cardamomum</i>		حَب الْهَال <i>habb al-hāl</i>	cardamom seed	Baalbaki (1995)
5	<i>Elettaria cardamomum</i>		حَب الْهَان, حَبَّهَان <i>habb al-hān, habhān</i>	cardamom seed	Wehr (1976)

Table 4.19 Various names for cardamom in Arabic.

times with a variant of the first character meaning ‘bean’ containing the grass radical 豆. As Donkin (2003, p. 22) points out, cardamom and nutmeg were initially confused in classical Chinese literature. Probably on account of their similar appearance, and the fact that Chinese merchants imported both from somewhere around mainland Southeast Asia, more specifically, from the Malay Peninsula. Initially *doukou* referred to both spices (attested ca. 863), then in later sources, nutmeg was distinguished as 肉豆蔻 *roudoukou*, literally meaning ‘fleshy-cardamom’.

*Doukou* appears in 9 and 10<sup>th</sup>-century sources, such as the YYZZ and the TPGJ, as 白豆蔻 *baidoukou* [white-cardamom] reportedly called 多骨 (*MC* /ta kuət/) from the land of 伽古羅 *jiaguoluo* (Kakola?), describing the round cardamom sourced from either in Siam (*Amomum kravanh*) or Java (*Amomum compactum*).<sup>82</sup> This country refers to Kakola/Takola, a settlement on the western coast of the Malay Peninsula, where cardamoms were marketed together with nutmegs from the Moluccas (Donkin, 2003, p. 22). This word is said to be connected to Sanskrit तक्कोल *takkola* ‘a kind of perfume’, कक्कोल *kakkola* ‘a kind of aromatic plant; and a perfume made from its berries’<sup>83</sup>, a word that is the proposed etymon for others, such as Tibetan ཀකླ କାଳ *kakola*, referring to black cardamom, or Pali *takkola*. The Pali word is given as ‘a perfume made from an aromatic berry’, and also the name of a country.<sup>84</sup> 嘎哥拉 *gagela/kakola*, a local name for red cardamom mentioned by S.-Y. Hu (2005) also fits in here. Takola as a place name for a trading settlement on the Malay peninsula appears in Ptolemy’s *Geography*, better known as “Golden Chersonese” in antique writings. For more on the mystery of Kakola, see Wheatley (1961). It has not yet been established if *doukou* derives from a foreign name, such as the one reported in the YYZZ, or the phonological similarity is coincidental, but I hope an expert Sinologist will one day give an expert opinion. It is a plausible assumption for the following reasons: The character 蔻 *kou* does not appear in any other context or meaning, consulting the CTP, the first mention is a Tang dynasty poem about Jiangnan<sup>85</sup> cardamom. The *Nanfang Caomu*

<sup>82</sup>Duan, ca. 860, 18:55.

<sup>83</sup>Monier-Williams, 1899, pp. 431, 241.

<sup>84</sup>Pali Text Society, 1921–1925, p. 292; Trenckner, 1879, p. 59.

<sup>85</sup>Historical region of China south of the Yangtze river

*Zhuang* (NFCM), traditionally dated to the 4<sup>th</sup> century BC mentions cardamom but the authenticity and dating of this particular botanical treatise has been questioned over a hundred years before (Ma, 1978). Moreover, the character itself seems to have been utilized on purely phonetic grounds, and the attached grass/herb radical hinted on the new meaning (艸 *cao* ‘grass’ + 禽 *kou* ‘bandit’). On the other hand, the few Chinese etymological dictionaries I could access did not discuss *kou*. The BCGM interprets *doukou* as ‘bean’ + ‘many; profusion’ ??, which does not explain its use for nutmeg.

#	Species	Name	Tr.	Gloss	Source
1	<i>Amomum spp.</i>	豆蔻	<i>dòukòu</i>	bean-cardamom	S.-Y. Hu (2005)
2	<i>Elettaria cardamomum</i>	綠豆蔻	<i>lǜdòukòu</i>	green-cardamom	Wikipedia (n.d.)
3	<i>Elettaria cardamomum</i>	青砂仁	<i>qīngshārénn</i>	green-gravel-kernel	Wikipedia (n.d.)
4	<i>Elettaria cardamomum</i>	小豆蔻	<i>xiǎodòukòu</i>	little-cardamom	DeFrancis (2003)

Table 4.20 Various names for cardamom in Chinese.

Zhang and Unschuld (2015, p. 729) identifies 豆蔻 with *Alpinia hainanensis* K.Schum. (syn. *Alpinia katsumadai* Hayata)<sup>86</sup>, a medicinal plant bearing round compact fruits, commonly referred to now as 草豆蔻 *caodoukou* [herb-cardamom]. In modern TCM, *doukou* is either *Amomum kravanh* or *Amomum compactum*<sup>87</sup>, while the green cardamoms of *Elettaria cardamomum* are designated as 小豆蔻 *xiaodoukou* [little cardamom]. Finally, the seeds of the greater galangal (*Alpinia galanga*)<sup>88</sup> are referred to in Chinese as 紅豆蔻 *hóngdòukòu* [red cardamom]. See table 4.20 for an overview.

not really metaphor but simile

## Summary

To summarize, I have presented the way of *cardamom* into English, and on the journey I was led astray by the spice amomum, its etymology and possible identity. I have then presented a multitude of spice names, propagated using the word *cardamom* as prototype. In Arabic, I have identified *hal/hayl* and *qaqulla* as important words in the history of cardamom(s) in a Middle Eastern context, the latter term possibly having an obscure but potentially incredible history. According to authors, such as Donkin (2003), Sanskrit seems to be the origin of *qaqulla* and its cognates in the Near East, and there is a possibility that Chinese *doukou* as well is a loanword from the same region: the Malay Peninsula from where the spice were sourced, and country called Kakola/Takola. Product names derived from toponyms are a well known historical linguistic phenomenon (e.g. cologne, hamburger), but here the connection between the Sanskrit plant name and the toponym Kakola is unclear and needs further investigation.

Spice names that are found in general dictionaries can be consulted in table 4.21, and figure 4.8 illustrates the journeys I discussed above.

<sup>86</sup><https://herbaltcm.sn.polyu.edu.hk/herbal/katsumada-galangal-seed>

<sup>87</sup><https://herbaltcm.sn.polyu.edu.hk/herbal/round-cardamon-fruit>

<sup>88</sup><https://herbaltcm.sn.polyu.edu.hk/herbal/galangal-fruit>

#	Language	Term	Gloss	Loan	Source
1	English	<i>cardamom</i>		yes	OUP (n.d.)
1	Arabic	<i>hāl</i>	phonetic	yes	Wehr (1976)
2	Arabic	<i>khayr buwwā'</i>	good-scent	yes	Lane (1863)
3	Arabic	<i>ḥabb al-hāl</i>	cardamom-seed	no	Baalbaki (1995)
4	Arabic	<i>ḥabb al-hān, ḥabbañ</i>	cardamom-seed	no	Wehr (1976)
1	Chinese	<i>dòukòu</i>	bean-cardamom	maybe	DeFrancis (2003)
2	Chinese	<i>xiǎodòukòu</i>	little-cardamom	no	DeFrancis (2003)

Table 4.21 Conventionalized names for cardamom in English, Arabic, and Chinese, found in dictionaries.

### Etymological stages of names for cardamom

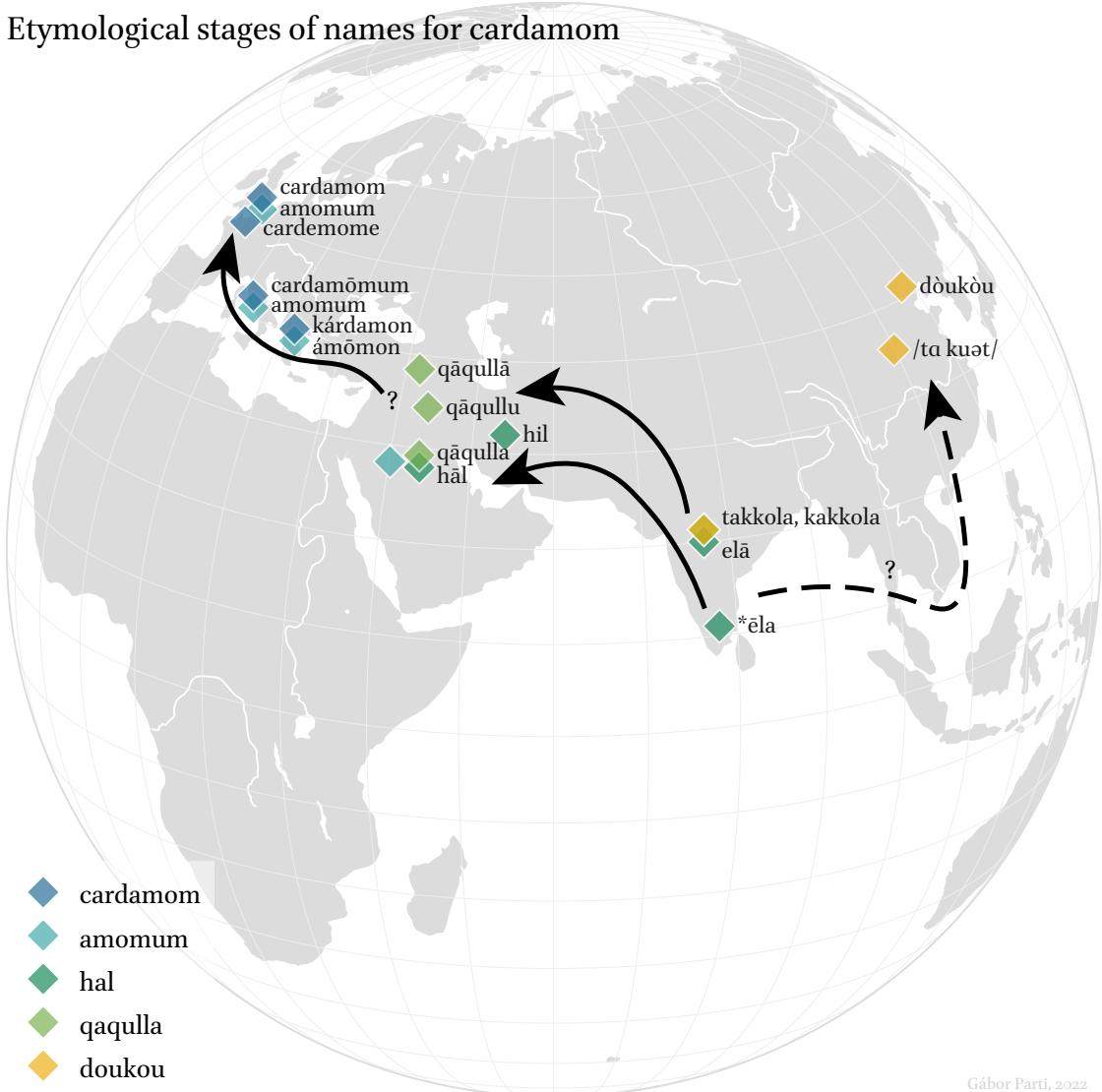


Figure 4.8 Etymological stages in the progression of prototypical names of cardamom.

## 4.7 Chile

### 7. CHILE

POWO

**English:** chile. **Arabic:** فلفل حار *fulful hārr* [hot pepper]; **nan.** **Chinese:** 辣椒 *làjiāo* [pungent-pepper]. **Hungarian:** paprika; pirospaprika [red-pepper]; *fűszerpaprika* [spice-pepper]; *erős-paprika* [strong-pepper]; *csilipaprika* [chili-pepper]; *Cayenne bors* [Cayenne pepper]; *törökbors* [Turkish-pepper] (historic).

Plant species: *Capsicum annuum* L.; *C. frutescens*; *C. chinense*; et al.

Family: *Solanaceae*

Plant part used: fruit

Region of origin: Central America

Cultivated in: Ethiopia, India, Kenya, Mexico, Nigeria, Pakistan, Tanzania, etc.

Color: red and green in many shades



(a) a

Figure 4.9 Chile .

### 4.7.1 The Botany, Origins, and Cultivation of Chile

### 4.7.2 The History of Chile

### 4.7.3 The Names of Chile

#### English

**Etymology 22.** English *chilli*, XVII Ee 1660 Et 1604 Mw < Spanish *chile* ‘id.’ < Classical Nahuatl *chīlli* ‘id.’<sup>a</sup>

*a*

#	Species	Name	Source
1	<i>Capsicum annuum</i>	paprika	van Wyk (2014)
2	<i>Capsicum annuum Grossum</i>	bell-pepper	OUP (n.d.)
3	<i>Capsicum annuum Grossum</i>	green pepper	van Wyk (2014)
4	<i>Capsicum annuum Longum</i>	paprika pepper	OUP (n.d.)
5	<i>Capsicum annuum Longum</i>	sweet pepper	OUP (n.d.)
6	<i>Capsicum annuum var. glabriuscum</i>	bird pepper	OUP (n.d.)
7	<i>Capsicum annuum; C. frutescens</i>	Cayenne pepper	van Wyk (2014)
8	<i>Capsicum annuum; C. frutescens</i>	Guinea pepper	OUP (n.d.)
9	<i>Capsicum annuum; C. frutescens</i>	Indian pepper	OUP (n.d.)
10	<i>Capsicum cerasiforme</i>	cherry-pepper	OUP (n.d.)
11	<i>Capsicum frutescens</i>	bird chili	van Wyk (2014)
12	<i>Capsicum frutescens</i>	hot pepper	van Wyk (2014)
13	<i>Capsicum frutescens</i>	piri piri	van Wyk (2014)
14	<i>Capsicum frutescens</i>	Tabasco pepper	van Wyk (2014)
15	<i>Capsicum spp.</i>	capsicum	OUP (n.d.)
16	<i>Capsicum spp.</i>	chili	van Wyk (2014)
17	<i>Capsicum spp.</i>	chili pepper	van Wyk (2014)
18	<i>Capsicum spp.</i>	pepper	OUP (n.d.)
19	<i>Capsicum spp.</i>	pod pepper	OUP (n.d.)
20	<i>Capsicum spp.</i>	red pepper	van Wyk (2014)

Table 4.22 Various names for chile in English.

#	Species	Name	Tr.	Gloss	Source
1	<i>Capsicum spp.</i>	bābrikā		paprika	Wikipedia (n.d.)
2	<i>Capsicum spp.</i>	fulayfila		little pepper	Wehr (1976)
3	<i>Capsicum spp.</i>	fulful akhḍar		green pepper	Wehr (1976)
4	<i>Capsicum spp.</i>	fulful ahmar		red pepper	Baalbaki (1995)
5	<i>Capsicum spp.</i>	fulful hulw		sweet pepper	Baalbaki (1995)
6	<i>Capsicum spp.</i>	fulful ḥārr		hot pepper	Baalbaki (1995)
7	<i>Capsicum spp.</i>	fulful, filfil		phonetic loan	Wehr (1976)
8	<i>Capsicum spp.</i>	shaṭṭa, shaṭṭa		phonetic loan	Wehr (1976)
9	<i>Capsicum spp.</i>	ḥirrif		pungent; acrid (taste)	Baalbaki (1995)
10	<i>Capsicum spp.</i>	ḥārr		heat	Baalbaki (1995)

Table 4.23 Various names for chile in Arabic.

#	Species	Name	Tr.	Gloss	Source
1	<i>Capsicum annuum</i>	番薑	<i>fānjiāng</i>	foreign-ginger	Dott (2020)
2	<i>Capsicum annuum</i>	番椒	<i>fānjiāo</i>	foreign-pepper	Dott (2020)
3	<i>Capsicum annuum</i>	海椒	<i>hǎijiāo</i>	sea-pepper	
4	<i>Capsicum annuum</i>	辣椒	<i>lājiāo</i>	pungent-pepper	DeFrancis (2003)
5	<i>Capsicum annuum</i>	辣茄	<i>làqié</i>	spicy-eggplant	Dott (2020)
6	<i>Capsicum annuum</i>	秦椒	<i>qínjiāo</i>	Qin-pepper	Dott (2020)
7	<i>Capsicum spp.</i>	紅椒	<i>hóngjiāo</i>	red-pepper	DeFrancis (2003)
8	<i>Capsicum spp.</i>	紅辣椒	<i>hónglājiāo</i>	red-pungent-pepper	
9	<i>Capsicum spp.</i>	紅甜椒粉	<i>hóngtiánjiāofěn</i>	red-sweet-pepper-powder	
10	<i>Capsicum spp.</i>	辣胡椒	<i>lāhújiāo</i>	pungent-barbarian-pepper	MDBG (n.d.)
11	<i>Capsicum spp.</i>	辣子	<i>lāzǐ</i>	spiciness	DeFrancis (2003)
12	<i>Capsicum spp.</i>	青椒	<i>qīngjiāo</i>	green-pepper	DeFrancis (2003)
13	<i>Capsicum spp.</i>	柿子椒	<i>shízǐjiāo</i>	persimmon-ZI-pepper	MDBG (n.d.)
14	<i>Capsicum spp.</i>	甜辣椒	<i>tiánlājiāo</i>	sweet-pungent-pepper	DeFrancis (2003)

Table 4.24 Various names for chile in Chinese.

## Arabic

## Chinese

## Summary

﴿ 8. *Capsicum annuum* L.

POWO

English: *paprika*. Chinese: 紅甜椒粉 *hóngtiánjiāofěn*. Arabic: بابريكا *bābrīkā*. Hungarian: *paprika*.

**Etymology 23.** English *paprika* 1839 <sup>OE</sup> < Hungarian *paprika* <sup>OE</sup> < Serbo-Croatian *paprika*, from *papar* <sup>OE</sup> *pàprika* from *pàpar* <sup>WK</sup> < Slavic \**pirvǔ* <sup>AH</sup> \**pъrvъrb* <sup>WK</sup> < Latin <sup>Wo</sup> *piper* <sup>EE OE MW WK</sup> ‘long pepper, black pepper’ <sup>AH</sup> < Ancient Greek *pέperi*, <sup>EE Wo MW AH WK</sup> *piperi* <sup>OE MW</sup> < Pahlavi <sup>WK OE</sup> < Middle Indo-Aryan <sup>WK</sup> *pippari*, <sup>OE</sup> *pipparī* ‘long pepper’ <sup>AH</sup> < Sanskrit *pippalī* <sup>AH</sup> ‘berry, peppercorn’, <sup>EE Wo</sup> *pippali* ‘long pepper’ <sup>OE MW WK</sup> < *pippalam* ‘berry, fruit of the pipal tree’ <sup>AH</sup>

#	Language	Term	Gloss	Loan	Source
1	English	<i>paprika</i>		yes	OUP (n.d.)
2	English	<i>bell-pepper</i>		no	OUP (n.d.)
3	English	<i>green pepper</i>		no	OUP (n.d.)
4	English	<i>paprika pepper</i>		no	OUP (n.d.)
5	English	<i>sweet pepper</i>		no	OUP (n.d.)
6	English	<i>bird pepper</i>		no	OUP (n.d.)
7	English	<i>Cayenne pepper</i>		no	OUP (n.d.)
8	English	<i>Guinea pepper</i>		no	OUP (n.d.)
9	English	<i>Indian pepper</i>		no	OUP (n.d.)
10	English	<i>cherry-pepper</i>		no	OUP (n.d.)
11	English	<i>capsicum</i>		yes	OUP (n.d.)
12	English	<i>chili</i>		yes	OUP (n.d.)
13	English	<i>chili pepper</i>		no	OUP (n.d.)
14	English	<i>pepper</i>		yes	OUP (n.d.)
15	English	<i>pod pepper</i>		no	OUP (n.d.)
16	English	<i>red pepper</i>		no	OUP (n.d.)
1	Arabic	<i>fulayfila</i>	little pepper	no	Wehr (1976)
2	Arabic	<i>fulful akhḍar</i>	green pepper	no	Wehr (1976)
3	Arabic	<i>fulful ahmar</i>	red pepper	no	Baalbaki (1995)
4	Arabic	<i>fulful ḥulw</i>	sweet pepper	no	Baalbaki (1995)
5	Arabic	<i>fulful ḥārr</i>	hot pepper	no	Baalbaki (1995)
6	Arabic	<i>fulful, filfil</i>	phonetic loan	no	Wehr (1976)
7	Arabic	<i>shatṭa, shatīṭa</i>	phonetic loan	no	Wehr (1976)
8	Arabic	<i>ḥirrif</i>	pungent; acrid (taste)	no	Baalbaki (1995)
9	Arabic	<i>ḥārr</i>	heat	no	Baalbaki (1995)
1	Chinese	<i>làjiāo</i>	pungent-pepper	no	DeFrancis (2003)
2	Chinese	<i>hóngjiāo</i>	red-pepper	no	DeFrancis (2003)
3	Chinese	<i>lāhújiāo</i>	pungent-barbarian-pepper	no	MDBG (n.d.)
4	Chinese	<i>lāzī</i>	spiciness	maybe	DeFrancis (2003)
5	Chinese	<i>qīngjiāo</i>	green-pepper	no	DeFrancis (2003)
6	Chinese	<i>shìzījiāo</i>	persimmon-ZI-pepper	no	MDBG (n.d.)
7	Chinese	<i>tiánlājīāo</i>	sweet-pungent-pepper	no	DeFrancis (2003)

Table 4.25 Conventionalized names for chile in English, Arabic, and Chinese, found in dictionaries.

## 4.8 Cinnamon and Cassia

### 9. CINNAMON

POWO

English: *cinnamon*. Arabic: قرفة *qirfa* [rind; bark]; دارصيني *dārsīnī*. Chinese: 錫蘭肉桂 *xīlánròuguì* [Ceylon-flesh-cinnamon]. Hungarian: *fahéj* [tree-bark].

Plant species:	<i>Cinnamomum verum</i> J.Presl. (syn. <i>C. zeylanicum</i> Blume)
Family:	<i>Lauraceae</i>
Plant part used:	bark; leaf
Region of origin:	Sri Lanka; SW. India
Cultivated in:	Sri Lanka; Seychelles; Madagascar; India
Color:	warm yellowish-brown, cinnamon ■



(a) quills



(b) quills



(c) powder



(d) leaves

Figure 4.10 Cinnamon quills, powder, and leaves from *Cinnamomum verum*.

Cinnamon is well-known around the world for its sweet aroma and flavor, and as one of the oldest spices of commerce. It was a sought-after substance in rituals and traditional medicine systems of different cultures, and today it is an essential spice of several cuisines — both Eastern and Western. Cinnamon has maintained its level of demand ever since humans first traded it, and even in contemporary times it is the second most important spice in the markets of Europe and the United States (including cassia cinnamon), falling only behind black pepper (Ravindran et al., 2004).

Cinnamon comes from the inner bark (cortex) of the tropical tree *Cinnamomum verum* J.Presl (syn. *C. zeylanicum* Blume)<sup>89</sup>, which are stripped and rolled into quills of several tightly packed layers by skilled peelers of (mostly) Sri Lanka, where the plant is native. In a rare example, the literal translations of the binomial names *C. verum* meaning ‘true cinnamon’, and *C. zeylanicum* meaning

<sup>89</sup>It is difficult to navigate between the hundreds of species and subspecies of cinnamon and their overlapping botanical taxons and binomial synonyms, *C. verum* for example has 51 scientific synonyms, mainly a result of botanical history and competing naturalists. In plant taxonomy, species often have dozens of scientific names called “synonyms”. If there is consensus on the name within the scientific community, that binomial name (appended with the abbreviated name of the person who coined it) will be marked as “accepted”, while the status of the other names will be “synonym”, or “unresolved”. This is the product of the efforts of the last couple hundred years, when botanists tried to collect, describe, name, and categorize plant life around the world. As the consensus changes with time, competing names can appear in the literature. Botanical databases, such as the WFO and POWO, or specialized plant name checklists usually list all synonyms of a species to help us orientate in the jungle of plant nomenclature. Synonyms (abbreviated as syn.) are only given if a plant is known by multiple names in non-specialist literature, such as the case above.

etymology of ‘Ceylon cinnamon’<sup>90</sup> are used as common names for cinnamon in several languages. Ceylon/serendipity

#### 10. CASSIA

POWO

**English:** cassia. **Arabic:** سليخة *salīkha* [peel; bark]; nan. **Chinese:** 肉桂 *ròuguì* [flesh-cinnamon]. **Hungarian:** *kasszia(fahéj)* [cassia (tree-bark)].

Plant species:	<i>Cinnamomum cassia</i> (L.) J.Presl. (syn. <i>C. aromaticum</i> Nees); et al.
Family:	<i>Lauraceae</i>
Plant part used:	bark; fruit
Region of origin:	Southeast China
Cultivated in:	Indonesia; China; Vietnam; Timor-Leste; etc.
Color:	reddish brown



(a) stick



(b) bud (dried unripe fruit)



(c) bud

Figure 4.11 Cassia sticks and buds from *Cinnamomum cassia*.

The phrase *true cinnamon* implies that there is a false cinnamon as well, and that would be cassia. Cassia, also known as Chinese cinnamon, Chinese cassia, cassia cinnamon, and — somewhat harshly — bastard cinnamon, is obtained similarly from the aromatic inner barks of closely related species, especially *Cinnamomum cassia* (L.) J.Presl. (syn. *C. aromaticum* Nees), which is produced in Southeast China and Vietnam. Although seemingly very similar to the uninitiated eye, the two spices are different in many ways. Cassia is more hard and coarse, it is made up of a single layer of thicker rind that have curled up in the heat of the day after harvesting, in the shape of a scroll. This is the cinnamon stick that most of us are familiar with, and it is capable of damage a home grinder. It is also a bit more darker reddish brown in color, and more pungent in flavor. Ceylon cinnamon on the other hand is more fragile, slightly pale in color, and supposedly more delicate in taste because it offers a combination of different essential oils besides cinnamaldehyde (the principal component responsible for its aroma and flavor). Both are marketed in powdered form as well, and as such they are indistinguishable; creating room for adulteration. Since the Europeans took over the cinnamon trade of Sri Lanka and tapping the source of “true cinnamon” (first by the Portuguese, who got a foothold in the city of Colombo in

<sup>90</sup>Ceylon is the former name of Sri Lanka.

1518 together with trading concessions), there is a still ongoing notion that cassia is an inferior product (Chennault, 2006). And this belief eventually became reflected on the plant's Linnaean name. A few cuisines also make use of the leaves (usually from *C. verum*), and the dried, immature fruits called cinnamon buds (usually from *C. cassia*).

There are a handful of other species that are cultivated as a source of commercial cassia, such as *C. burmannii* (Indonesian cassia/cinnamon, Padang cassia, Batavia cassia, Korintje (cassia)), *C. loureiroi* (Vietnamese cassia/cinnamon, Saigon cinnamon), and *C. tamala* (Indian cassia (ligneae), Indian bark, Malabathri bark), which is more known for its leaf as Indian bay leaf, malabathrum, or tejpat. As reported in Ravindran et al. (2004, p. 10), *C. loureiroi* is extremely rare, and in actuality most of what is known as Vietnamese cassia or Saigon cinnamon is in fact *C. cassia*, contrary to what is claimed in most of the literature. This is supported by reports from botanists of French Indochina who insisted that Saigon cinnamon is brought from the north by Chinese and Annamese merchants (S.-Y. Hu, 2005, p. 400). S.-Y. Hu (2005) recounts us a personal experience from the 1960s, regarding a professor of pharmacy asking assistance in the identification of a cassia shipment from Hong Kong to the United States, stopped at maritime customs. If the cinnamon specimens are from *C. cassia*, it must be sent back. If it is *C. loureiroi*, it will be accepted. With no certain indicator or characteristics on the species, Dr. Hu's team made a decision "for humanitarian reasons" and opted for *C. loureiroi*. It is fascinating to see behind the curtain and see how difficult it is sometimes to actually know the identity of plant products circulating in global trade, and what decisions plant taxonomists must make. This is also a good anecdote to demonstrate that for the average consumer, the primary difference between these *Cinnamomum* species are purely geographic. The reason behind the hesitation to accept cassia was presumably due to its high coumarin content, a compound that is toxic in large quantities, and therefore cassia has often been portrayed as the less healthy option (Dinesh et al., 2015).

**Note 4.8.1.** In this dissertation the word *cinnamon* usually refers to all products from the species mentioned above — both cinnamon and cassia — following the everyday common usage in language. However, where a distinction is made between *cinnamon* and *cassia*, *cinnamon* only refers to that of *C. verum*, the "true cinnamon" of Sri Lanka, and *cassia* refers to cassia of any source (China, Indonesia, Vietnam, etc.).

#### 4.8.1 The Botany, Origin, and Cultivation of Cinnamon and Cassia

The plant itself, (*C. verum*) is a medium-sized, evergreen tree in the laurel family (*Lauraceae*), with glossy leaves, small white flowers, and oblong, acorn-like fruits (van Wyk, 2014, p. 104). New trees are propagated both from seeds and cuttings, and are often multi-stemmed due to practice of *coppicing*: the chopping of younger shoots to ground level to stimulate growth. Cinnamon is indigenous to Sri Lanka. Cultivation of high quality true cinnamon is historically important on the island of Sri Lanka, who is the main producer and exporter until this day. It is followed by Madagascar and the Seychelles with minute amounts. Cassia (*C. cassia*) is believed to be native to the borderlands between northern Vietnam and southern China, south of the Nanling mountain range where the ethnic people used its bark as

medicine and spice from “time immemorial” (S.-Y. Hu, 2005, p. 400). Some sources also mention Myanmar, but others refute this (see Haw, 2017). Cassia of various kinds is widely cultivated now in many countries and regions, including India, Indonesia, Laos, Malaysia, Taiwan, Thailand, Vietnam, and tropical and subtropical provinces on the south of China: Guangdong, Guangxi, Guizhou, and Yunnan, where it is indigenous, and Fujian, Hainan where it has been introduced to (Chennault, 2006; Ford et al., 2019). It is hard to find detailed statistics on production, because most indexes such as the *Food and Agriculture Organization Corporate Statistical DB (FAOSTAT)* do not differentiate between true cinnamon and cassia varieties. In any case, most of the world’s “cinnamon” is actually cassia grown on a large scale in Indonesia, Mainland China, and Vietnam. I believe that it is impossible to discuss cinnamon without including cassia as well, since the two are often interchanged — not only in discourse, but also in the shelves of stores and in kitchens around the world. Popular spice compendiums often blend information of cassia and cinnamon, or just ignore it altogether.

#### 4.8.2 The Identity of Cinnamon and Cassia

*Cinnamon* is often used as an umbrella term and includes both the true cinnamon of Sri Lanka, and cassia varieties of different origins. *Cassia* or *cassia cinnamon* is used as hypernym to refer to any cassia (sometimes explained as a lesser quality cinnamon), unless there is a need to specify the exact variety (e.g.: *Indonesian cassia*). There is a degree of perplexity between the two terms, and the material cinnamon was, and still is often confused with cassia. Evidently, the two products have a high degree of resemblance and their methods of procurement are almost identical; and so they are essentially the two main varieties of a spice product made from aromatic tree bark. Confusion in terminology also arises from the fact that while most of the European market differentiates between culinary cinnamon and cassia, North America does not. In Europe, Australia, New Zealand, and Mexico, where the higher quality — and definitely more expensive — true cinnamon is desired and preferred, sellers must indicate if the product is cinnamon or cassia. Meanwhile, United States laws (or rather the lack of certain regulations) allow for cassia to be labeled and marketed as “cinnamon”; distributors are not legally required to label their product accurately. Consequently, most of cinnamon sold in the United States is in fact cassia (Czarra, 2009, p. 124). Cassia is the main product of choice not only in the United States and Canada, but in South East Asia, and China as well, where it is a native spice (van Wyk, 2014, p. 104).

Different disciplines use varying levels of rigidity when it comes to the choice of names *cinnamon* and *cassia*. Wijesekera and Chichester (1978) consistently refers to *C. verum* as *cinnamon*, and to *C. cassia* as *cassia*, only discussing the cinnamon grown in Sri Lanka in their historical overview of the cinnamon industry, calling it “genuine” as opposed to cassia, a “substitute for cinnamon” which was flooding to London in large quantities starting from the second half of the 19<sup>th</sup> century, drastically lowering the prices for cinnamon from Ceylon (Wijesekera & Chichester, 1978). The practice of distinguishing the two as such is still commonly used and preferred among spice sellers, however one can find studies where researchers use the name “cinnamon” as an umbrella term for several species (see Rao & Gan, 2014), and it is not uncommon in everyday language use to confound the two,

especially when referring to cassia with the word *cinnamon*, as I mentioned above. The *Handbook of Herbs and Spices* (Peter, 2012) discusses cassia (and other similarly used *Cinnamomum* species under the chapter titled “Cinnamon”), indicating that even for industry professional circles, *cinnamon* is the bigger set, usually referring to all species of the genus, even if there is no botanical hierarchy between cinnamon and cassia. In short, it is customary to use the term *cinnamon* as a collective term, and only make a distinction between different kinds of cinnamon, when it is necessary.

The notion of Ceylon cinnamon being “real” and “genuine”, is apparent and could not be more obvious than in the botanical name *C. verum*, ‘true cinnamon’ in Latin, already explained. Dinesh et al. (2015) outright call cassia “the fake cinnamon” and an “avatar” of true cinnamon (which is a truly creative witticism in an Indian journal), clearly elevating cinnamon on a pedestal and treating cassia as a counterfeit version of the former. Other articles with titles, such as *Bastard Spice or Champagne of Cinnamon?* question the value of specific products and reflect our bias and tolerance toward a spice, which would be a great discussion for marketing experts (see Derkx et al., 2020). This conveniently leads us to the topic of adulteration, which I will briefly mention. Numerous academic articles explore methods to identify the botanical species from cinnamon samples, in order to verify origin and authenticate the quality of *Cinnamomum spp.* products, via analyzing chemical compounds. This unique set of methods rose from the need to expose substances (cinnamon powder, bark oil, leaf oil, etc.) in the spice industry, that are adulterated with other, cheaper, lower quality species purely for financial gain, representing an interesting interpolation of chemistry and geobotany into the spice business (see Ford et al., 2019). Even more interesting is that the confusion in terminology is evidently a problem in pharmacological experiments, as indicated by Oketch-Rabah et al. (2018).

The species prevalent in human consumption today can be seen in table 4.26 (Kawatra & Rajagopalan, 2015), with a minor source from additional species, such as *C. tamala*. According to Ulbricht et al. (2011), true cinnamon (*C. verum*) and cassia cinnamon (*C. cassia*) are the only two species of the genus that are approved medicinal herbs. The existence of an unrelated genus named *Cassia* in the pea family (*Fabaceae*) should be noted as well to avoid confusion. This genus used to be a wastebasket taxon, now containing many ornamental flowering plants, e.g. *Cassia fistula*, commonly known as “golden shower”.

For a comprehensive account on cinnamon, cassia, and other economically important products from the genus *Cinnamomum* such as camphor, please refer to the book by Ravindran et al. (2004).

#	taxon	common name(s)	native habitat
1	<i>C. verum</i>	cinnamon; true cinnamon; Ceylon cinnamon	Sri Lanka
2	<i>C. cassia</i>	cassia; cassia cinnamon; Chinese cinnamon	S. China
3	<i>C. burmannii</i>	Indonesian cinnamon; Batavia cinnamon; korintje	Sumatra; Java
4	<i>C. loureiroi</i>   <i>C. cassia</i>	Vietnamese cinnamon; Saigon cinnamon	Vietnam

Table 4.26 *Cinnamomum spp.* cultivated for commercial cinnamon and cassia, their common names and native regions.

#### 4.8.3 The History of Cinnamon and Cassia

During its several thousand years history of human use across various civilizations, knowledge and understanding regarding the origins of this once highly priced product often pertained to confusion and mystery, and the uncertainty between cinnamon and cassia is just one of the reasons. While our contemporary knowledge on the various cinnamon products and their sources are quite clear, the identity of cinnamon and cassia used and described in antiquity is quite puzzling. Cinnamon has been claimed to be found in pharaonic tombs of ancient Egypt (see Meyerhof and Sobhy in al-Ghāfikī, 1932, pp. 471, 475), and was mentioned by early Western authors, such as Herodotus, Theophrastus, Dioscorides, Strabo, and Pliny (Laufer, 1919, p. 541), and the poet Sappho. Haw (2017) suggests that the assumption that the ancient and modern products are identical is problematic, and that the cinnamon and cassia described by early Europeans were sourced from different species of aromatic barks from Africa, and — as a plant taxonomist and historian himself — gives a hint on a probable candidate. “There is no good reason to believe that cinnamon and cassia were traded to the western Indian Ocean and the Mediterranean region at any very early date.” — he writes, even if others claim the opposite, such as “The much-discussed identification of the biblical *kinnamom* as *Cinnamomum* has been clarified and confirmed by various scholars.” (M. Zohary, 1982, p. 202). In any case, cinnamon is one of the oldest of spices, its history reaches back millennia. It is mentioned in the Bible in the Old Testament, in Sanskrit texts, and early Chinese *materia medica*.

It is said that the Chinese used it as early as the 3<sup>rd</sup> millennium BC, and it reached the West in the 2<sup>nd</sup> millennium BC (Dietrich, 2004b), with evidence of Chinese poetry from the 2<sup>nd</sup> century BC (Dalby, 2000, p. 38). Archaeological discoveries from 2013 found 3000-year old cinnamaldehyde residue inside elegant flasks in a Phoenician site at Tel Dor, modern day Israel. The researchers stipulate that cinnamon was used to flavor wine, and that this could be evidence for early trade in aromatics from Southeast Asia (Namdar et al., 2013). Besides its traditional usage as a stomachic and carminative medicine, aiding digestion and promoting appetite (still popular as such), it is a popular culinary spice today (Ulbricht et al., 2011). However, this was not always the case; for example, in European antiquity cinnamon was not used in food preparation, it was rather burned like incense as an offering to the gods, sprinkled in the air as perfume, and mixed in healing decoctions and spiced wines. It has been reported by Pliny that after the death of Poppaea in 65 AD, (by the hands of?) her husband, emperor Nero, burned a year’s worth of supply of Rome’s cinnamon on his young wife’s funeral (Counts, 1996). The earliest mentions of cinnamon come from around the Mediterranean in 6<sup>th</sup> century BC. The *Exodus*, the second book of the Bible traditionally attributed to Moses, contains the following paragraph:

<sup>22</sup> The LORD spoke to Moses, <sup>23</sup> “Take the finest spices: of liquid myrrh five hundred shekels, and of sweet-smelling cinnamon half as much, that is, two hundred fifty, and two hundred fifty of aromatic cane, <sup>24</sup> and five hundred of cassia—measured by the sanctuary shekel—and a hin of olive oil, <sup>25</sup> and you shall make of these a sacred anointing oil blended as by the perfumer; it shall be a holy anointing oil. <sup>26</sup> With it you shall anoint the tent of meeting and the ark of the covenant <sup>27</sup> and the table and all its utensils and

the lampstand and its utensils and the altar of incense<sup>28</sup> and the altar of burnt offering with all its utensils and the basin with its stand;<sup>29</sup> you shall consecrate them, so that they may be most holy; whatever touches them will become holy.” (Exodus 30:22-29)<sup>91</sup>

This is a good demonstration of how important perfume and ointments were in early Judaistic rituals; while God is leading the Jews out of Egypt after the ten plagues, he methodically describes the expected sacrifices and rituals. If rightly prepared, these aromatics have the power to turn the things they touch sacred, and holy. Cassia appears in more mundane parts of the Bible as well, in the *Book of Ezekiel* the Hebrew prophet, who is attributed with the authorship of the chapter around the 6<sup>th</sup> century BC, gives his observations on the spice trade in Tyre (today on the coast of South Lebanon).

<sup>18</sup> Damascus traded with you for your abundant goods—because of your great wealth of every kind—wine of Helbon and wool of Zahar.<sup>19</sup> Vedan and Javan from Uzal[a] entered into trade for your wares; wrought iron, cassia, and sweet cane were bartered for your merchandise. (Ezekiel 27:18-20)<sup>92</sup>

In the chants of an unknown poet on a wedding addressing a royal bride, cinnamon is accompanied with myrrh and aloes(wood): “Your robes are all fragrant with myrrh and aloes and cassia [...]” (Psalm 45:8)<sup>93</sup>. This is similar to a poem about adultery showing that it was used as perfume, sprinkled on clothes and linen, emanating beauty and attracting love seekers.

<sup>17</sup> I have perfumed my bed with myrrh,  
aloes, and cinnamon.

<sup>18</sup> Come, let us take our fill of love until morning;  
let us delight ourselves with love.

<sup>19</sup> For my husband is not at home;  
he has gone on a long journey.

(Proverbs 7:17)<sup>94</sup>

<sup>17</sup> I have perfumed my bed with myrrh,  
aloes, and cinnamon.

<sup>18</sup> Come, let us take our fill of love until morning;  
let us delight ourselves with love.

<sup>19</sup> For my husband is not at home;  
he has gone on a long journey.

(Proverbs 7:17)<sup>95</sup>

<sup>91</sup><https://www.biblegateway.com/passage/?search=Exodus+30&version=NRSVUE>

<sup>92</sup><https://www.biblegateway.com/passage/?search=Ezekiel%2027%3A18%2D20&version=NRSVUE>

<sup>93</sup><https://www.biblegateway.com/passage/?search=Psalm%2045%3A8&version=NRSVUE>

<sup>94</sup><https://www.biblegateway.com/passage/?search=Proverbs%207%3A17&version=NRSVUE>

<sup>95</sup><https://www.biblegateway.com/passage/?search=Proverbs%207%3A17&version=NRSVUE>

The Bible mentions cinnamon four times, three in the Old Testament and one in the New Testament, and cassia four times, three in the Old Testament and one in the Apocrypha. Besides the Bible, our most important source is Sappho (d. c. 570 BC), a Greek poet from Lesbos. On an imaginary Troyan wedding she writes: “[...] and everywhere through the streets... wine bowls and goblets... myrrh, cassia, and frankincense mixed together.” (Rayor & Lardinois, 2014, p. 49). Cinnamon appears in *The Histories* of Herodotus, his 430 BC magnum opus about the Persian wars, which is considered the founding work of Western historiography.

“As for cinnamon, they gather it in an even stranger way. Where it comes from and what land produces it they cannot say, except that it is reported, reasonably enough, to grow in the places where Dionysus was reared. There are great birds, it is said, that take these dry sticks which we have learned from the Phoenicians to call cinnamon and carry them off to nests stuck with mud to precipitous cliffs, where man has no means of approach. The Arabian solution to this is to cut dead oxen and asses and other beasts of burden into the largest possible pieces, then to set these near the eyries and withdraw far off. The birds then fly down (it is said) and carry the pieces of the beasts up to their nests, while these, not being able to bear the weight, break and fall down the mountain side, and then the Arabians come and gather them up. Thus is cinnamon said to be gathered, and so to come from Arabia to other lands.” (Herodotus, 430 B.C.E./1921, p. 139)<sup>96</sup>

Besides the fabulous tales regarding the procurement of cinnamon, Herodotus explains that the Greeks learned the name from the Phoenicians, and that the source of the product is from Arabia.<sup>97</sup> Theophrastus (d. c. 287 BC) mentions cinnamon but remains vague about the origins (Arabia, Syria, or India). In his *Enquiry into Plants* he included accounts of plants found outside of Greece, such as the cotton-plant, banyan, pepper, cinnamon, myrrh, and frankincense based on reports of Alexander’s followers (Theophrastus, 1916, pp. xix, 323).

Arabia was the source of cinnamon not only in ancient times, but throughout the Middle Ages as well. The Arabs used the tubular sticks as spice, as well as its leaves and unripe berries. They were familiar with its medicinal values to “strengthen the stomach, liver and spleen”, and thought it to be effective against scorpion venom (Dietrich, 2004b). Whenever the “real” cinnamon arrived to the ports of the Red Sea, it was most likely at Aden (Dietrich, 2004b), one of the most important ports after the 11<sup>th</sup> century, but already important in the trade with India in the 1<sup>st</sup> century AD in the time of the *Periplus*. Western authors doubtful of Sri Lanka’s early cinnamon enterprise often give very later dates for its export: 14<sup>th</sup> century (Dietrich, 2004b), 1770s (Alam, 1994/2011, referring to William Dymock), but we have Arabic eyewitnesses for the opposite. Buzurg ibn Shahriyār (ca. 900–953/1908, p. 126) mentioned *al-qirfat al-sahilāniya* “Sinhalese bark” on his travels. A native of Ramhormoz, north of the port of Siraf (today Iran), Buzurg ibn Shahriyār was a Persian ship captain; his *Kitāb ‘ajāib al-Hind* [*The Book of the Marvels of India*] is one of our most important sources we have on 10<sup>th</sup>-century

<sup>96</sup>Hdt. 3.11 — <http://www.perseus.tufts.edu/hopper/text?doc=Hdt.+3.11&fromdoc=Perseus%3Atext%3A1999.01.0126>

<sup>97</sup>These mythical birds in Arabia are called “cinnamon gatherers” κινναμωμο-φόρος *kinnamōno-fóros* after Strabo and κινναμο-λόγος *kinnamo-lógos* after Pliny, or just simply κιννάμωμον *kinnámōmon* after Aristoteles.

Indian Ocean trade, his travels and stories also inspired the tales of Sindbad. A century before, (Ibn Khurdādhbih, ca. 870) also talks about cinnamon (*dārṣīnī*) as one of the economic products sold on the Indian Ocean route. For the Europeans, the source of cinnamon remained a mystery until the 16<sup>th</sup> century, and they had to buy it via Arab middlemen in Alexandria or elsewhere. In colonial times, the cinnamon export was so important in Sri Lanka that in the Dutch period (1602–1796), the colony's coat of arms featured three cinnamon bales, and an elephant holding a cinnamon branch (Hartemink, 1995).

For further details on the history of cinnamon, I recommend Dalby (2000)'s *Dangerous Tastes*.

#### 4.8.4 The Names of Cinnamon and Cassia

##### English

**Etymology 24.** English *cinnamon* ‘cinnamon’, (Middle English *sinamome*, *synamome*), ca. 1430 < French *cinnamome* ‘cinnamon’, (earlier *cynnamome*; also 16<sup>th</sup> c. *cinamonde*), 1211 < Latin *cinnamōnum* ‘cinnamon’, 1<sup>st</sup> c. AD < Ancient Greek κιννάμωμον *kinnámōmon* ‘cinnamon’, later refashioned as *kinnamon* after Latin *cinnamum/cinnamom*, which partly influenced the current English form (of Semitic origin), 5<sup>th</sup> c. BC; cf. cognates Coptic ΚΙΝΝΑΜΩΜΟΝ *kinnamomon* < Semitic\* \*qmwn ‘cinnamon’; cf. cognates Ancient Hebrew קִנְמָן *qināmōn*; Judeo-Aramaic ܩܻܻܻܻ *qnmw* < unknown<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *cinnamon*); TLFi (2012); C. T. Lewis and Short (1879); Beekes and van Beek (2010, p. 701); Klein (1987, p. 585); Rosól (2018)

*Cinnamon*, or more accurately one its countless Middle English spelling variants among *sinamome* or *cynamom*, were first attested in the 15<sup>th</sup> century (ca. 1430), and became relatively more frequent in the following 16<sup>th</sup> century (OED, “cinnamon”). It can be traced back to Ancient Greek and Hebrew with certainty, but not further. According to the OED, the English term was loaned from French *cinnamome* (attested in the 13<sup>th</sup> century as *cynnamome*)<sup>98</sup>, which comes from Latin *cinnamōnum*. The Latin word is a direct borrowing from the Greek κιννάμωμον *kinnámōmon* (since 5<sup>th</sup> century BC), which is in turn a Semitic loanword. According to Beekes and van Beek (2010, p. 701), (who is citing Herodotus), the Greek word comes from Phoenician. Herodotus wrote in the 3<sup>rd</sup> century BC that the word *kinnámōmon* was “taught” to the Greeks by the Phoenicians (Herodotus, 430 B.C.E./1921, p. 139)<sup>99</sup>, a Canaanite Semitic speaking seafaring people, originally from the Eastern Mediterranean, roughly around today’s Lebanon. According to Klein (1987, p. 585) however, the Greek is a loanword from Hebrew, and he observes that this word seems to be “of foreign origin”. Indeed, the Semitic root system does not support this type of native word form, but we have no further attestation to the origins of this word. Besides Biblical Hebrew קִנְמָן *qināmōn*, Semitic cognates are also attested in Judeo-Aramaic *qnmn/qnmwn* Samaritan Aramaic *qynmwn* and Syriac *qūnnāmā* (Rosól, 2018). The

<sup>98</sup> *Trésor de la Langue Française informatisé* (TLFi) — <https://www.cnrtl.fr/etymologie/cinnamome>

<sup>99</sup> Hdt. 3.11 — <http://www.perseus.tufts.edu/hopper/text?doc=Hdt.+3.11&fromdoc=Perseus%3Atext%3A1999.01.0126>

alteration of the Greek word ending (*kinnámōnon* > *kinnámōmon*) is probably due to folk-etymology, modelled after the **phytonym** ἄμωμον *ámōmon* ‘a spice plant’ (Beekes & van Beek, 2010; Klein, 1987).

*Amomum* is an spice of uncertain identity, featured in the writings of European antiquity but cannot be positively matched today. I have briefly introduced amomum in section 4.6, explaining that it most probably refers to black cardamom. Appearing in Pliny’s *Natural History*, it is “an aromatic shrub, from which the Romans prepared a costly, fragrant balsam”<sup>100</sup> and for the Greeks it denoted an Indian spice-plant: “Nepaul cardamom”.<sup>101</sup> This brings us is one of the popular theories one may find when searching for the origins and explanations of the word *cinnamon*, that it is made up of the combination of Κίνα *Kína* ‘China’ + ἄμωμον *ámōmon* ‘amomum’, as in ‘Chinese amomum’. This is somewhat analogous with the plant’s Persian name *dârčin* ‘cinnamon’ (lit. ‘Chinese tree’), which is a **Wanderwort** that have spread far and wide from South and Central Asia to the Balkans.

Another — seemingly rather far-fetched — theory is the presumed relatedness to Malay *kayu manis* ‘cinnamon’ (lit. ‘sweet wood’). Even a Google search for the etymology of cinnamon powered by Oxford Languages data does return Malay as possible etymon. This speculation (probably on the account of a similar consonant sequence) seemed to gain some traction with a reference work of Biblical Hebrew and Aramaic titled *A Hebrew and English Lexicon of the Old Testament*, commonly known as the Brown–Driver–Briggs (see Brown et al., 1906/1939, p. 890)<sup>102</sup>. “Prob. foreign wd., coming with the thing from remote E[ast]; cp. with Malay *kainamanis* by Röd, *kāyū mān̄s* Lewi [...]” — says the old dictionary guiding the reader further down the rabbit hole. As I mentioned above, cinnamon is attested in the Old Testament in three places<sup>103</sup>, among other spices, incense, and perfumes. I think the logic of the authors lay in that cinnamon was thought to be imported to the Middle East at the earliest of times from East Asia, and that if anyone could afford exotic spices coming through the hands of early Babylonian and Malay traders, King Solomon — who is considered to be the author of several Biblical books — must be one. To sum up, we have no way of knowing *cinnamon*’s origins for certain prior to Hebrew, only speculations.

Besides *kinnámōmon*, there is also κίνναμον *kínnamon* in Greek, a later, more rare form of the former, appearing first in the writings of Pliny. The current English form is in part derived from the Latin versions *cinnamum/cinnamon* refashioned after this.<sup>104</sup>.

**Etymology 25.** English *cassia*, ca. 1000 < Latin *casia* ‘id.’, 1<sup>st</sup> c. AD < Ancient Greek κασία *kasía* ‘id.’, 6<sup>th</sup> c. BC < Ancient Hebrew קְנֵן qənēn ‘a bark resembling cinnamon, but less aromatic, so called from being stripped off’, from *qṣa'* ‘to cut off, strip off bark’ (hapax legomenon in the Bible; Ps. 45:9)<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *cassia*); Rosól (2018); Beekes and van Beek (2010, p. 653); Klein (1987, p. 589)

<sup>100</sup>C. T. Lewis and Short, 1879, *amomum*.

<sup>101</sup>Liddell and Scott, 1843/1940, ἄμωμον.

<sup>102</sup>BDB — <https://mg.alhatorah.org/Dictionary/7076>

<sup>103</sup>Exodus 30:23; Proverbs 7:17; Song of Songs 4:14 — <https://www.biblegateway.com/quicksearch/?quicksearch=cinnamon&version=NRSVUE>

<sup>104</sup>Hoad, 2003, *cinnamon*.

The English word *cassia*, similarly to *cinnamon*, goes back to Latin. *Casia* (rarely *cassia*) is a direct borrowing from Greek κασία *kasiā*, occasionally with double sigma: κασσία *kassía* (OED, “cassia”). The Greek word, appearing first in Herodotus’s writings, once again is “an oriental loanword” and often explained as ‘wild cinnamon’, comparable to Hebrew קַשְׁתָּא *qəšṭā* and “Assyrian” *kasiā* (Beekes & van Beek, 2010, p. 653). Although Beekes and van Beek (2010) indicates that the word originally is Austro-Asiatic, there is no further elaboration there, and according to Welles (1934, p. 342) it is a Semitic loan-word. This conforms with the current popular theory that the source of the Greek term is the Hebrew word *qəšṭā*, literally meaning ‘peel’ i.e. “the peel of the plant, which is scraped off the tree” (Klein, 1987, p. 589). *Qəšṭā* derives from the root *q-ṣ-*, this Semitic root means “to cut, cut off; to scrape”, which clearly refers to the procurement of this spice, the peeling off the tree bark (Klein, 1987).<sup>105</sup> Not everyone subscribes to this inherited Semitic word theory, and there were wild speculations that the Biblical Hebrew word is a loan from Chinese 桂枝 *guìzhī* or 桂子 *guìzǐ* (which were not attested until the 11<sup>th</sup> and 14<sup>th</sup> centuries (Noonan, 2019, p. 197)). This words is a hapax legomenon in the Hebrew Bible, it occurs only once<sup>106</sup> in the plural form (*qəšṭōt*), mentioned in connection with myrrh and aloes, being used to perfume garments. It was probably prepared from the peeled bark of some cassia-like plant, as the Hebrew word suggests. (Noonan, 2019, p. 196) is sure that the cassia in the Bible is a spice from Arabia or Ethiopia, and not the cassia of today, trusting classical authors and citing that it appears with other Red Sea products such as myrrh, ivory, and the port of Ophir. He also thinks, that this word has to be a loanword from a language in this region. Although a hapax legomenon according to Klein (1987), *qəšṭā* also appears in Job 42:14 as a feminine proper name rendered usually as Keziah in English, who is the second daughter of Job (probably named after the fragrant spice tree). If we search English translations of the Bible, we can find three occurrences of ‘cassia’ as an aromatic substance — in agreement with the The Septuagint (Greek Old Testament) — however, two of these (Ex. 30:24; Ezek. 27:19) are translated from the word קִדְדָּה *qiddah*, “of uncertain origin; prob. a foreign word” — writes Klein<sup>107</sup>. In the *Encyclopaedia Judaica* (EJ), the tree kinds of cinnamon are identified in the Bible and Talmudic literature, according to the followings: (1) Cinnamon, Ceylonese; *Cinnamomum zeylanicum* [sic]; קִדְמֹן *qiddəm* aromatic tropical spice tree; Ex. 30:23; Prov. 7:17, et al. (2) Cinnamon, Chinese; *Cinnamomum cassia* [sic]; קִדְדָּה *qiddəd* aromatic tropical spice tree; Ex. 30:24; Ezek. 27:19. (3) Cinnamon, Indo-Chinese; *Cinnamomum laurei* [sic]; קִדְעָה *qiddəh* aromatic tropical spice tree; Ps. 45:9 (Feliks, 2007, vol. 16, p. 221).

Both words spread in Europe significantly via Latin, and especially with the spread of Christianity, through Medieval Latin. Words for cinnamon and cassia (cf. Musselman, 2012, p. 38) might be one of the few spice names that have spread to places where the spice itself have not reached yet. For example, *cassia* is attested in Old English and Middle English, but was not naturalized until the 16<sup>th</sup>

<sup>105</sup> Cognates are Aramaic קְטַת *qtat*, and Arabic قَطْعَة *qaṭṭa'*

<sup>106</sup> Ps. 45:8 — <https://www.biblegateway.com/passage/?search=Psalm%2045%3A8&version=NRSVUE>

<sup>107</sup> In Easton’s Bible Dictionary: “*qiddah*”, i.e., ‘split’. One of the principal spices of the holy anointing oil (Ex. 30:24), and an article of commerce (Ezek. 27:19). It is the inner bark of a tree resembling the cinnamon (q.v.), the *Cinnamomum cassia* of botanists, and was probably imported from India.” — <https://www.blueletterbible.org/search/dictionary/viewtopic.cfm?topic=ET0000734>

century.<sup>108</sup>.

#	Species	Name	Source
1	<i>Cinnamomum verum</i>	Ceylon cinnamon	van Wyk (2014)
2	<i>Cinnamomum verum</i>	cinnamon	van Wyk (2014)
3	<i>Cinnamomum verum</i>	true cinnamon	van Wyk (2014)

Table 4.27 Various names for cinnamon in English.

English names are concerned with two things regarding cinnamon: place of origin, and genuineness. Sometimes the *semantics* of these two overlap, especially if one is familiar with the qualities and grades associated with the source of the cinnamon. For those who know what these epithets actually mean, *Chinese cinnamon* should signify the same thing as *bastard cinnamon*, and *Ceylon cinnamon* is the same as *true cinnamon*. For the rest, all these names would just fall in the category of culinary cinnamon, and they can only infer further information from the meaning of the distinguishing words (*true*, *Ceylon*, *bastard*, *Chinese*, etc.). The phrase *bastard cinnamon* is not in frequent daily use anymore, but at some point it was important enough to explain it in dictionaries (cf. OED, “*bastard cinnamon*”)<sup>109</sup>. Attested in 1678, it was inspired by French <sup>†</sup>*cannelle bastarde*<sup>110</sup>, and was born during an English translation of a travelogue.

“After the Dutch had disposses’d the Portugals of whatever they had in Ceylan, they cast their eyes upon Cochin, in the Territories whereof grows the Bastard Cinnamon, which hinder’d the utterance<sup>111</sup> of Ceylan Cinnamon.” (Tavernier, 1678, p. 88)

As the quote shows, the phrase *bastard cinnamon*’s sole role is to stand opposed to *Ceylon/true cinnamon*, and if we think about the European maritime powers vying for power at this time, this dysphemism could be regarded as a negative marketing strategy as well; whoever owned Ceylon and the trade in *real* cinnamon, did not want others to have an attractive alternative supply from around the corner.

## Arabic

**Etymology 26.** Arabic قرفة *qirfa* ‘cinnamon’ [bark, rind], from *qarafa* ‘to peel, bark, derind’; Semitic root q-r-f (related to root q-l-f); cf. Amharic *kerefe*<sup>a</sup>

<sup>a</sup>Wehr (1976, p. 888) and Leslau (1991, p. 427)

qirfa In Modern Standard Arabic, cinnamon is known as قرفة *qirfa*, literally ‘rind, bark’.<sup>112</sup> *Qirfa*

<sup>108</sup>Hoad, 2003, cassia.

<sup>109</sup><https://www.oed.com/view/Entry/16044?redirectedFrom=bastard+cinnamon#eid1265820550>

<sup>110</sup>Coined in 1605 or before; now *cannelle bâtarde*

<sup>111</sup>The word *utterance*’s now obsolete meaning was: “the disposal of goods, commodities, etc., by sale or barter”

is not a modern word though, thanks to literary Arabic's rigid resistance to change, we can easily recognize cognates from the times of Classical Arabic and even before; e.g. Classical Syriac **ܩܠපܬ** *qlāptā* 'bark, peel, Hebrew **קַלְיָה** *qalippâ* 'id.', and many others (see Leslau, 1991, p. 427). When Herodotus mentioned cinnamon in his story with the giant cinnamon gatherer birds of Arabia (<http://www.perseus.tufts.edu/hopper/text?doc=Hdt.+3.111&fromdoc=Perseus%3Atext%3A1999.01.0126>), he used the word **κάρφος** *kárphos* 'dry stalk, dry sticks of cinnamon; twigs that birds use to build a nest'<sup>113</sup>. There is some speculation that this Greek word is a Semitic loan as well, but this is unfounded, and Beekes and van Beek (2010) stays silent on the matter; the related *káro* 'to dry' seems to be of Pre-Greek origin. The wildest fantasies I came across tried to connect this word with a Dravidian etymon, musing that this Semitic word might be a loanword from Tamil கருவா *karuvā* 'cinnamon'. But, the fact that the early Semitic root related to the concept of peeling is attested in several languages strongly goes against any idea of borrowing in this case. In the *Lisān al-‘Arab*, *al-qirfa* is defined as *dawā ma’rūf* 'a well-known drug/medicine'.<sup>114</sup>

**Etymology 27.** Arabic *dārṣīnī* دارصيني ‘cinnamon’ < Persian *dārčīnī* ‘cinnamon’ [Chinese wood], from Persian *dār* ‘wood’ + *cīn* ‘China’; cf. cognates Sanskrit *dāru* (PIE \*dóru) < Pahlavi \*dār ī čēnīg \**dār ī čēnīq* ‘cinnamon’, (cf. Armenian *daričenik*)<sup>a</sup>

<sup>a</sup>Wehr (1976, p. 311); Dietrich (2004b); Alam (1994/2011)

In Classical Arabic literature however, one can find another names for cinnamon, and the most important of those is دارصيني *dārṣīnī* or دارچين *dār ṣīnī*, a loanword from Persian *dārčīnī*, *darsini* (or دارچين *dār-i chīn*), literally meaning ‘Chinese wood’, seemingly referring to Chinese cinnamon. In Persian, *dār* is ‘tree; wood’<sup>115</sup>, while *chīn* is ‘China’ — arriving via Middle Persian *chīn*, via Sanskrit चीन *cīna*, likely originating from Old Chinese 秦 /*\*zin/*, after the Qin dynasty of ancient China. The latter half or *dārčīnī* went through Arabicization, rendering it *ṣīn* in Arabic.<sup>116</sup> The *-ī* suffix makes the adjective: ‘Chinese’.

As a loanword in Arabic, the word *dārṣīnī* must have been confusing for some people, and less confusing for others. After the eastward expansion of the Abbasid Caliphate consolidated, it was not uncommon for native Persian scholars to work and write in Arabic. One Persian bureaucrat and postmaster, Ibn Khurdādhbih ([ca. 870](#), p. 71), writing in the 9<sup>th</sup> century in his *Kitāb Al-Masālik Wa l-Mamālik*, mentions *dārṣīnī*, as one of the many products that are shipped to *al-Sīlā* [Korea] from other parts of East Asia.<sup>117</sup> He does not give any explanation on the name, in fact *dārṣīnī* is one of the least confusing ones, which might indicate that for a Persian speaker, the meaning was trivial.

<sup>112</sup>From *qarafa* ‘to peel, bark, derind’ (*Hans-Wehr: A Dictionary of Modern Written Arabic* (HW), “*qarafa*”); doublet of *qilf* and *qulāfa* ‘bark, rind’, from *qalafa* ‘to strip the bark of a tree’ (HW, “*qalafa*”)

<sup>113</sup> LSJ, “κάρφεα” — <https://www.perseus.tufts.edu/hopper/morph?l=ka%2Frfea&la=greek&can=ka%2Frfea&prior=ta&d=Perseus:text:1999.01.0125;book=3;chapter=11;section=2&i=1#Perseus:text:1999.04.0057;entry=ka/rfos-contents>

<sup>114</sup> Ibn Manzūr, 1290/1979, 3599.

## <sup>115</sup>PIE \*dóru

<sup>116</sup>There is no, /tʃ/, sound in Standard Arabic.

<sup>117</sup>Also transcribed as Ibn Khordadbeh, he is the first Western author that mentioned Korea.

On the other hand, Abū Ḥanīfah al-Dīnawarī (d. 895), a Persian polymath also writing in Arabic mentions *dārṣīnī* in his *Book of Plants*, but he is quite confused about the term *ṣīnī*, and associates with another (unidentified) drug called *ṣīnīn* (ad-Dīnawarī, 1974, p. 210). According to the *Encyclopaedia of Islam, Second Edition* (EI2) Ishāk b. Sulaymān al-Isrā'īlī (d. 955), a scholar from Egypt was the first to acknowledge that *dārṣīnī* comes from China.

**Etymology 28.** Arabic *salīkha* سليخة ‘cinnamon bark; cassia bark’ [peeled off, stripped off], from *salakha* ‘to pull off, strip off; skin, flay’; Semitic root s-l-kh; cf. cognates \*<sup>a</sup>

<sup>a</sup>Wehr (1976, p. 491)

Medieval Arabic pharmacognostic literature always makes a distinction between *dārṣīnī* and *salīkha* another substance, سليخة *salīkha*<sup>18</sup>, a term that has been associated with cassia (*C. cassia*) from early texts until today.

If *dārṣīnī* and *salīkha* are not identical, *dārṣīnī* must be a cinnamon from another source. Could it be the cinnamon from Sri Lanka? Documents from the Cairo Geniza show that Arab traders have purchased cinnamon from Ceylon in rather large quantities (sixty bags, each bag 100 pounds) in around 1140, calling it *qirfa sīlī* ‘Ceylon(?) cinnamon’ (Goitein & Friedman, 2008, p. 375) and we can presume it was the local product. I agree with Dietrich (2004b)’s opinion that the identity of the plant source “cannot be established with certainty”. Lev and Amar (2008, pp. 143–144) suggested that the three terms were used interchangeably, but in general *dārṣīnī* referred to both Ceylon cinnamon and Chinese cassia, whereas *qirfa* was Ceylon cinnamon, and *salīkha* was Chinese cassia. This could be close to the truth, but I would like to entertain Haw (2017)’s theory as well, who is convinced that “*salīkha* really refers to the genus *Cassia*”, and to the Chinese cassia, and that Herodotus, Theophrastus and Pliny were right when writing about ancient “cinnamon” coming from Africa, which Haw identifies with *Cassia abbreviata*, a tree native to East and South Africa.

The other problem is that according to our current understanding, Ceylon cinnamon was not exported from the island until a quite late date, “hardly before the 14<sup>th</sup> century” (Dietrich, 2004b), which agrees with the problems raised by Haw (2017). This sheds a cloud of uncertainty on every claim that ancient cinnamon mentioned by Greeks, Romans, and Arabs is the same as the cinnamon from Ceylon, and that what the Arabs knew and used early on were cinnamon from Asia or something else.

In the writings of Dioscorides from the 1<sup>st</sup> century AD, both classes of κινάμωμον *kinámōmon* and κασ(σ)ία *kas(s)īa* rind are listed, but he fails to mention their source (A'lām, 1994/2011). Muslim writers translating the Greek works from the 9<sup>th</sup> century rendered the classes as *dārṣīnī* and *salīkha* (A'lām, 1994/2011). Figure 4.12 shows a folio from a Greco-Islamic pharmacopoeia, where the heading right under the red stroke says: قينامون وهو الدارصيني *qīnāmāmūn wa-huwa l-dārṣīnī* ‘*Kīnāmāmon*, which is cinnamon’, shows that Arabic translators transcribed the Greek names for herbal remedies, even when they had their own terminology. The Islamicate scholarly world of scholars were closely familiar

<sup>18</sup>From *salakha* ‘to pull off, strip off; skin, flay’, after the method of peeling off a tree’s skin; <http://www.semiticroots.net/index.php?r=root/view&id=387>

with the Greek works, *dārṣīnī* seems to have indicated the same category as Greek *kinnámōmon*, and they knew a “whole range of kinds” of it.<sup>119</sup> Ibn al-Bayṭār (d. 1248), an Andalusian Arab physician, pharmacist, and botanist heavily relying on the writings of Dioscorides and Galen, listed the different kinds of cinnamon known under the category of *dārṣīnī* in his *Mufradāt*, citing Ishāk b. Sulaymān (Ibn al-Bayṭār, ca. 1248/1874, vol. I/2, p. 83, s.v. *dārṣīnī*). Dietrich (2004b) introduces these products listed by Ibn al-Bayṭār: Chinese cinnamon *dārṣīnī al-ṣīn* lit. ‘Chinese wood of China’, an inferior kind called *dār ṣūṣ*, the “real cinnamon rind” *al-qirfa ‘alā l-haqīqa*, the “clove-rind” *qirfat al-qurunful* [sic], the “pungent cinnamon” *al-hādd al-madhāq* lit. ‘the sharp of taste’, etc. The term *dārṣīnī* still exists in the Arabic scientific name for the genus *Cinnamomum*, and as a colloquial term without an emphatic /s/; دارسين (dārsīn) in some Khalijī (Gulf) Arabic dialects, where the Persian influence was always strong.

According to (A’lam, 1994/2011), some modern scholars have implied that ancient societies sourced their cinnamon from China overland, due to the interpretation of the name, but citing Laufer (1919)’s *Sino-Iranica*, there is no Sinological evidence to support this. I agree with the author here that if cinnamon came from Asia, it must have arrived via the sea trade with South India and Lanka. Yūḥannā bin Māsūya (d. 955), a contemporary of al-Isrā’īlī, mentioned three kinds of *qirfa*: *qirfat al-qaranful*, the best; *qirfa* that smelled like camphor; and *qirfa* that smelled like *dārṣīnī* (A’lam, 1994/2011).

Arabic names shown in table 4.28, similarly to English, focus geographical origin and genuineness, but also quality and grade. This shows us two things. First, people who were part of the spice trade and had some knowledge on it were also concerned about the source of the *real* cinnamon, not only the Europeans were actively trying to go and find it some centuries later. Second, there must have been several sources of “cinnamon”. It is not a secret that Arabia and neighboring East Africa had aromatic trees and shrubs, just think of myrrh and frankincense. It is not an impossible idea that words such as *qirfa* and *salīkha* — which literally meant ‘rind’ or ‘bark’ were sourced locally/regionally, and these terms were also applied to similar products arriving from Southeast Asia. As for *dārṣīnī*, it is without a doubt an eastern product. Terms, such as *dārṣīnī al-ṣīn* [*dārṣīnī* of China/Chinese *dārṣīnī*] also indicate that it was a category, rather than a specific kind of product.

## Chinese

The Chinese language does not have two different words for cinnamon and cassia, the term 肉桂 *ròuguì* [flesh-cinnamon] is used, referring to the ‘cassia bark’ of *C. cassia*, often just called “Chinese cinnamon” in English. Furthermore, one can come across 桂皮 *guìpí* [cinnamon-skin] ‘id.’, and S.-Y. Hu (2005, p. 399) also lists 官桂 *guānguì* [official-cinnamon] ‘id.’. The latter makes sense if we imagine the resemblance of the curled barks of cinnamon to the written scrolls of the officials (see Zhang & Unschuld, 2015, p. 732). 桂心 *guìxīn* [cinnamon-heart] ‘id.’ refers to the inner bark specifically.<sup>120</sup> Hu calls all these products — native to the mountainous regions of Vietnam and China borderlands — *cassia*, and she reiterates the notion introduced by (Ravindran et al., 2004), that Vietnamese and

<sup>119</sup>For more on the Arabic transmission of Dioscorides’s *Materia medica*, see Gutas (2012)

<sup>120</sup>In case of some cassia varieties, the outer barks could be used as well.

#	Species	Name	Tr.	Gloss	Source
1	<i>Cinnamomum spp.</i>	دارصيني	<i>dārṣīnī</i>	Chinese wood	Dietrich (2004b)
2	<i>Cinnamomum spp.</i>	قرفة	<i>qirfa</i>	bark, rind	Wehr (1976)
3	<i>Cinnamomum spp.</i>	قرفة القرنفل	<i>qirfat al-qurunful</i>	the bark of clove	Dietrich (2004b)
4	<i>Cinnamomum verum</i>	الدارصيني على الحقيقة	<i>al-dārṣīnī ‘alā l-haqīqa</i>	the real darsini	Dietrich (2004b)
5	<i>Cinnamomum verum</i>	القرفة على الحقيقة	<i>al-qirfa ‘alā l-haqīqa</i>	the real bark	Dietrich (2004b)
6	<i>Cinnamomum verum</i>	القرفة الأصلية	<i>al-qirfat al-aṣliyya</i>	the original bark	Wikipedia (n.d.)
7	<i>Cinnamomum verum</i>	القرفة السهيلانية	<i>al-qirfat al-sihilānīya</i>	Sinhalese bark	A'lam (1994/2011)

Table 4.28 Various names for cinnamon in Arabic.

Chinese cassia is the same, explaining that those that are exported from Saigon are called *Saigon cinnamon* in English, while the others transported to the south to Guangzhou and Hong Kong “have the trade name *cassia*” (S.-Y. Hu, 2005, p. 400). There is also 桂枝 *guìzhī* [cassia-branches] ‘cassia twigs’, which is a particular kind of cinnamon product unique to TCM, made up of the chopped up young branches of the cassia tree, and 桂子 *guìzǐ* [cassia-seeds] ‘cassia buds’ referring to the fruits. As for the other cinnamon products found outside of China, medicinal products from *C. burmannii* (root, bark, leaf), are called 隅香 *yīnxiāng* [yin-spice]<sup>121</sup> (S.-y. Hu, 1980/1999, p. 179). If Sri Lankan cinnamon must be expressed, 锡蘭肉桂 *xīlánròuguì* ‘Ceylon cinnamon’ is applicable,

In historical texts the character 桂 *guì*<sup>122</sup> referred to cinnamon/cassia. The Sinogram of *guì*, Old Chinese (OC) /\*kʷe:s/, is a phono-semantic compound made up of semantic 木 ‘tree’ + phonetic 圭 OC /\*kʷe:/. The first instance we are able to find in the corpus available in the CTP of *guì* is in the *Liji*, from the Warring States period (5<sup>th</sup> c.–221 BC):

曾子曰：「喪有疾，食肉酒，必有草木之滋焉。以為姜桂之謂也。」

Zeng-zi said, ‘When one during his mourning rites falls ill, and has to eat meat and drink spirits, there must be added the strengthening flavours from vegetables and trees;’

<sup>121</sup>From the feminine, dark, “negative” half of the yin and yang concept.

<sup>122</sup>CTP, “桂”—<https://ctext.org/dictionary.pl?if=en&char=%E6%A1%82>

meaning thereby ginger and cinnamon.<sup>123</sup>

Here too, we must be careful when identifying plants and plant products, because *guì* can also be the sweet-scented osmanthus. In the past, *guì* marked both cinnamon species from the laurel family (*Lauraceae*), and sweet osmanthus (from Greek *osme* ‘fragrant’ and *anthos*, ‘flower’), a fragrant flowering bush with tiny white flowers common all around East and mainland Southeast Asia, frequently found in city parks. Osmanthus (*Osmanthus fragrans* Lour.) — also called “sweet olive” and “tea olive” in English — is a species in the olive family *Oleaceae* (Pearlstine, 2022, p. 191), and today it is referred to as 桂花 *guìhuā* [osmanthus-flower] to make a distinction. The synonym 木犀 *mùxi* is said to come from the similarity of the bark’s striations and the rhinoceros’s horn (Chennault, 2006); another name is 九里香 *jiǔlǐxiāng*, lit. ‘fragrant-for-nine-li’<sup>124</sup>. Chennault (2006) uses reasoning along botanical lines, to find out if a line is about cinnamon or osmanthus. For example, if the *guì*-wood is used for temple-building, it must be cinnamon (osmanthus is a shrub, less suitable for construction); if the verse talks about the scent of white or red flowers, it is likely to concern osmanthus (only the bark and leaves are aromatic in case of cinnamon, and cinnamon flowers are always white as opposed to osmanthus, where some varieties have orange/reddish flowers). Osmanthus is used to season tea and it is an ingredient in pastries. An alcoholic beverage called *guìhuā* liquor also uses osmanthus tincture to flavour rice gin (S.-Y. Hu, 2005, p. 627). Osmanthus flower is important in Chinese culture — from legends, in poetry, and as a Buddhist symbol — and it is associated with the Mid-autumn Festival. Chennault (2006)’s essay on the identity of *guì* explores the use of *guì* in traditional — especially Buddhist — poetry, and clears the confusion between cinnamon and osmanthus in a Chinese literary context. The character 桂 *guì* appears in the *Shuowen Jiezi* and *Kangxi Zidian* dictionaries, as well as the *BCGM*, where it has been identified as *Cinnamomum cassia* (Zhang & Unschuld, 2015, p. 732).



Figure 4.12 Cinnamon tree in a 10<sup>th</sup>-century Arabic translation of Dioscorides’s *De Materia Medica*, a manuscript at the Oriental Collection of the University Library of Leiden (Shelfmark: Or. 289). This copy is from Samarkand, and dates to 1083, the time of the Karakhanids (Dioscorides, 1083, f. 9a)

<sup>123</sup> CTP — <https://ctext.org/pre-qin-and-han?searchu=%E6%A1%82>; translations from James Legge

<sup>124</sup> *Li* is an ancient measure of length, approximately equal to 500 meters.

#	Species	Name	Tr.	Gloss	Source
1	<i>Cinnamomum verum</i>	錫蘭肉桂	<i>xīlán ròuguì</i>	Ceylon-flesh-cinnamon	

Table 4.29 Various names for cinnamon in Chinese.

Chinese names are concerned with plant parts first and foremost. Even the modern Chinese distinction between the two basic meanings of *guì* (cinnamon/cassia and osmanthus) happens with the addition of other Chinese characters referring to the *guì*'s meat or flesh (also used for fruit pulp) if it is cinnamon, or its flower if it is osmanthus. As a native spice of China, we will not find loanwords for cinnamon.

### Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>cinnamon</i>		yes	OUP (n.d.)
1	Arabic	<i>dārṣīnī</i>	Chinese wood	yes	Wehr (1976)
2	Arabic	<i>qirfa</i>	bark, rind	no	Wehr (1976)

Table 4.30 Conventionalized names for cinnamon in English, Arabic, and Chinese, found in dictionaries.

To summarize, the two English quintessential names that cannot be broken down into further parts in English — *cinnamon* and *cassia* — are both loanwords arriving on similar pathways, and also *Wanderwörter*. From the three Arabic words that play an important role here, two — *qirfa* and *salīkha* — are native Semitic words, while *dārṣīnī* is a borrowing from Persian, which is the source language for many languages borrowing the name for cinnamon. As for Chinese, *guì* is the original Sinogram for cinnamon, and all further words are compounded with this character. In table 4.30, I listed the names that appear in modern dictionaries. One thing to notice here is that the further we are to the source of cinnamon and cassia geographically, the more likely it is for the name to be a loanword.

## 4.9 Clove

### ¶ 11. CLOVE

POWO

English: clove. Arabic: قرنفل qaranful. Chinese: 丁香 dīngxiāng [nail-spice]. Hungarian: szegfűszeg [nail-grass-nail].

Plant species:	<i>Syzygium aromaticum</i> (L.) Merr. & L.M.Perry (syn. <i>Eugenia aromatica</i> (L.) Baill.)
Family:	<i>Myrtaceae</i>
Plant part used:	dried flower buds
Region of origin:	Moluccas (Indonesia)
Cultivated in:	Indonesia, Malaysia, Tanzania
Color:	rich, reddish brown



(a) a



(b) b



(c) c

Figure 4.13 Clove .

### 4.9.1 The Botany, Origins, and Cultivation of Clove

### 4.9.2 The History of Clove

### 4.9.3 The Names of Clove

#### English

**Etymology 29.** English *clove*, ?ca. 1225 < Anglo-Norman *clow*, c.1200 < Old French *clou*, XII < Latin *clāvus* ‘nail’<sup>a</sup>

<sup>a</sup>;

#	Species	Name	Source
1	<i>Syzygium aromaticum</i>	clove	van Wyk (2014)

Table 4.31 Various names for clove in English.

#	Species	Name	Tr.	Gloss	Source
1	<i>Syzygium aromaticum</i>	كَبْشُ قَرَنْفُلٌ	<i>kabsh qaranful</i>	ram of cloves?	Baalbaki (1995)
2	<i>Syzygium aromaticum</i>	قرنفل	<i>qaranful</i>		Amar and Lev (2017)

Table 4.32 Various names for clove in Arabic.

### Arabic

### Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Syzygium aromaticum</i>	丁香	<i>dīngxiāng</i>	nail-spice	Kleeman and Yu (2010)
2	<i>Syzygium aromaticum</i>	雞舌香	<i>jīshéxiāng</i>	chicken-tongue-spice	DeFrancis (2003)

Table 4.33 Various names for clove in Chinese.

### Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>clove</i>		yes	OUP (n.d.)
1	Arabic	<i>kabsh qaranful</i>	ram of cloves?	no	Baalbaki (1995)
2	Arabic	<i>qaranful</i>		yes	Wehr (1976)
1	Chinese	<i>dīngxiāng</i>	nail-spice	no	Kleeman and Yu (2010)
2	Chinese	<i>jīshéxiāng</i>	chicken-tongue-spice	no	DeFrancis (2003)

Table 4.34 Conventionalized names for clove in English, Arabic, and Chinese, found in dictionaries.

**Etymology 30.** English gillyflower (1550s), < Middle English gilofre ‘gillyflower’ (XIV), originally ‘clove’ (c. 1300) < Old French girofle, gilofre ‘clove’ (XII) < Late Latin caryophyllum < Ancient Greek κάρυοφύλλον ‘clove, nut leaf, dried flower bud of clove tree’ < κάρυον ‘nut’ + φύλλον ‘leaf’

## 4.10 Coriander

### 12. CORIANDER

POWO

English: coriander; cilantro; Chinese parsley. Arabic: كزبرة kuzbara. Chinese: 芫荽 yánsui [lilac-coriander]. Hungarian: koriander; cigánypetrezselyem [gipsy-parsley].

Plant species: *Coriandrum sativum* L.

Family: Apiaceae/Umbelliferae

Plant part used: fruit; leaf

Region of origin: Mediterranean; W. Asia; India

Cultivated in: Argentina, India, Morocco, Romania, Spain, Yugoslavia

Color: light yellow



(a) a



(b) b

Figure 4.14 Coriander .

### 4.10.1 The Botany, Origins, and Cultivation of Coriander

Coriander (*Coriandrum sativum* L.), also known as cilantro and Chinese parsley, is an annual herb originating in Western Asia, with several cultivars consumed around the world. The fresh leaves are used as a culinary herb, popular in Asian, Latin American, and Portuguese cooking, while the dried fruits (“coriander seeds”) are used as a spice, mostly in India, the Middle East, and Europe (Davidson, 2014). We can essentially talk about two products from one plant, valued for their different culinary properties. The leaves (and the plant itself) are called *cilantro* in the Americas, but also referred to as *fresh coriander* and *coriander greens*. Coriander seeds (often just termed *coriander*) are in fact the plant’s fruits, and ground coriander is a major component of Indian curry powders and pickles. Although nowadays we consider coriander to be a culinary herb and spice and occasional ingredient in liqueurs, its historical role was tending towards a more medicinal one. Moreover, it was used in perfume making, and even in the traditional making of *confetti*<sup>125</sup>.

<sup>125</sup><https://archive.ph/20130414183247/http://www.foodinitaly.org/a-brief-history-of-confetti/>; <https://dictionary.cambridge.org/dictionary/italian-english/coriandolo>

Coriander is one of the earliest Old World pants used as a condiment (D. Zohary et al., 1988/2012). The exact origin of this ancient crop is hard to define, but the native range is usually set somewhere between the East Mediterranean through the Transcaucasus to Pakistan. We do not know for sure when the species reached the Indian subcontinent (Prance & Nesbitt, 2005), where it enjoys widespread popularity. Coriander and its cultivars have been slowly spread and introduced to most places in Eurasia and grows almost globally in both wild and cultivated forms for thousands of years now.<sup>126</sup> *Sativum* (Latin for ‘sown, planted’) in the binomial name is a good indicator of this as well.

Coriander and its use have been documented in antiquity, but linguistic and archaeological evidence points to an even longer history. D. Zohary et al. (1988/2012, p. 163) gives a detailed list of archeobotanical findings, the oldest one of which dates to roughly eight thousand years ago, found in what is today Israel and Palestine. Coriander was also found in Egypt; remnants of desiccated coriander mericarps in Tutankhamun’s tomb (died 1323 BC) are proof for trade or cultivation by the ancient Egyptians (D. Zohary et al., 1988/2012). We know from the Ebers Papyrus – written around 1550 BC, considered amongst the oldest extant medical documents in the world – that the Egyptians used coriander in their medicinal practices (Prance & Nesbitt, 2005). An herbal remedy for headache from these ancient papyri is as follows:

“ANOTHER REMEDY WHICH THE GODDESS ISIS PREPARED FOR THE GOD RA TO DRIVE OUT  
THE PAINS THAT ARE IN HIS HEAD!

Berry-of-the-Coriander — I  
Berry-of-the-Poppy-plant — I  
Wormwood — I  
Berry-of-the-sames-plant — I  
Berry-of-the-Juniper-plant — I  
Honey — I

Make into one, mix with Honey, and smear therewith in order to make him well forthwith. When this remedy is used by him against all illnesses in the head and all sufferings and evils of any sort, he will instantly become well.” Ebers Papyrus (ca. 1550 B.C.E./1930, p. 40)

Coriander was familiar to the bronze age Greeks as well, recorded on Linear B tablets from as early as 2000 BC. According to Chadwick (1976), coriander – reconstructed as *koriadnon* – must have been grown in both Mycenae and Knossos (on Crete) in considerable amounts, since the epigraphs refer to vast quantities. A tablet found in Pylos for example mentions 576 liters of coriander given to a perfume-maker. Later in antiquity, ancient Greek physicians Hippocrates and Dioscorides mentioned the medicinal properties of coriander, around 400 BC and 65 AD, respectively. Coriander was introduced to England by the Romans, and in 812 Charlemagne ordered its subjects to grow it on the farms of the Holy Roman Empire (Prance & Nesbitt, 2005). It was also one of the first herbs to be introduced to

<sup>126</sup>For more details on the plant’s distribution, please refer to the Plants of the World Online (POWO) database at: <https://powo.science.kew.org/taxon/840760-1#distribution-map>. Retrieved March 10, 2022.

the American colonies, by 1670 it was found in Massachusetts. Due to their relative abundance and widespread distribution, coriander seeds never became a pricey commodity during the spice trade, and as an herb the value is in the freshness of the leaves: it is best when used locally. Nevertheless, the coriander seed world trade total value was at US\$192 million in 2019.<sup>127</sup>

#### 4.10.2 The History of Coriander

#### 4.10.3 The Names of Coriander

The word *coriander* entered English in the 14th century via Old French *coriandre*, from Latin *coriandrum*. The Latin word is a borrowing from Greek *koriannon*, a variant of *koriandron*, of uncertain etymology. A shortened version of *korion* also exists, among others. It is often repeated in both popular and scientific literature that the name of coriander comes from the Greek word *koris* ‘bug, bedbug’ (*Cimex lectularius*), for its strong smell of the unripe fruit or the foliage (cf. Harper, n.d.-a). According to most contemporary writers, this idea is first promoted by Pliny the Elder (AD 23/24–79), some even purporting that Pliny named the plant after the stinking bug (Cumo, 2013; O’Connell, 2016; Prance & Nesbitt, 2005) (((O’Connell, 2016, p. 87; Cumo, 2013, p. 318–319; Prance & Nesbitt, 2005, p. 152))). Pliny mentions coriander multiple times in remedies, stating that the best quality comes from Egypt. However, his monumental work, the *Natural History* (Pliny the Elder, 77/1855) does not contain any statement of referring to bugs or the name, regarding coriander. The bedbug connection is not often discussed by lexicographers, and dictionaries generally do not endorse it (except *Merriam-Webster’s Unabridged*). It seems to be a sort of false etymologization, taken for granted and copied for centuries, reaching as far as a statement in *Encyclopaedia Britannica* (1911), although not without reason.

Coriander contains the same aldehydes a stink bug (*Halyomorpha halys*) does, in fact the odor of the stink bug is often likened to that of coriander and (McGee, 2010), and a bed bug infestation reportedly has a similar olfactory experience (Davidson, 2014). One of the reasons for coriander’s divisive nature is that not all of us perceive these chemicals the same way. Opposing opinions on the smell and benefits of it go back to the Middle Ages, arguments or giants, such as Galen (129–216) and Ibn Sina (c. 980–1037) for and against it were reported hundreds of years later (cf. Parkinson, 1640). The hatred is so strong from some people, that a series of websites and social media groups are dedicated to it today, under slogans to the effect of “I HATE CILANTRO!” — plus, the term *cilantrophobe* exists. All this has to do with our predisposed genetic differences in perceiving its sensory qualities, and some sources report on Europeans’ (i.e. non-traditional coriander consumers) strong aversive reactions (Eriksson et al., 2012). It is also to be noted that the fruits of coriander slightly resemble the appearance of a bedbug as well, and we can speculate that this has also strengthened the connection. Anthropologist Leach (2001) retraced the hateful remarks to French and English garden manuals from around the 1600s. Consulting the Google Books Ngram Viewer (Michel et al., 2011), the first claim of coriander’s name deriving from koris in English is from 1640, in John Parkinson’s paramount *Theatrum Botanicum* (Parkinson, 1640, pp. 918–919). Other botanists before him also rushed to mention coriander’s stinking character, although not connecting it with the derivation of

<sup>127</sup>Data from OEC <https://oec.world/en/profile/hsg2/coriander-seeds>. Retrieved March 10, 2022.

its name. These include John Gerard in his 1597 *The Herball, or Generall Historie of Plantes* (p. 859) – who mostly plagiarised the Flemish father of botany, Rembert Dodoens and his 1586 work *A nievve herball, or, Historie of plantes* (p. 313), calling it a “very stinking herbe”. In the following centuries both British and American botanists perpetuated this putative word origin. The Mycenaean Greek forms written in Linear B are recorded as ko-ri-ja-do-no /korihadnon/ and ko-ri-a2-da-na /korihadna/. Beekes and van Beek (2010, p. 754) suggest a pre-Greek origin, citing the -dn- cluster, and dismisses both the folk etymologization by Frisk (1960–1972/2021) Frisk (1960/2021) and a possible connection to Akkadian *huri’ānu* ‘coriander’ proposed by Szemerényi (1971). It is more likely then, that those who already disliked coriander (in this case, 16–17<sup>th</sup>-century European botanists) played on the koris-korion link, and arbitrarily conformed the explanation of its name for some personal justification. Coriander’s synonym, cilantro, is a doublet of coriander. It comes via Spanish culantro from the Late Latin *coliandrum* a variant of the classical *coriandrum*. The name cilantro entered English usage relatively late in 1907 (Harper, n.d.-a) and it usually refers to the fresh leaves people use as garnish. Its use is restricted to North and Latin America, mainly due to the herb’s rise in popularity with the emergence of Mexican cuisine in the United States, bringing the word cilantro with it. (Culantro now is used for an indigenous Latin American herb (*Eryngium foetidum*), also known as long coriander.)

As for the alternative name Chinese parsley, it refers to the leaves as well, never used to the seeds. Some authors and even authoritative encyclopedias presume that the name Chinese parsley is used in China/the Orient, which is a rather silly assumption, since geographic designations are not likely epithets to be used internally (cf. Davidson, 2014; O’Connell, 2016). The notion to relate coriander to some type of parsley is not far-fetched, the leaves look very similar to other herbs in the *Apiaceae* family (parsley, dill, anise, fennel, etc.). Back to the term Chinese parsley, it apparently emerged in New York at the turn of the century. The phrase first appears in an 1832 United States court document, listing the items of a Chinese grocer, and later in an 1854 work titled *The Transactions of the Royal Hawaiian Agricultural Society*, both without explanation. The first truly interesting story featuring Chinese parsley was an article in Frank Leslie’s Popular Monthly, Volume 35 from 1893. The article, A celestial farm on Long Island, introduces how Chinese immigrants have set up farms in the Astoria neighborhood of Queens, in New York City (Seitz, 1893). The article also contains illustrations, the prices for Chinese vegetables at the time, and identifies Chinese parsley as “yen sai”<sup>128</sup> in Chinese. Hence, it seems plausible that New Yorkers familiarized themselves with the herb from these Chinese farms and this is how the name gained some popularity.

## English

**Etymology 31.** English *coriander* < Old French *coriandre* < Latin *coriandrum* < Ancient Greek *koriannon;-dron<sup>a</sup>*

<sup>a</sup>;

<sup>128</sup> 兼 蔬 yán sui

#	Species	Name	Source
1	<i>Coriandrum sativum</i>	Chinese parsley	van Wyk (2014)
2	<i>Coriandrum sativum</i>	cilantro	van Wyk (2014)
3	<i>Coriandrum sativum</i>	coliander	OUP (n.d.)
4	<i>Coriandrum sativum</i>	coriander	van Wyk (2014)
5	<i>Coriandrum sativum</i>	coriander-seed	OUP (n.d.)
6	<i>Coriandrum sativum</i>	dhania	OUP (n.d.)

Table 4.35 Various names for coriander in English.

### Arabic

#	Species	Name	Tr.	Gloss	Source
1	<i>Coriandrum sativum</i>	كُزبرة	<i>kuzbara</i>		Wehr (1976)

Table 4.36 Various names for coriander in Arabic.

### Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Coriandrum sativum</i>	胡荽	<i>húsuī</i>	barbarian-coriander	Laufer (1919)
2	<i>Coriandrum sativum</i>	香菜	<i>xiāngcài</i>	fragrant-vegetable	S.-Y. Hu (2005)
3	<i>Coriandrum sativum</i>	香茜	<i>xiāngqiàn</i>	fragrant-madder	Wikipedia (n.d.)
4	<i>Coriandrum sativum</i>	芫茜	<i>yánqiàn</i>	lilac-madder	Wikipedia (n.d.)
5	<i>Coriandrum sativum</i>	芫荽	<i>yánsuī</i>	lilac-coriander	S.-Y. Hu (2005)

Table 4.37 Various names for coriander in Chinese.

### Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>Chinese parsley</i>		no	OUP ( <a href="#">n.d.</a> )
2	English	<i>cilantro</i>		yes	OUP ( <a href="#">n.d.</a> )
3	English	<i>coliander</i>		yes	OUP ( <a href="#">n.d.</a> )
4	English	<i>coriander</i>		yes	OUP ( <a href="#">n.d.</a> )
5	English	<i>coriander-seed</i>		no	OUP ( <a href="#">n.d.</a> )
6	English	<i>dhania</i>		yes	OUP ( <a href="#">n.d.</a> )
1	Arabic	<i>kuzbara</i>		yes	Wehr ( <a href="#">1976</a> )
1	Chinese	<i>húsuī</i>	barbarian-coriander	yes	DeFrancis ( <a href="#">2003</a> )
2	Chinese	<i>xiāngcài</i>	fragrant-vegetable	no	MDBG ( <a href="#">n.d.</a> )
3	Chinese	<i>yánsuī</i>	lilac-coriander	no	MDBG ( <a href="#">n.d.</a> )

Table 4.38 Conventionalized names for coriander in English, Arabic, and Chinese, found in dictionaries.

## 4.11 Cumin

### 13. CUMIN

POWO

English: cumin. Arabic: كمون *kammūn*. Chinese: 孜然 *zīrán*. Hungarian: *római kömény* [Roman cumin].

---

Plant species:	<i>Cuminum cyminum</i> L.
Family:	<i>Apiaceae/Umbelliferae</i>
Plant part used:	fruit
Region of origin:	W. & C. Asia; India
Cultivated in:	India, Iran, Lebanon
Color:	light brown



Figure 4.15 (*Cuminum cyminum*). Credit: Aromatiques.

#### 4.11.1 The Botany of Cumin

#### 4.11.2 The History of Cumin

#### 4.11.3 The Names of Cumin

English

**Etymology 32.** English *cumin*, Middle English *cumin*, *comin* was either from French (like Middle Dutch *comijn*, Dutch *komijn*), or altered from Old English *cymen* after French. (Old English *cymen*); cf. cognates Old High German *chumin*, *cumin*, also *chumil* (Middle High German *kümel*, German *kümmel*), Swedish *kummin*, Danish *kummen*. The word has also come down in the Romanic languages, Italian *cumino*, *comino*, Spanish *comino*, Portuguese *cominho*, Old French *cumin*, *comin*. < Latin *cūmīnum* ‘id.’ < Ancient Greek κύμηνον *kúmēnon* ‘id.’, The Greek κύμηνον is supposed to have been a foreign word, cognate in origin with the Semitic names < Semitic\* \**kmn* ‘id.’; cf. cognates Arabic *kammūn*; Hebrew *kammōn*; Akkadian *kamūnu*<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. cumin);

#	Species	Name	Source
1	<i>Cuminum cyminum</i>	cumin	van Wyk (2014)
2	<i>Cuminum cyminum</i>	cumin seed	van Wyk (2014)

Table 4.39 Various names for cumin in English.

Arabic

a

#	Species	Name	Tr.	Gloss	Source
1	<i>Cuminum cyminum</i>	كمون	<i>kammūn</i>		Wehr (1976)
2	<i>Cuminum cyminum</i>	سنوت	<i>sannūt</i>		Lane (1863)

Table 4.40 Various names for cumin in Arabic.

## Chinese

**Etymology 34.** Mandarin Chinese 孜然 *zīrán* ‘cumin’, modern loan from Uyghur (the historic term is 蒔蘿 from Middle Persian \*zīra during Tang dynasty) < Uyghur ئىزىز *zirä* ‘cumin’ < Persian زیرا *zīra* ‘cumin’, distantly related to Sanskrit *jīraka* (zire-ye siyāh [black cumin] ‘caraway’; zire-ye sabz [green cumin] ‘cumin’); cf. cognates Sogdian *zyr’kk* /zīrē/; Hindi-Urdu *zīrā* <? Sanskrit जीरा *jīra* ‘cumin’; cf. Hindi जीरा *jīrā*; English *jeera*<sup>a</sup>

<sup>a</sup>liu\_hanyu\_1985Laufer (1919, p. 383) and Sulaiman (2020, p. 45); Schwarz (1992, p. 561); Steingass (1892, p. 634); McGregor (1993, p. 375)

#	Species	Name	Tr.	Gloss	Source
1	<i>Cuminum cyminum</i>	茴香籽	<i>huíxiāngzǐ</i>	hui-spice-seed	MDBG (n.d.)
2	<i>Cuminum cyminum</i>	枯茗	<i>kūmíng</i>	withered-tea	MDBG (n.d.)
3	<i>Cuminum cyminum</i>	羅馬葛縷子	<i>luómǎ gělǚzǐ</i>	Roman-caraway	
4	<i>Cuminum cyminum</i>	馬芹子	<i>mǎqínzi</i>	horse-celery-seed	
5	<i>Cuminum cyminum</i>	蒔蘿	<i>shíluó</i>	dill-turnip	Laufer (1919)
6	<i>Cuminum cyminum</i>	小茴香	<i>xiǎohuíxiāng</i>	small-hui-spice-seed	Laufer (1919)
7	<i>Cuminum cyminum</i>	孜然	<i>zīrán</i>		MDBG (n.d.)
8	<i>Cuminum cyminum</i>	孜然芹	<i>zīránqín</i>	cumin-celery	S.-Y. Hu (2005)
9	<i>Cuminum cyminum</i>	阿拉伯茴香	<i>ālābó huíxiāng</i>	Arabian fennel	MDBG (n.d.)
10	<i>Cuminum cyminum</i>	安息茴香	<i>ānxī huíxiāng</i>	Parthian fennel	MDBG (n.d.)
11	<i>Cuminum cyminum</i>	歐蒔蘿	<i>ōu shíluó</i>	European dill	MDBG (n.d.)

Table 4.41 Various names for cumin in Chinese.

## Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>cumin</i>		yes	OUP (n.d.)
2	English	<i>cumin seed</i>		no	OUP (n.d.)
1	Arabic	<i>kammūn</i>		yes	Wehr (1976)
1	Chinese	<i>huíxiāngzǐ</i>	hui-spice-seed	no	MDBG (n.d.)
2	Chinese	<i>kūmíng</i>	withered-tea	yes	MDBG (n.d.)
3	Chinese	<i>shíluó</i>	dill-turnip	yes	Kleeman and Yu (2010)
4	Chinese	<i>zīrán</i>		yes	MDBG (n.d.)
5	Chinese	<i>zīránqín</i>	cumin-celery	no	MDBG (n.d.)
6	Chinese	<i>ālābó huíxiāng</i>	Arabian fennel	no	MDBG (n.d.)
7	Chinese	<i>ānxī huíxiāng</i>	Parthian fennel	no	MDBG (n.d.)
8	Chinese	<i>ōu shíluó</i>	European dill	no	MDBG (n.d.)

Table 4.42 Conventionalized names for cumin in English, Arabic, and Chinese, found in dictionaries.

#### 4.11.4 Dill

##### 14. DILL

POWO

English: *dill*. Arabic: شبت *shibitt*. Chinese: 茴蘿 *shíluó*. Hungarian: *kapor*.

Plant species:	<i>Anethum graveolens</i> L.
Family:	<i>Apiaceae/Umbelliferae</i>
Plant part used:	fruit; leaf
Region of origin:	Nort Africa; West Asia
Cultivated in:	India
Color:	greyish brown



(a) a



(b) b

Figure 4.16 Dill .

#### 4.11.5 The Botany of Dill

#### 4.11.6 The History of Dill

#### 4.11.7 The Names of Dill

##### English

**Etymology 35.** English *dill*, ulterior derivation unknown, a. 700; cf. cognates Old Low German *dilli*, Dutch *dille*, Old High German *tilli*, Middle High German *tille*, German *dill*, *dille*, Danish *dild*, Swedish *dill* < unknown \*<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *dill*)

#	Species	Name	Source
1	<i>Anethum graveolens</i>	dill	van Wyk (2014)
2	<i>Anethum graveolens</i>	dill-seed	OUP (n.d.)
3	<i>Anethum graveolens</i>	Indian dill	van Wyk (2014)

Table 4.43 Various names for dill in English.

#	Species	Name	Tr.	Gloss	Source
1	<i>Anethum graveolens</i>		شبت	<i>shibithth</i>	Lane (1863)

Table 4.44 Various names for dill in Arabic.

#	Species	Name	Tr.	Gloss	Source
1	<i>Anethum graveolens</i>	蒔蘿	<i>shíluó</i>	dill-turnip	
2	<i>Anethum graveolens?</i>	土茴香	<i>tǔhuíxiāng</i>	earth-fennel	

Table 4.45 Various names for dill in Chinese.

### Arabic

### Chinese

### Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>dill</i>		yes	OUP (n.d.)
2	English	<i>dill-seed</i>		no	OUP (n.d.)
1	Arabic	<i>shibithth</i>		yes	Lane (1863)

Table 4.46 Conventionalized names for dill in English, Arabic, and Chinese, found in dictionaries.

## 4.12 Fennel

### 15. FENNEL

POWO

English: *fennel*. Arabic: شمار *shamar*. Chinese: 茴香 *huíxiāng* [hui-spice]. Hungarian: édeskömény [sweet-cumin]; ánízskapor [anise-dill].

Plant species:	<i>Foeniculum vulgare</i> Mill.
Family:	<i>Apiaceae/Umbelliferae</i>
Plant part used:	fruit; leaf
Region of origin:	Mediterranean; W. Asia; India
Cultivated in:	Argentina, Bulgaria, Germany, Greece, India, Lebanon
Color:	light green to light brown



(a) a

Figure 4.17 Fennel .

### 4.12.1 The Botany of Fennel

### 4.12.2 The History of Fennel

### 4.12.3 The Names of Fennel

#### English

**Etymology 36.** English *fennel*, a. 700 < Old English *fenol*, a. 700 < Latin *faeniculum*, via Vulgar Latin *fēnōclum*, *fēnuclum* substituted for classical Latin *faeniculum*, diminutive of *faenum* hay; cf. Old French *fenoil* (modern French *fenouil*), Provençal *fenolh*, Italian *finocchio*, Spanish *hinojo*.<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *fennel*);

#	Species	Name	Source
1	<i>Foeniculum vulgare</i>	fennel	van Wyk (2014)
2	<i>Foeniculum vulgare</i>	fennel-seed	OUP (n.d.)
3	<i>Foeniculum vulgare</i>	Indian fennel	van Wyk (2014)
4	<i>Foeniculum vulgare</i>	sweet fennel	van Wyk (2014)

Table 4.47 Various names for fennel in English.

#	Species	Name	Tr.	Gloss	Source
1	<i>Foeniculum vulgare</i>		بسباس	<i>basbās</i>	Wehr (1976)
2	<i>Foeniculum vulgare</i>		رازيانج	<i>rāzyānj</i>	
3	<i>Foeniculum vulgare</i>		شمر	<i>shamar</i>	Wehr (1976)
4	<i>Foeniculum vulgare</i>		شمرة	<i>shamra, shumra</i>	Wehr (1976)
5	<i>Foeniculum vulgare</i>		شمار	<i>shamār</i>	Wehr (1976)
6	<i>Foeniculum vulgare</i>		سنوت	<i>sunūt</i>	

Table 4.48 Various names for fennel in Arabic.

## Arabic

## Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Foeniculum vulgare</i>	欒香	<i>huáixiāng</i>	huai-spice	
2	<i>Foeniculum vulgare</i>	茴香	<i>huíxiāng</i>	hui-spice	Kleeman and Yu (2010)
3	<i>Foeniculum vulgare</i>	甜茴香	<i>tiánhuíxiāng</i>	sweet-fennel	
4	<i>Foeniculum vulgare</i>	小茴香	<i>xiǎohuíxiāng</i>	small-anise	

Table 4.49 Various names for fennel in Chinese.

## Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>fennel</i>		yes	OUP (n.d.)
2	English	<i>fennel-seed</i>		no	OUP (n.d.)
3	English	<i>Indian fennel</i>		no	OUP (n.d.)
4	English	<i>sweet fennel</i>		no	OUP (n.d.)
1	Arabic	<i>basbās</i>		yes	Wehr (1976)
2	Arabic	<i>shamar</i>		yes	Wehr (1976)
3	Arabic	<i>shamra, shumra</i>		yes	Wehr (1976)
4	Arabic	<i>shamār</i>		yes	Wehr (1976)
1	Chinese	<i>huíxiāng</i>	hui-spice	no	Kleeman and Yu (2010)

Table 4.50 Conventionalized names for fennel in English, Arabic, and Chinese, found in dictionaries.

#### 4.12.4 Fenugreek

##### 16. FENUGREEK

POWO

English: *fenugreek*. Arabic: حلبية *hulba*. Chinese: 胡蘆巴 *húlúbā*. Hungarian: *görögszéna* [greek-hay].

Plant species:	<i>Trigonella foenum-graecum</i> L.
Family:	<i>Fabaceae/Leguminosae</i>
Plant part used:	seed; leaf
Region of origin:	W. Asia
Cultivated in:	India
Color:	mustard yellow seeds



(a) a



(b) b

Figure 4.18 Fenugreek .

#### 4.12.5 The Botany of Fenugreek

#### 4.12.6 The History of Fenugreek

#### 4.12.7 The Names of Fenugreek

##### English

**Etymology 37.** English *fenugreek*, in old English from Latin, in Middle English and later from French < French *fenugrec* < Latin *faenugraecum* [Greek-hay], named *faenum Graecum* ‘Greek hay’ by the Romans<sup>a</sup>

<sup>a</sup>

#	Species	Name	Source
1	<i>Trigonella foenum-graecum</i>	fenugreek	van Wyk (2014)
2	<i>Trigonella foenum-graecum</i>	fenugreek-seed	OUP (n.d.)

Table 4.51 Various names for fenugreek in English.

#	Species	Name	Tr.	Gloss	Source
1	<i>Trigonella foenum-graecum</i>		حلبة	<i>hulba</i>	Lane (1863)

Table 4.52 Various names for fenugreek in Arabic.

### Arabic

### Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Trigonella foenum-graecum</i>	胡蘆巴	<i>húlúbā</i>	barbarian-reeds-ba	Kleeman and Yu (2010)

Table 4.53 Various names for fenugreek in Chinese.

### Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>fenugreek</i>		yes	OUP (n.d.)
2	English	<i>fenugreek-seed</i>		no	OUP (n.d.)
1	Chinese	<i>húlúbā</i>	barbarian-reeds-ba	yes	Kleeman and Yu (2010)

Table 4.54 Conventionalized names for fenugreek in English, Arabic, and Chinese, found in dictionaries.

## 4.13 Ginger

### 17. GINGER

POWO

English: *ginger*. Arabic: زنجيل *zanjabil*. Chinese: 薑 *jiāng*. Hungarian: *gyömbér*.

Plant species:	<i>Zingiber officinale</i> Roscoe
Family:	<i>Zingiberaceae</i>
Plant part used:	rhizome
Region of origin:	South East Asia; India (secondary)
Cultivated in:	India, Jamaica, Nigeria, Sierra Leone
Color:	light yellow when fresh, beige when powdered



(a) a



(b) b

Figure 4.19 Ginger .

### 4.13.1 The Botany of Ginger

### 4.13.2 The History of Ginger

### 4.13.3 The Names of Ginger

#### English

**Etymology 38.** English *ginger*, ca. 925 < reinforced by Old French *gingivere*, *gingibre* ‘ginger’ < Medieval Latin *gingiber* ‘ginger’ < Latin *zingiber* ‘ginger’ < Ancient Greek ζιγγίβερις *ziggiberis* ‘ginger’ < Pali *singivera* ‘ginger’; cf. cognates Sanskrit शृङ्गवेर *śṛṅgavera* < Dravidian\* \**cinki-wēr* ‘ginger’, South dravidian nominal compound from the etyma of Tamil and Malayalam *iñci* (both with regular loss of an initial sibilant) + *wēr* (Proto-Dravidian *wēr*); the base of \**cinki* is a loanword < unknown \*‘ginger’, unidentified Southeast Asian language; cf. cognates Khasi *syng /s?inj/*, Thai *khing*, Vietnamese *giảng*, Chinese *jiāng* <? Proto-Sino-Tibetan\* \**kjan* ‘ginger’<sup>a</sup>

<sup>a</sup>OUP (n.d.) and Ross (1952); Krishnamurti (2003, p. 5);

#	Species	Name	Source
1	<i>Zingiber officinale</i>	black ginger	OUP (n.d.)
2	<i>Zingiber officinale</i>	ginger	van Wyk (2014)
3	<i>Zingiber officinale</i>	ginger root	OUP (n.d.)
4	<i>Zingiber officinale</i>	ginger spice	OUP (n.d.)
5	<i>Zingiber officinale</i>	green ginger	OUP (n.d.)
6	<i>Zingiber officinale</i>	white ginger	OUP (n.d.)

Table 4.55 Various names for ginger in English.

Arabic

<sup>a</sup>Kaufman et al. (1987); Ciancaglini (2008, p. 90); Krishnamurti (2003, p. 5); OUP (n.d.)

#	Species	Name	Tr.	Gloss	Source
1	<i>Zingiber officinale</i>	زنجبيل	janzabil		Wehr (1976)
2	<i>Zingiber officinale</i>	زنجبيل	zanjabil		Wehr (1976)

Table 4.56 Various names for ginger in Arabic.

Chinese

**Etymology 40.** Mandarin Chinese 薑 *jiāng* ‘ginger’, -221 < Old Chinese 𠀤 MC OC /\*kanj/ ‘ginger’ < Proto-Sino-Tibetan\* \**kjan* ‘ginger’; cf. Burmese မျက်နှာ *hkyang*:<sup>a</sup>

a

## Summary

#	Species	Name	Tr.	Gloss	Source
1	<i>Zingiber officinale</i>	幹薑	<i>gānjiāng</i>	dry-ginger	DeFrancis (2003)
2	<i>Zingiber officinale</i>	薑	<i>jiāng</i>	ginger	Kleeman and Yu (2010)
3	<i>Zingiber officinale</i>	鮮薑	<i>xiānjiāng</i>	fresh-ginger	DeFrancis (2003)

Table 4.57 Various names for ginger in Chinese.

#	Language	Term	Gloss	Loan	Source
1	English	<i>black ginger</i>		no	OUP (n.d.)
2	English	<i>ginger</i>		yes	OUP (n.d.)
3	English	<i>ginger root</i>		no	OUP (n.d.)
4	English	<i>ginger spice</i>		no	OUP (n.d.)
5	English	<i>green ginger</i>		no	OUP (n.d.)
6	English	<i>white ginger</i>		no	OUP (n.d.)
1	Arabic	<i>janzabil</i>		yes	Wehr (1976)
2	Arabic	<i>zanjabil</i>		yes	Wehr (1976)
1	Chinese	<i>gānjiāng</i>	dry-ginger	no	DeFrancis (2003)
2	Chinese	<i>jiāng</i>	ginger	no	Kleeman and Yu (2010)
3	Chinese	<i>xiānjiāng</i>	fresh-ginger	no	DeFrancis (2003)

Table 4.58 Conventionalized names for ginger in English, Arabic, and Chinese, found in dictionaries.

## 4.14 Long Pepper

Long pepper is a relative of the black pepper, and as a commercial product it comes from two sources: the Indian long pepper *Piper longum*, and Javanese long pepper *Piper retrofactum* Vahl Vahl. The latter is sometimes also called Balinese long pepper or Indonesian long pepper. According to Peter (551 2012, vol. 2) vol 2

### 4.14.1 The Botany, Origins, and Cultivation of Long Pepper

### 4.14.2 The History of Long Pepper

### 4.14.3 The Names of Long Pepper

#### English

In English, *long pepper* is a calque after the modelling the Latin *piper longus*, and first appear in the early Old English Medicinal text known as *Bald's Leechbook*<sup>129</sup>. The plant's binomial name was also derived from this term, using the neuter form *Piper longum*. The OED points out that it was supposed to refer to flowers or unripe fruits of the (black) pepper plant in earlier times. This notion must arise from the fact that the long pepper fruits do somewhat look resemble the unripe black pepper clusters looking like catkins, and some Romans must have assumed that long pepper is just the unripe version of small black pepper clumps. Nevertheless, I am certain that the Romans did not see young unripe black peppers still on the vine very often, so we can forgive them this time. The gloss of *long pepper* from Latin is not unique to English, many European languages went down the same route.<sup>130</sup>

In the East, however, where there was no Latin to distinguish between black (*nigrum*) and long (*longum*), simply the Sanskrit name *pippali* was borrowed by the languages whose speakers got familiar with long pepper and its sisters directly from speakers of Indic languages, compare Malayalam *tippali*, Telugu *pippali*, or Tibetan *pi pi ling*. Modern Hindi *pippali* is most probably a *tatsama*<sup>131</sup> word, a learned loan from Sanskrit. The name of the sacred fig (*Ficus religiosa*) – otherwise known as the bodhi tree, under which the Buddha gained enlightenment and rendered *peepul* in English from Hindustani *pīpal* – has Sanskrit *pippala* ‘berry, especially the fruit of the sacred fig’ as an etymon. The sacred fig was a kind of “spiritual import”, we know about two instances when the Indian king gifted bodhi trees to the Chinese emperor in 641 and 647 from Magadha, the homeland of these trees (Schafer, 1985, p. 122).

Long pepper in Chinese is 薑**朶** *bibō*, as it appears on TCM databases<sup>132</sup>, or 薑拔 *bibá*, with some

<sup>129</sup>OUP, n.d., longpepper.

<sup>130</sup>Compare Anglo-Norman *poivre long* (13th cent.; Middle French, French *poivre long*), Middle Dutch *lanc peper* (Dutch *lange peper*), Middle Low German *lanc pēper*, *lancpēper*, Old High German *langpfeffar* (Middle High German *langer pheffer*, German *langer Pfeffer*), Old Swedish *langa pipar* (Swedish *långpeppar*), according to the OED; as well as Italian *pepe lungo*, Spanish *pimienta larga*, Portuguese *pimenta-longa*, Finnish *pitkäpippuri*, Polish *pieprz dług*, etc.

<sup>131</sup>*Tatsama* refers to a group of vocabulary consisting of learned loanwords from Sanskrit into modern languages of India, including both Indo-Aryan and Dravidian languages. It is comparable to the usage of Greek and Latin words in modern European languages, as they belong to a higher register. E.g.: the choice to use *curriculum* over *courses*. It is accompanied with *tadbhava*, which is the class of words that evolved.

<sup>132</sup>

other historical character variations. A local Hong Kong spice vendor is marketing it as 長胡椒/薑撥 *zhǎng hújiāo/bibō*, the first of which is a obvious rendering of the English *long [black] pepper*, while the second is using the second character 撥 *bō*, the same that is used the first time in historical documents. The first mention is in 通典 *Tongdian*<sup>133</sup> “Comprehensive statutes” written by Du You, a late 8<sup>th</sup>-century encyclopedia and administrative history covering ancient times up to 756, including the Battle of Talas and other important events in Tang history. Long pepper appears in the last part of the book about “Frontier defense”, under the section 波斯 *Bosi* [Persia], in a listing all the products that are supposed to be found there.<sup>134</sup> Long pepper also appears in the 西陽雜俎 *Youyang Zazu*<sup>135</sup> “Miscellaneous Morsels from Youyang”, a 9<sup>th</sup> century Tang miscellany on various topics by Duan Chengsi. It contains fantastic stories from ghosts to strange animals, “legends and hearsay, reports on natural phenomena, short anecdotes, and tales of the wondrous and mundane, as well as notes on such topics as medicinal herbs, perfume, tattoo and language” – to quote Reed (1995, p. 1). Book<sup>136</sup> eighteen contains 24 entries of exotic plants that have been imported to China or brought as tribute from places such as Syria, Persia, Malaysia, and Silla [Korea]. The author usually gives the foreign names of these products and tries to compare them to a plant more familiar to the Chinese readership. The plants featured here include cardamom, galbanum, acacia, jackfruit, Balm of Gilead, Narcissus, and jasmine (Reed, 1995, p. 68). Entry 56 is on long pepper (薑撥 *bibō*), where Duan tells us that it comes from Magadha, and pronounced as 薑撥梨 \*bit-bat-li<sup>137</sup>. Magadha refers to a culturally important historic region of India roughly on the eastern Ganges-plain. He also tells us the purported Fulin [Roman] name for it, and then proceeds to describes the appearance of the plant, likening the fruit to mulberries, which bear a close enough similarity of long pepper fruits. This is clear evidence that the Chinese used the Sanskrit word referring to long pepper, and Schafer (1985, p. 151) mentions that it was commonly shortened to *pippal* and mispronounced as *pitpat* or *pippat*.

薑撥，出摩伽陀國，呼為薑撥梨，拂林國呼為阿梨訶他。苗長三四尺，莖細如箸。葉似戢葉。子似桑椹，八月採。（YYZZ 18:56）<sup>138</sup>

<https://www.zdic.net/hans/阿梨訶他> / 阿梨訶陀 arihata? a li he tuo qa li ho? tuo? <https://cidian.qianp.com/ci/>

It is now a good time to remind the reader that it is this long pepper that gave us the word *pepper* in English and many other languages around the world, as it was shown in 14.

I mentioned “sisters” earlier, because long pepper is not alone here, there are other species, such as *Piper retrofractum*, also known as *Javanese long pepper* or sometimes as *Balinese long pepper*. At this point it will make sense to use the name *Indian long pepper* when referring to *Piper longum* to avoid confusion. These two plants and their fruits are very similar, and they are often lumped together in discussions. It is enough to remember that Indian long pepper is important in India and mainland

<sup>133</sup><http://www.chinaknowledge.de/Literature/Science/tongdian.html>

<sup>134</sup><https://ctext.org/dictionary.pl?if=en&id=565096>

<sup>135</sup><http://www.chinaknowledge.de/Literature/Novels/youyangzazu.html>

<sup>136</sup>The original term is 卷 *juan*, meaning ‘scroll, book’, or ‘volume, chapter’.

<sup>137</sup>Reconstructed Tang pronunciation

<sup>138</sup>The same page also has an entry on black pepper. <https://ctext.org/library.pl?if=en&file=85088&page=282>

Southeast Asia, while Javanese long pepper is more relevant to insular Southeast Asia, but both were exported to medieval China and most likely there was no distinction made between the two. Javanese long pepper is more pungent than both black and long pepper, and is used in medicine, pickling, and curries, and much is exported to China – wrote Burkill (1935). Long pepper also spread through southern Asia before black pepper (Burkill, 1935, pp. 1746–1751).

We know that long pepper was popular in Rome during Pliny's time, and that it was more expensive than black pepper. And if we look at the fact that the name borrowed to Greek from Sanskrit was *pippali* and not *marica*, we can readily assume that it was introduced to Europe before black pepper.

These plants hold the key to one of the questions I asked at the beginning of this project, that is: Why was the Indonesian word *cabai* so resistant, and why Indonesian did not loan words of 'pepper' or 'chili'?

They bear very similar fruits, turning bright red when ripe, reaching upwards.

Chinese

## 4.15 Nutmeg & Mace

### 18. NUTMEG

POWO

**English:** nutmeg. **Arabic:** جوز الطيب *jawz al-ṭib* [fragrant nut]; nan. **Chinese:** 肉豆蔻 *ròudòukòu* [flesh-bean-cardamom]. **Hungarian:** szerecsendió [Saracen nut]; *muskátdió* [musk-nut]; *mácisdió* [mace-nut].

Plant species:	<i>Myristica fragrans</i> Houtt.
Family:	<i>Myristicaceae</i>
Plant part used:	seed
Region of origin:	Moluccas (Indonesia)
Cultivated in:	Grenada, Indonesia
Color:	pale brown nut, dark when powdered



(a) a



(b) b



(c) c

Figure 4.20 Nutmeg, *Elettaria nutmegum*.

### 19. MACE

POWO

**English:** mace. **Arabic:** بسباسة *basbāsa*. **Chinese:** 肉豆蔻皮 *ròudòukòupí* [flesh-bean-cardamom-skin]. **Hungarian:** szerecsendió-virág [Saracen nut flower].

Plant species:	<i>Myristica fragrans</i> Houtt.
Family:	<i>Myristicaceae</i>
Plant part used:	aril
Region of origin:	Moluccas (Indonesia)
Cultivated in:	Grenada, Indonesia
Color:	crimson red aril whn fresh, pale yellow when dried

#### 4.15.1 The Botany of Nutmeg

#### 4.15.2 The History of Nutmeg

#### 4.15.3 The Names of Nutmeg

##### English

**Etymology 41.** English *nutmeg* < Anglo-Norman *\*nois mugue* < Old French *nois mug(u)ede*; *nois musquete* < Romance\* *\*nuce muscāta* < Latin *nux muscada* < Pahlavi *\*mušk* < Sanskrit *muṣka<sup>a</sup>*

---

<sup>a</sup>;

#	Species	Name	Source
1	<i>Myristica fragrans</i>	nutmeg	van Wyk (2014)

Table 4.59 Various names for nutmeg in English.

##### Arabic

#	Species	Name	Tr.	Gloss	Source
1	<i>Myristica fragrans</i>	داركيسة	<i>dārkīsa</i>		Amar and Lev (2017)
2	<i>Myristica fragrans</i>	جوز الطيب	<i>jawz al-ṭīb</i>	fragrant nut	Amar and Lev (2017)
3	<i>Myristica fragrans</i>	جوز بوى	<i>jawz bawwā</i>	fragrant nut	Amar and Lev (2017)

Table 4.60 Various names for nutmeg in Arabic.

##### Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Myristica fragrans</i>	肉豆蔻	<i>ròudòukòu</i>	flesh-bean-cardamom	DeFrancis (2003)
2	<i>Myristica fragrans</i>	肉荳蔻籽粉	<i>ròudòukòuzǐfēn</i>	flesh-bean-cardamom-seed-powder	Kleeman and Yu (2010)

Table 4.61 Various names for nutmeg in Chinese.

#	Language	Term	Gloss	Loan	Source
1	English	<i>nutmeg</i>		yes	OUP (n.d.)
1	Arabic	<i>jawz al-tīb</i>	fragrant nut	yes	Wehr (1976)
2	Arabic	<i>jawz bawwā</i>	fragrant nut	yes	Baalbaki (1995)
1	Chinese	<i>ròudòukòu</i>	flesh-bean-cardamom	no	DeFrancis (2003)
2	Chinese	<i>ròudòukòuzǐfēn</i>	flesh-bean-cardamom-seed-powder	no	Kleeman and Yu (2010)

Table 4.62 Conventionalized names for nutmeg in English, Arabic, and Chinese, found in dictionaries.

## Summary

﴿ 20. *Myristica fragrans* Houtt.

POWO

English: *mace*. Chinese: 肉荳蔻皮 *ròudòukòupi*. Arabic: قشرة جوز الطيب *qišratu jawzi t-tībi*, بسباس *basbās*. Hungarian: *szerecsendió-virág*.

**Etymology 42.** English *mace* XIV (back-formation, false sg. from perceived pl. *macis*) EE XIII MW < Middle English *macis*, *maces*, *mace* MW < Middle French *maci*; *macis* AH < Medieval Latin *macis* misreading? AH < Old French *macis* EE OE < Latin *macir* ‘red spicy bark from India’ EE OE ‘reddish rind of an Indian root’ MW ‘red bark of the root of a South Asian tree (possibly *Holarrhena antidysenterica*) used as a remedy for dysentery’ AH < Ancient Greek *mákir* MW AH < unknown, Oriental loanword

Why is Connecticut called 'The Nutmeg State'? <https://www.ctpost.com/living/article/Why-is-Connecticut-called-The-Nutmeg-State-16233291.php>

## 4.16 Saffron

### 21. SAFFRON

POWO

English: saffron. Arabic: زعفران *zafarān*. Chinese: 藏紅花 *zànghóng huā* [Tibetan-red-flower]. Hungarian: *sáfrány*.

Plant species:	<i>Crocus sativus</i> L.
Family:	<i>Iridaceae</i>
Plant part used:	stigma (style)
Region of origin:	Greece
Cultivated in:	Iran; Spain; Kashmir; etc.
Color:	deep red; dyes in orange



(a)



(b)



(c)

Figure 4.21 Saffron threads from the Quercy region of France (a), from La Mancha, Spain (b), and saffron flowers from Khorasan, Iran (c). *Crocus sativus*. Credits: Aromatiques (a, b); Vathlu (c)<sup>139</sup>

Saffron is the dried, dark red stigmas (and styles) of the saffron crocus flower. It owes its reputation to its unique, fragrant aroma, vivid coloring properties, and the fact that it is the costliest spice by weight. Its high price is due to the labor-intensive harvest, and the large growing area it requires. Saffron has been cultivated for thousands of years now, and it is famous for being the most expensive spice throughout much of recorded history. Saffron is a medicine, dye, and spice, with important cultural roles. It gives flavor to Spanish paella, and lends the orange hue to Buddhist monks' robe. In Iran this "red gold" is the pinnacle of all spices, it is a ubiquitous ingredient of Persian cuisine and an important export product. It is cultivated in Mediterranean climate and semi-arid areas, including Spain, Morocco, Iran, Afghanistan, Kashmir, and more recently New Zealand.

<sup>139</sup>Wikimedia Commons CC4.0 [https://commons.wikimedia.org/wiki/File:Saffron\\_Flowers\\_in\\_Khorasan,\\_Iran.jpg](https://commons.wikimedia.org/wiki/File:Saffron_Flowers_in_Khorasan,_Iran.jpg)

#### 4.16.1 The Botany, Origins, and Cultivation of Saffron

The bulbous plant species yielding the spice and dye is a sterile *cultigen*<sup>140</sup> called *Crocus sativus* L. (van Wyk, 2014, p. 124), *sativus* meaning ‘cultivated’ in Latin. Saffron does not grow in the wild, as it cannot survive without human handling/intervention (Peter, 2012, p. 469). It relies entirely on horticulture, there are no known wild variants, and so the origins of this plant are not entirely clear. Although by now it has propagated throughout much of Europe and Western Asia, its proposed regions of origin range from the Eastern Mediterranean to Asia Minor (today’s Greece, Turkey, Iran). After comparing the related taxa, it is now believed that it was developed in ancient Greece from a wild progenitor, most probably *Crocus cartwrightianus* Herb.<sup>141</sup>, which also bears the most resemblance to it (Mathew, 1977). Growing in Greece – Attica, the Cyclades, and Crete in the Aegean Sea, this species was likely selected for its long stigmas (Mabberley, 2017, p. 248).

As a crop, saffron spread to various places around the globe, and so today there are some historically important saffron growing regions such as Iran, Kashmir, Spain. Iran is by far the top producer of saffron, accounting for two thirds of the global market (or up to 90% in other sources), which is around 300 tons/year (Mabberley, 2017, p. 248). Spain also produces superb quality saffron in a relatively small, protected designation of origin (PDO) area in La Mancha; their skill results with the highest yields per hectare, and they prepare around 47 tons per annum. Interestingly, Spain was also the top importer of saffron in the last decade. The race for the “who has best saffron in the world” is usually joined by India, as Kashmiri saffron is also held in high regard (saffron is only cultivated in the Jammu & Kashmir territory of India).

To produce one kilogram of saffron, one needs around a 100 000-250 000 flowers...

There are many other decorative flowering species native to Europe that look very similar to the saffron crocus, but they are not used as spice, take for example the toxic “autumn crocus, meadow saffron, naked lady” (*Colchicum autumnale*).

#### Production, cultivation and harvest

Being sterile, saffron croci has to be artificially propagated by dividing the corms (bulbs) during the summer dormant period, and harvested in autumn when they flower (van Wyk, 2014, p. 124). Work has to be fast and organised, because all the flowers blossom synchronously in a short, one or two week period, and they can be only gathered at dawn when they open; the flowers slowly wilt as the day passes. Each purple flower has three bright crimson stigmas that are connected to the plant’s ovary in the stem by a yellow style, this is called a “thread”. The saffron threads have to be carefully hand-picked from the harvested flowers, and the spice’s quality depends on what part of the threads are then sold. The upper, vivid red stigmas have the most strong aroma, while the lower styles have almost none. Figure 4.22 shows different quality saffron trims, with the popular terminology taken from Persian.

<sup>140</sup>Coined in 1918 by Liberty Hyde Bailey (1858–1954) an American horticulturist and botanist, cultigen refers to a plant species that is a result of artificial selection or alteration, typically being cultivated by humans only, sustaining no wild individuals. [https://www.actahort.org/books/799/799\\_23.htm](https://www.actahort.org/books/799/799_23.htm)

<sup>141</sup>POWO: <https://powo.science.kew.org/taxon/436500-1>

Rivaling with the price of gold, this fragrant spice is also known as “red gold”. As of January 2022, a spice shop in Hong Kong is selling a 0.1 gram sample of saffron style<sup>142</sup> for double the unit price as any other spice in their supply.<sup>143</sup>

showing which part of the thread is trim

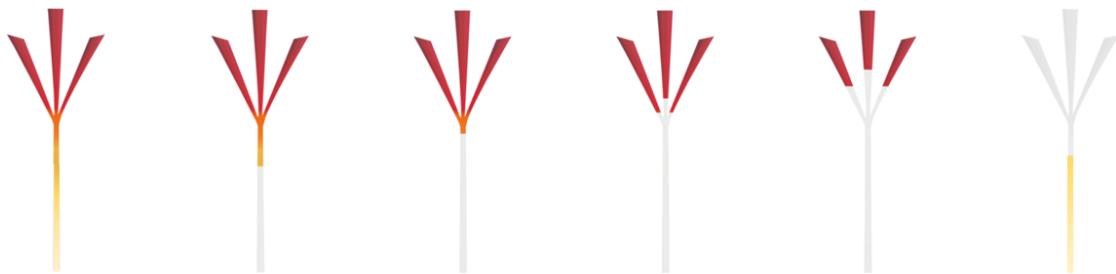


Figure 4.22 Different grades of saffron. From left to right: Daste (bunch saffron), Pushal, Negin, Super Negin, Sargol, Konj (white saffron)

### The History of Saffron

Depictions of saffron were found at the wall-paintings of Thera (modern Santorini), on the Aegean Sea. These frescoes are one of the few remaining artistic examples of the ancient Minoan culture, going back as early as the first half of the 2<sup>nd</sup> millennium BC (Doumas, 1992, pp. 29–31). The murals at the archaeological site of Akrotiri have been preserved in pyroclastic ash due to a massive volcanic eruption, somewhere around the last decades of the 17<sup>th</sup> century BC, similar to Pompeii.



Figure 4.23 Saffron-gatherers. Details from the mural on the east wall in room 3a, first floor, at Xeste 3 site, Akrotiri (Doumas, 1992, p. 152).

<sup>142</sup>Style refers to a narrow, upward extension of the ovary in a flower, connecting it to the stigmatic papillae (<https://www.britannica.com/science/style-plant-anatomy>)

<sup>143</sup>Source: <https://regencyspices.hk/collections/spices/products/saffron>

“Of no foreign product are the notions of the Chinese vaguer than of saffron.” Laufer

#### 4.16.2 The Names of Saffron

##### English

**Etymology 43.** English *saffron*, ca. 1200; cf. Middle English *saf(f)rōun* < French *safran* ‘id.’, c. 1150; cf. Middle Low German *safferān*, Middle Dutch *saffraen* (Dutch *saffraan*), Middle High German *saffrān* (modern German *safran*) < Medieval Latin *safrānum* ‘id.’ < Arabic *z̄afarān* ‘id.’, (not connected with *ṣafra*’ feminine of *asfar* ‘yellow’); cf. Turkish, Persian, and Hindi; Jewish Aramaic *za’perānā*; Spanish *azafran*, Portuguese *açafrão*; the word without this prefix gives rise to Italian *zafferano*, *zaffrone*, Provençal *safran*, *safrá*, Catalan *safrá*, French *safran*, medieval Latin *safranum*, medieval Greek *ζαφρᾶς*, modern Greek *σαφράνι*, Russian *сафран*. <sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *saffron*); R. E. Lewis et al. (1952–2001, *saf(f)rōun*); TLFi (2012, s.v. *safran*); Wehr (1976)

The word *saffron*, referring to bright red stigmas used as spice and dye was first attested in the start of the 13<sup>th</sup> century. It entered Middle English via Old French *safran*<sup>144</sup>, a 12<sup>th</sup> century word from Medieval Latin *safrānum*, which is a loanword from Arabic *z̄afarān*.<sup>145</sup> The origin of the Arabic word is unknown, but it has been compared to Akkadian *azupīru*.<sup>146</sup> The meaning referring to the plant and flower saffron crocus (*Crocus sativus*) is attested from the 15<sup>th</sup> century onwards, which means that this is a case where the product was known before its plant source (just like in many other cases).

I must emphasize the importance of saffron’s coloring properties. Even far away from its homeland in musty England, the word *saffron* soon gained a meaning of ‘orange-yellow color’, attested as early as the late 14<sup>th</sup> century and appearing in literature as the color or robes: “Your sonne was misled with a snipt taffata fellow there, whose villanous saffron wold haue made all the vnbak’d and dowy youth of a nation in his colour.” (W. Shakespeare *All’s Well that Ends Well* (1623) iv. v. 2, OUP, n.d., *saffron*) Furthermore, *saffron* as a verb in the sense ‘to dye with saffron; to give a saffron-yellow color to’ is attested from the end of the 16<sup>th</sup> century. E.g.: “In Ireland..they saffron all their wearing linnen.”<sup>147</sup>

This is a good example for the kind of cultural acclimatization a spice can achieve that shines through language use: if the name of the spice becomes an adjective and even a verb, it must be reflecting on a situation that is marked by widespread — or at least fashionable — usage.

#	Species	Name	Source
1	<i>Crocus sativus</i>	<i>saffron</i>	van Wyk (2014)

Table 4.63 Various names for saffron in English.

<sup>144</sup>TLFi, 2012, *safran*.

<sup>145</sup>OUP, n.d., *saffron*; R. E. Lewis et al., 1952–2001, *saf(f)rōun*.

<sup>146</sup>AHD, 2022, *saffron*.

<sup>147</sup>OUP, n.d., *saffron*, v.

Arabic

<sup>a</sup>Wehr (1976); Asbaghi (1988), MacKenzie (1971/1986, pp. 65, 98), and Nişanyan (2022, safran); Black et al. (1999/2000, p. 33) and Roth et al. (1968/2004, vol. 2, 530–531)

It can be often read (e.g., in van Wyk, 2014, p. 124) that the original Arabic word means ‘yellow’, due to the conflation of Arabic *s-f-r* (the concept of yellow) with the word for saffron, but this is unfounded folk-etymologization and thus a false cognate; there is no known version with *s* /s<sup>f</sup>/ in Arabic and there is no supporting evidence for a similar sound change.

On the other hand, Arabic *za'farān* is an obvious candidate to be a loanword — no question about it — and it has been proposed by Asbaghi (1988) that it might be coming from Middle Persian \**zarparān*, meaning ‘gold thread’, or ‘golden feathers’, as in *zar* ‘gold’ + *par* ‘feather; wing; leaf’ + -ān, the historical marker for plurals in Persian<sup>148</sup>, an explanation that found its way to other dictionaries<sup>149</sup>. Unfortunately, this claim was made in a publication that was deemed to be “unserious” (Ullmann, 1997, p. 9) and even a “scandal” (Niehoff, 1989–1990, p. 315) by scholars in the field, and seem to be a classic case of folk etymologization from a Persian as a foreign language teacher. Nevertheless, it remains cited in many places. An even more obscure path takes us to Akkadian; the literature sometimes mentions *azupīru* or *azupīrānu*<sup>150</sup> as a possible source, but the CAD finds this unlikely, citing that the uses for this plant are inconsistent with that of saffron, for example the mentions of its seeds.<sup>151</sup> Nevertheless, the assumption that we could be dealing with a regional *Wanderwort* that can be attested in various Semitic languages is not wrong, and to tell the truth I was rather surprised to find out that the etymology of saffron is still shrouded in mystery. I have reached out to an Iranist-linguist friend, who also did not find any conclusive evidence, but pointed me towards the *Bundahishn*, an ancient work of Zoroastrian cosmogony written in Pahlavi (Middle Persian). Looking at the status of saffron in Iran throughout history, it is not surprising that Persian mythological traditions mentioned saffron in their stories (Golfam, 2017; Sharifi, 2010). Ancient texts do not help us in the case of *za'farān*'s origins; in the *Bundahishn*, saffron appears as *kurkum/karkam*. This term can be familiar

<sup>148</sup> MacKenzie, 1971/1986, pp. 65, 98.

<sup>149</sup>cf. Nişanyan, 2022, safran.

<sup>150</sup>Black et al., 1999/2000, p. 33.

<sup>151</sup>Roth et al., 1968/2004, p. 531.

from the names of turmeric (*Curcuma longa*) in various languages, a spice also known as a vivid yellow dye, and boasts with an alleged Sanskrit etymon we will investigate later in section 4.19.3.

الأخضران saffron and gold [the two yellow things] in baalbaki

#	Species	Name	Tr.	Gloss	Source
1	<i>Crocus sativus</i>	جادي	jādī		Baalbaki (1995)
2	<i>Crocus sativus</i>	زعفران	za'farān	saffron	Wehr (1976)
3	<i>Crocus sativus</i>	حص	ḥuṣṣ		Wehr (1976)

Table 4.64 Various names for saffron in Arabic.

### Chinese

**Etymology 45.** Mandarin Chinese 藏紅花 zànghónghuā ‘saffron’ [Tibetan-red-flower], reached China from way of Tibet, hence the name; cf. synonyms: foreign-red-flower, western-red-flower<sup>a</sup>

<sup>a</sup>Kleeman and Yu (2010)

In Chinese, saffron is known in various names, all pointing to its foreign origins. 藏紅花 *zanghonghua* means ‘Tibetan red flower’, 番紅花 *fanhonghua* is ‘foreign red flower’, and 西紅花 *xihonghua* could be translated as ‘Western red flower’ literally. From these, ‘Tibetan red flower’ is somewhat of a misnomer, but not entirely: although saffron does not originate from Tibet, it became associated with as much as that nowadays travel blogs call Tibet the “land of Saffron” (cf. Kunga, 2017) Saffron in Tibet has a long history, including the western regions of Kashmir. It is an important ingredient in both traditional Tibetan Medicine, and Ayurveda. Saffron’s introduction to India and Tibet from Persia is clad in legends, as it was reported by Dash (1976).

Saffron as a term of color is usually rendered 橘黃色 *juhuangse* in Chinese, which refers to the orange color of tangerines.<sup>152</sup>

#	Species	Name	Tr.	Gloss	Source
1	<i>Crocus sativus</i>	番紅花	fānhónghuā	foreign-red-flower	Laufer (1919)
2	<i>Crocus sativus</i>	紅花	hónghuā	red-flower	Laufer (1919)
3	<i>Crocus sativus</i>	撒法郎	sǎfǎláng	phonetic	Laufer (1919)
4	<i>Crocus sativus</i>	西紅花	xīhónghuā	western-red-flower	PolyU (n.d.)
5	<i>Crocus sativus</i>	鬱金香	yùjīnxīāng	yü-gold-aromatic	Schafer (1985)
6	<i>Crocus sativus</i>	藏紅花	zànghónghuā	Tibetan-red-flower	Laufer (1919)
7	<i>Crocus sativus</i>	咱夫藍	záfūlán	phonetic	Laufer (1919)

Table 4.65 Various names for saffron in Chinese.

<sup>152</sup>Lau, n.d., saffron.

## Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>saffron</i>		yes	OUP (n.d.)
1	Arabic	<i>jādī</i>		no	Baalbaki (1995)
2	Arabic	<i>za'farān</i>	saffron	yes	Wehr (1976)
3	Arabic	<i>ḥuṣṣ</i>		no	Wehr (1976)
1	Chinese	<i>fānhónghuā</i>	foreign-red-flower	no	DeFrancis (2003)
2	Chinese	<i>zànghónghuā</i>	Tibetan-red-flower	no	Kleeman and Yu (2010)

Table 4.66 Conventionalized names for saffron in English, Arabic, and Chinese, found in dictionaries.

## 4.17 Sichuan Pepper

### 22. SICHUAN PEPPER

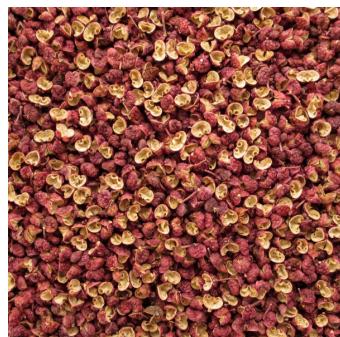
POWO

English: *Sichuan pepper*. Arabic: فلفل سیتشوان *fulful sītshuwān* [Sichuan pepper]; nan. Chinese: 花椒 *huājiāo* [flower-pepper]. Hungarian: *szecsuáni bors* [Sichuan pepper].

Plant species:	<i>Zanthoxylum bungeanum</i> Maxim.; <i>Z. armatum</i> ; et al.
Family:	<i>Rutaceae</i>
Plant part used:	pericarp
Region of origin:	China
Cultivated in:	China
Color:	red; green



(a) a



(b) b



(c) c

Figure 4.24 Sichuan Pepper .

### 4.17.1 The Botany, Origins, and Cultivation of Sichuan Pepper

### 4.17.2 The History of Sichuan Pepper

### 4.17.3 The Names of Sichuan Pepper

English

Arabic

Chinese

Summary

#	Species	Name	Source
1	<i>Z. bungeanum</i> ; <i>Z. armatum</i> ; <i>Z. simulans</i>	Chinese pepper	Davis (1824)
2	<i>Zanthoxylum schinifolium</i>	sancho	van Wyk (2014)
3	<i>Zanthoxylum ailanthoides</i>	yue jiao	van Wyk (2014)
4	<i>Zanthoxylum alatum</i>	timut	van Wyk (2014)
5	<i>Zanthoxylum armatum</i>	Nepal pepper	Austin and Felger (2008)
6	<i>Zanthoxylum armatum</i>	winged prickly ash	
7	<i>Zanthoxylum armatum</i>	zhu ye jiao	van Wyk (2014)
8	<i>Zanthoxylum piperitum</i>	anise pepper	Austin and Felger (2008)
9	<i>Zanthoxylum piperitum</i>	Japanese pepper	van Wyk (2014)
10	<i>Zanthoxylum piperitum</i>	Japanese prickly-ash	
11	<i>Zanthoxylum piperitum</i>	sansho	van Wyk (2014)
12	<i>Zanthoxylum simulans</i>	chuan jiao	van Wyk (2014)
13	<i>Zanthoxylum spp.</i>	brown pepper	Austin and Felger (2008)
14	<i>Zanthoxylum spp.</i>	Chinese prickly ash	
15	<i>Zanthoxylum spp.</i>	fagara	Austin and Felger (2008)
16	<i>Zanthoxylum spp.</i>	prickly ash	OUP (n.d.)
17	<i>Zanthoxylum spp.</i>	Sichuan pepper	van Wyk (2014)

Table 4.67 Various names for Sichuan pepper in English.

#	Species	Name	Tr.	Gloss	Source
1	<i>Zanthoxylum spp.</i>	فلفل سیتشوان	<i>fulful sītshuwān</i>	Sichuan pepper	Wikipedia (n.d.)
2	<i>Zanthoxylum spp.</i>	فاغرة	<i>fāghira</i>		Lane (1863)

Table 4.68 Various names for Sichuan pepper in Arabic.

#	Species	Name	Tr.	Gloss	Source
1	<i>Zanthoxylum armatum</i>	竹葉椒	<i>zhúyèjiāo</i>	bamboo-leaf-pepper	
2	<i>Zanthoxylum bungeanum</i>	花椒	<i>huājiāo</i>	flower-pepper	S.-Y. Hu (2005)
3	<i>Zanthoxylum piperitum</i>	日本花椒	<i>rìběn huājiāo</i>	Japanese-flower-pepper	
4	<i>Zanthoxylum piperitum</i>	山椒	<i>shānjiāo</i>	mountain-pepper	Wikipedia (n.d.)
5	<i>Zanthoxylum schinifolium</i>	青花椒	<i>qīnghuājiāo</i>	green-flower-pepper	S.-Y. Hu (2005)
6	<i>Zanthoxylum schinifolium</i>	香椒子	<i>xiāngjiāozǐ</i>	fragrant-pepper-seed	S.-Y. Hu (2005)
7	<i>Zanthoxylum schinifolium</i>	崖椒	<i>yájiāo</i>	cliff-pepper	S.-Y. Hu (2005)
8	<i>Zanthoxylum simulans?</i>	川椒	<i>chuānjiāo</i>	river(=Sichuan)-pepper	S.-Y. Hu (2005)
9	<i>Zanthoxylum spp.</i>	椒	<i>jiāo</i>	pepper	DeFrancis (2003)
10	<i>Zanthoxylum spp.</i>	麻椒	<i>májiāo</i>	numbing-pepper	
11	<i>Zanthoxylum spp.</i>	蜀椒	<i>shǔjiāo</i>	Sichuan-pepper	Wikipedia (n.d.)

Table 4.69 Various names for Sichuan pepper in Chinese.

#	Language	Term	Gloss	Loan	Source
1	English	<i>Chinese pepper</i>		no	OUP (n.d.)
2	English	<i>zhu ye jiao</i>	Bamboo leaf pepper in Chinese	yes	van Wyk (2014)
3	English	<i>Japanese pepper</i>		no	OUP (n.d.)
4	English	<i>prickly ash</i>		no	OUP (n.d.)
1	Chinese	<i>huājiāo</i>	flower-pepper	no	DeFrancis (2003)
2	Chinese	<i>jiāo</i>	pepper	no	DeFrancis (2003)

Table 4.70 Conventionalized names for Sichuan pepper in English, Arabic, and Chinese, found in dictionaries.

## 4.18 Star Anise

### 23. STAR ANISE

POWO

English: star anise. Arabic: يانسون نجمي *yānsūn najmī* [star anise]; nan. Chinese: 八角 *bājiǎo* [octagon]. Hungarian: *csillagánizs* [star-anise].

Plant species:	<i>Illicium verum</i> Hook.f.
Family:	<i>Schisandraceae</i>
Plant part used:	pericarp
Region of origin:	SE. China; Vietnam
Cultivated in:	China, Laos, Vietnam, Korea, Japan, Taiwan, Hainan, Philippines (POWO)
Color:	orange brown



(a)



(b)



(c)

Figure 4.25 Star Anise *Illicium verum*. Credit: Aromatiques.

Star anise is a spice consisting of the dried fruits of the tree *Illicium verum*.

### 4.18.1 The Botany, Origins, and Cultivation of Star Anise

### 4.18.2 The History of Star Anise

Star anise has been known in China as a spice and medicine for over 3,000 years. When in 970 AD, the southern states lost a cruel and merciless war with the Chinese emperor, they had to pay war reparations in star anise. The English pirate Sir Thomas Cavendish brought star anise to Europe from the Philippines in 1588. It began appearing in European kitchens during the 17th century as an aromatic agent added to tea in the Russian Czar's court. It was not used in Germany until the end of the 18th century. The genus name *Illicium* comes from the Latin *illicere*, meaning lure or attract.

### 4.18.3 The Names of Star Anise

#### English

**Etymology 46.** English *star anise* ‘star anise’<sup>a</sup>

<sup>a</sup>

**Etymology 47.** English *badian* ‘star anise’, 1693 < French *badiane* ‘star anise’, 1681 < Persian بادیان *bādyān* ‘fennel; anise’<sup>a</sup>

<sup>a</sup>OUP (n.d.); TLFi (2012); Steingass (1892, p. 140) and Hayyim (1934–1936, p. 197)

#	Species	Name	Source
1	<i>Illicium verum</i>	badian	OUP (n.d.)
2	<i>Illicium verum</i>	Chinese anise	van Wyk (2014)
3	<i>Illicium verum</i>	Chinese fennel	
4	<i>Illicium verum</i>	Chinese star anise	van Wyk (2014)
5	<i>Illicium verum</i>	Siberian anise	
6	<i>Illicium verum</i>	star anise	van Wyk (2014)

Table 4.71 Various names for star anise in English.

#### Arabic

#	Species	Name	Tr.	Gloss	Source
1	<i>Illicium verum</i>	ليسوم حقيقي	<i>laysūm ḥaqīqī</i>	true illicium	Wikipedia (n.d.)
2	<i>Illicium verum</i>	نجمة اليانسون الصينية	<i>najmat al-yānsūn al-ṣīnīyya</i>	Chinese star anise	
3	<i>Illicium verum</i>	يانسون نجمي	<i>yānsūn najmī</i>	star anise	

Table 4.72 Various names for star anise in Arabic.

#### Chinese

#### Summary

*Da liao* ‘major spices’ refers to a combination of spices where star anise is the main ingredient, it is used to season meat. What *da liao* is made up of varies from place to place, but the presence of star

#	Species	Name	Tr.	Gloss	Source
1	<i>Illicium verum</i>	舶茴香	<i>bóhuíxiāng</i>	ship-hui-spice	
2	<i>Illicium verum</i>	八角	<i>bājiǎo</i>	eight-horns/octagon	S.-Y. Hu (2005)
3	<i>Illicium verum</i>	八角茴香	<i>bājiǎohuíxiāng</i>	eight-horned-hui-spice	S.-Y. Hu (2005)
4	<i>Illicium verum</i>	大料	<i>dàliào</i>	big-ingredient	DeFrancis (2003)
5	<i>Illicium verum</i>	大茴香	<i>dàhuíxiāng</i>	big-hui-spice	S.-Y. Hu (2005)

Table 4.73 Various names for star anise in Chinese.

#	Language	Term	Gloss	Loan	Source
1	English	<i>badian</i>		yes	OUP (n.d.)
2	English	<i>Chinese anise</i>		no	OUP (n.d.)
3	English	<i>star anise</i>		no	OUP (n.d.)
1	Chinese	<i>bājiǎo</i>	eight-horns/octagon	no	DeFrancis (2003)
2	Chinese	<i>bājiǎohuíxiāng</i>	eight-horned-hui-spice	no	Kleeman and Yu (2010)
3	Chinese	<i>dàliào</i>	big-ingredient	no	DeFrancis (2003)
4	Chinese	<i>dàhuíxiāng</i>	big-hui-spice	no	MDBG (n.d.)

Table 4.74 Conventionalized names for star anise in English, Arabic, and Chinese, found in dictionaries.

anise is constant (S.-Y. Hu, 2005, p. 152).

## 4.19 Turmeric

### 24. TURMERIC

POWO

English: turmeric. Arabic: كركوم kurkum. Chinese: 薑黃 jiānghuáng [ginger-yellow]; 黃薑 huánghuáng [yellow-ginger]. Hungarian: kurkuma.

Plant species:	<i>Curcuma longa</i> L.
Family:	Zingiberaceae
Plant part used:	rhizome
Region of origin:	India
Cultivated in:	China, Honduras, India, Indonesia, Jamaica
Color:	vivid yellow



(a)



(b)



(c)

Figure 4.26 vanilla... *Vanilla planifolia*? Credits: Aromatiques; Wikimedia Commons (CC4.0)

153

### 4.19.1 The Botany, Origins, and Cultivation of Turmeric

### 4.19.2 The History of Turmeric

### 4.19.3 The Names of Turmeric

#### English

**Etymology 48.** English *turmeric* ‘turmeric’ < French *terre mérite* ‘turmeric’ < Medieval Latin *terra merita* ‘turmeric’<sup>a</sup>

<sup>a</sup>

#	Species	Name	Source
1	<i>Curcuma longa</i>	curcuma	OUP (n.d.)
2	<i>Curcuma longa</i>	Indian saffron	OUP (n.d.)
3	<i>Curcuma longa</i>	turmeric	van Wyk (2014)

Table 4.75 Various names for turmeric in English.

#	Species	Name	Tr.	Gloss	Source
1	<i>Curcuma longa</i>	أصابع صفر	<i>aṣābi‘ ṣufr</i>	yellow fingers	Wikipedia (n.d.)
2	<i>Curcuma longa</i>	هُرْد	<i>hurd</i>		Amar and Lev (2017)
3	<i>Curcuma longa</i>	كُرْكُم	<i>kurkum</i>	phonetic	Amar and Lev (2017)
4	<i>Curcuma longa</i>	شَجَرَةُ الْخَطَاطِيفِ	<i>shajarat al-khaṭāṭif</i>	tree of the hooks/swifts?	Amar and Lev (2017)
5	<i>Curcuma longa</i>	زَعْفَرَانٌ هَنْدِيٌّ	<i>zafarān hindī</i>	Indian saffron	Amar and Lev (2017)
6	<i>Curcuma longa</i>	عَقْدَةُ صَفَرَاءٍ	<i>‘uqda ṣafra’</i>	yellow knob	Baalbaki (1995)
7	<i>Curcuma longa</i>	عَرْوَقُ صَفَرٍ	<i>‘urūq ṣufr</i>	yellow roots	Amar and Lev (2017)

Table 4.76 Various names for turmeric in Arabic.

## Arabic

## Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Crocus sativus</i>	鬱金	<i>yùjīn</i>	yü-gold	Schafer (1985)
2	<i>Curcuma longa</i>	寶鼎香	<i>bǎodǐngxiāng</i>	treasure-cauldron-spice?	
3	<i>Curcuma longa</i>	黃薑	<i>huángjiāng</i>	yellow-ginger	DeFrancis (2003)
4	<i>Curcuma longa</i>	薑黃	<i>jiānghuáng</i>	ginger-yellow	Kleeman and Yu (2010)

Table 4.77 Various names for turmeric in Chinese.

## Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>curcuma</i>		yes	OUP ( <a href="#">n.d.</a> )
2	English	<i>Indian saffron</i>		no	OUP ( <a href="#">n.d.</a> )
3	English	<i>turmeric</i>		yes	OUP ( <a href="#">n.d.</a> )
1	Arabic	<i>kurkum</i>	phonetic	yes	Wehr ( <a href="#">1976</a> )
2	Arabic	‘ <i>uqda ṣafrā’</i>	yellow knob	no	Baalbaki ( <a href="#">1995</a> )
1	Chinese	<i>huángjiāng</i>	yellow-ginger	no	DeFrancis ( <a href="#">2003</a> )
2	Chinese	<i>jiānghuáng</i>	ginger-yellow	no	Kleeman and Yu ( <a href="#">2010</a> )

Table 4.78 Conventionalized names for turmeric in English, Arabic, and Chinese, found in dictionaries.

## 4.2O Vanilla

### 25. VANILLA

POWO

English: *vanilla*. Arabic: فانيليا *fānīliyā*. Chinese: 香草 *xiāngcǎo* [fragrant-herb]; Cantonese: 雲呢拿 *wan⁴ nei⁴ laa⁴-2*. Hungarian: *vanília*.

Plant species:	<i>Vanilla planifolia</i> Jacks. ex Andrews (syn. <i>V. fragrans</i> Ames); <i>V. tahitensis</i> J.W. Moore; <i>V. pompona</i> Schiede
Family:	<i>Orchidaceae</i>
Plant part used:	fruit
Region of origin:	Tropical America
Cultivated in:	Madagascar; Indonesia; Mexico; Papua New Guinea; China
Color:	dark brown pod; creamy white extract



(a)



(b)



(c)

Figure 4.27 vanilla... *Vanilla planifolia*? Credits: Aromatiques; Wikimedia Commons (CC4.0)

[154](#)

Vanilla “beans” are the elongated, dried and cured fruits of the plant *Vanilla planifolia* and spp.<sup>155</sup> with a well-known, attractive aroma. In its relatively recent career, vanilla (better said, vanilla extract) spread around the globe with intensity and haste, and it is an unavoidable flavouring and fragrance of the modern world. From ice cream to candles, baking and aromatherapy, vanilla was so overused commercially, that it became a synonym for ‘plain and conventional’. Because its labour intensive production, vanilla is still the second most expensive spice today after saffron?<sup>156</sup>.

### The Botany, Origin, and Cultivation of Vanilla

The vanilla vine is an epiphytic<sup>156</sup> orchid, with fleshy leaves and yellowish flowers (van Wyk, 2014, p. 282). The fruits, often called “beans” or “pods” are long and thin, and contain thousands of seeds. It is indigenous to tropical America. There are three species of vanilla that are widely cultivated, all originally from Mesoamerica. *V. planifolia* is grown on various islands of the Indian Ocean, mainly

<sup>155</sup>

<sup>156</sup>A plant that grows on other plants.

Madagascar, Réunion, Comoros, and the Seychelles. *V. tahitensis* is found on the South Pacific (it escaped cultivation on the Society islands and now grows on trees), while *V. pompona* is the species of Central and South America and the West Indies. More than two thirds of the world's vanilla comes from Madagascar and Indonesia (FAOSTAT).

Plants are grown from cuttings, and require moist, tropical conditions. Until the 19<sup>th</sup> century, Mexico enjoyed a monopoly on vanilla production, which was broken by the French, who transplanted it to their colonies of Réunion and Madagascar on the Indian Ocean, and later the Dutch to Java (van Wyk, 2014, p. 282). This was made possible by a 12-year-old slave boy, Edmond Albius, pioneered a technique on the island of Réunion to hand-pollinate the plants in 1841, a feat that was almost stolen from him by a famous French botanist. Pollination is absolutely necessary (a task naturally performed by hummingbirds and bumblebees), which makes it the world's only hand-pollinated crop (Mabberley, 2017, p. 959), and drives the price high. The seed-pods are hand picked when near-ripe and still green. Vanilla production requires a rigorous treatment: the beans are briefly put in boiling water, whence the heat disrupts the maturing process and activates enzymes responsible for vanillin production – the main compound that supplies the flavour. Then, the beans are dried on the sun for weeks, during which the vanilla sticks attain their dark brown, shiny colour. In some cases the vanilla beans are left in boxes to ferment up to 9 months, to attain quality flavour (van Wyk, 2014, p. 282). This often results in an effect where the tiny, white vanillin crystals are noticeable on the beans, similar to frost.

## History of Vanilla

The Aztecs, but originally Mexicans of Vera Cruz, used vanilla (*Tlilxochitl*) to flavour cacao drinks.<sup>1,2</sup> A Mexican monopoly was broken when plantations were established on Réunion and Madagascar by the French and on Java by the Dutch.<sup>1,2</sup> Today, vanilla is also cultivated in other tropical regions, including the West Indies, Central America and Indonesia.

### 4.20.1 The Names of Vanilla

#### English

The English word *vanilla* was loaned from Spanish *vainilla* and attested first in 1662: “[...] so they added *Tlilxochitl*, or the *Vaynillas* [to the chocolate] for the like ends, and to strengthen the brain, and womb.” (Stubbe, 1662, p. 11). The author here is explaining how the “Indians” – the Aztecs – flavoured their chocolate drinks. Spanish ‘*vainilla*’, used for the American aromatic plant, was first recorded in 1555. *Vainilla*, literally ‘little vegetable pod’, is the diminutive form of *vaina*, meaning ‘scabbard, sheath’ or ‘shell, husk’ in the botanical sense. (Corominas, 1987, p. 596; Gómez de Silva, 1985, p. 538). *Vaina* descended from Latin *vāgīna* ‘scabbard, sheath; covering, holder of anything’, i.e. husks that enclose an ear of grain

**Etymology 49.** English *vanilla*, 1662 < Spanish *vainilla* ‘id.’ [little sheath, little pod], from *vaina/vaína* ‘scabbard, sheath; pod, husk’ + *-illa* diminutive suffix, 1555 < Latin *vāgīna* ‘scabbard, sheath; covering, holder of anything’, esp. husks that enclose an ear of grain; also by anatomical figurative sense, origin of *vagina*<sup>a</sup>

<sup>a</sup>OUP (n.d., s.v. *vanilla*); Gómez de Silva (1985, p. 538) and Corominas (1987, p. 596); C. T. Lewis and Short (1879, s.v. *vāgīna*)

#	Species	Name	Source
1	<i>Vanilla planifolia</i>	Bourbon vanilla	Wikipedia (n.d.)
2	<i>Vanilla planifolia</i>	French vanilla	Wikipedia (n.d.)
3	<i>Vanilla spp.</i>	vanilla	van Wyk (2014)
4	<i>Vanilla tahitensis</i>	Tahitian vanilla	Wikipedia (n.d.)

Table 4.79 Various names for vanilla in English.

### Arabic

#	Species	Name	Tr.	Gloss	Source
1	<i>Vanilla planifolia</i>	<i>fānīliyā</i>	phonetic		Baalbaki (1995)
2	<i>Vanilla planifolia</i>	<i>wanīliyya</i>	وَنِيلِيَّة		Baalbaki (1995)

Table 4.80 Various names for vanilla in Arabic.

### Chinese

#	Species	Name	Tr.	Gloss	Source
1	<i>Vanilla planifolia</i>	香草	<i>xiāngcǎo</i>	fragrant-grass/herb	DeFrancis (2003)

Table 4.81 Various names for vanilla in Chinese.

### Summary

#	Language	Term	Gloss	Loan	Source
1	English	<i>vanilla</i>		yes	OUP ( <a href="#">n.d.</a> )
1	Arabic	<i>fānīliyā</i>	phonetic	yes	Baalbaki ( <a href="#">1995</a> )
2	Arabic	<i>wanīliyya</i>		yes	Baalbaki ( <a href="#">1995</a> )
1	Chinese	<i>xiāngcǎo</i>	fragrant-grass/herb	no	DeFrancis ( <a href="#">2003</a> )

Table 4.82 Conventionalized names for vanilla in English, Arabic, and Chinese, found in dictionaries.



# The Diffusion of Spices

**I**n this chapter, I will present the findings on the diffusion of spices, by looking at the distribution of spice plants and their primary names. First, an overview about the spices' geographical distribution will be presented, then, a discussion on their spread and *spreadability* will ensue.

Lastly, I will present my findings on the diffusion of wandering spice names along spatial and temporal trajectories, and how it relates to the botanical reality. The aim of this chapter is to have an understanding of how spices spread around the globe as informed by their names and etymologies, but at the same time supported by the evidences and current state of their physical diffusion.

## 5.1 The Geographic Distribution of Spices

In general, it is true that spices come from the hot and humid tropical regions, especially Asia. However, there are number of aromatic plants that originate from more temperate regions, here we should think about the umbelliferous plants of the West and Central Asia: asafoetida, fennel, cumin and caraway, and others, and we must not forget the three American spices: chile, vanilla, and allspice. Figure 5.1 shows the macroareas where the 24 spices originate.

Botanical databases, such as [POWO](#), often show distribution and give us the regions where a plant is *native* to, and where it has been *introduced*. “Introduced” means that the plant is not native in the area, but now grows wild due to human intervention—whether the plant escaped cultivation, or became naturalized after accidental introduction—or due to natural spreading. Looking at this information reflects on the plants’ ability to adapt and grow in new places, but also hints on how human usage and transmission affected habitats. I have collected this information and used it to compare the spices in question. I have simply counted the native and introduced regions, and added them up. In figure 5.2, you can see the spices ranked by the total number of the regions they grow in, including both native and where the plants were consequently introduced. I would like to highlight that the highest ranks are occupied by aromatic plants that are also herbs, both in the botanical and in the culinary definition. This makes sense, since these plants—e.g., fennel, coriander, dill, fenugreek, etc.—are not only cultivated for their seeds, but the leafy green parts are made use of as well, so it is without question that the whole plant “travels” to new places, not only its product. People transplant their ingredients whenever they can, unless the primary goal of cultivation is purely profit.<sup>1</sup>

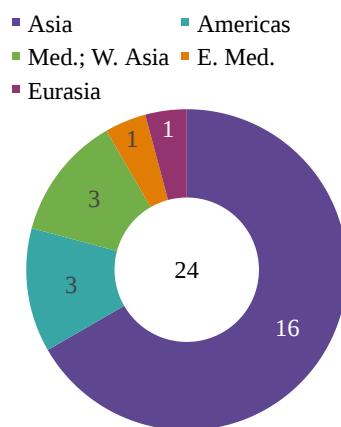
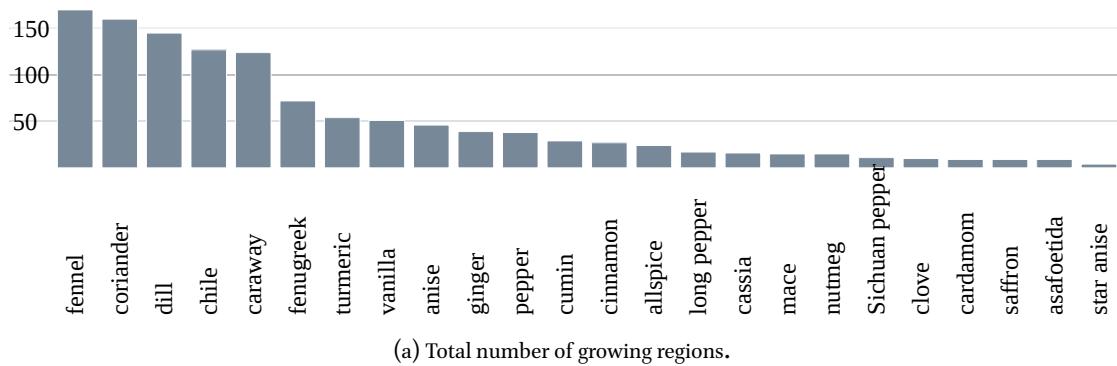
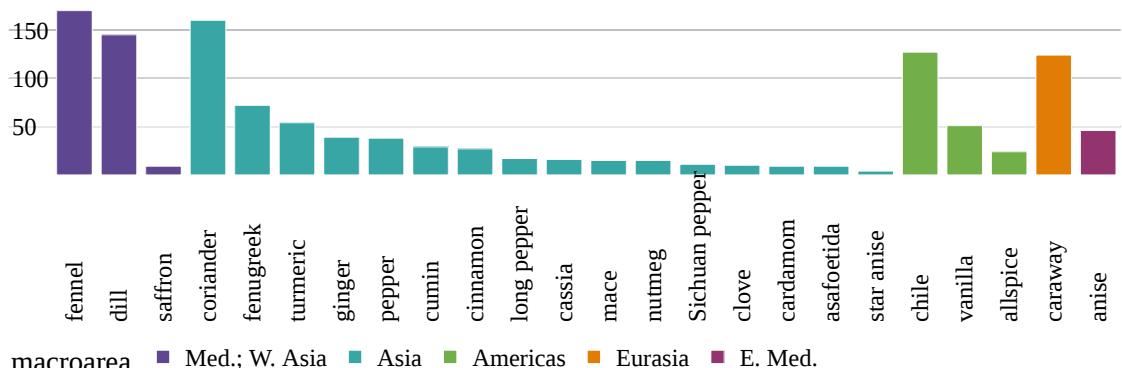


Figure 5.1 The distribution of spice plants by the macroarea of their native habitat.

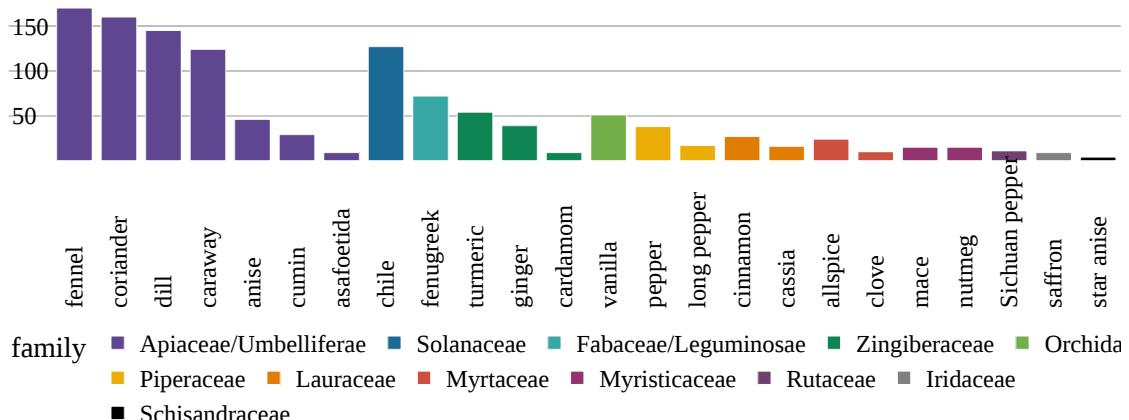
<sup>1</sup>The Dutch for example actively destroyed plant habitats, and wiped out whole islands—including the population—in the Spice Islands of Indonesia to generate scarcity and ramp up value during their monopol rule in the 17<sup>th</sup> century.



(a) Total number of growing regions.



(b) Spices by total number of growing regions, grouped by macroarea.



(c) Spices by total number of growing regions, grouped by family.

Figure 5.2 Spices ranked according to the total number of regions they grow in, both native and introduced.

The far side of the ranking also shows the spices that do not grow extensively across many regions, regardless of how valuable or popular they are. Of course, behind this, are the complex issues of plant biology, ecology and the many factors that decide a plant's resistance to transplantation and if it can grow in new, alien environments. However, there is another point to notice here: labor. The lower ranks feature spices that are highly labor intensive to cultivate and harvest, including star anise,

cardamom, and saffron, but the collection of asafoetida is cumbersome as well, and this also effects prices. Interestingly—and of course, closely related what was just said—all of these are products that are very specific plant parts, the pericarps (star anise, Sichuan pepper), dried oleo-gum-resin, (asafoetida), stigmas (saffron), and dried flower buds (cloves). Figure 5.2 also shows a grouping by macroarea and by plant family as well.

## 5.2 The Spreadability of Spices

When it comes to spices of commerce, there is a factor that greatly weighs in on their diffusion: their ability to spread. I have noticed that while some spices were very expensive at some point in time (or still are) others, with the same levels of demand, were never particularly costly. Related to the ideas of supply and demand, the answer to this question was scarcity; or in this case, the lack thereof. To put it simply, a spice was expensive if it was rare or its supply was tightly controlled (not unlike diamonds today). Spices that could be easily grown anywhere were transplanted early on and were therefore not considered for their lavish returns, however venerated and influential they were. The two best examples for this are ginger and chili.

If you have ever left a knob of fresh ginger on your kitchen counter for weeks or even months, you might have noticed that it does not rot, it will eventually sprout and start growing a plant (similarly to an onion or a potato). And if you want more ginger root later, you should put it into a pot of soil. This was the secret of gingers' prehistoric success, which is most well known in connection with Austronesian expansion that began around 5000 years ago, populated the Pacific, and generally believed to have unfurled out of Taiwan (Mirabal et al., 2013). The early Austronesians carried ginger everywhere on their migrations into Maritime Southeast Asia and the Pacific on their outrigger boats (a native Austronesian invention that enabled people to reach as far as Hawaii and Madagascar), as it was a valuable source of nutrition with added medicinal value (see Dalby, 2000, pp. 21–25). Ginger with its numerous health benefits strengthens the immune system, and was therefore an invaluable crop to carry on long ocean voyages and was a constant feature onboard ships of maritime Asia (compare the “discovery” of lemon’s effectiveness against scurvy by British naval doctor James Lind in 1747 (Allan, 2021)). Accordingly, there is a reconstructed Proto-Oceanic term for ginger, \**laqia* (Bellwood et al., 2006, p. 52), and a Malagasy term for ginger seems to correspond to a Sanskrit etymon: *sakarivo* < *śrigavera* (Adelaar, 1994, p. 41). More recent genetic and archaeobotanical studies support the Austronesian expansion theory, which in the past two centuries was solely standing on linguistic grounds and reconstruction. The names of ginger are among the linguistic clues that helped anthropologists, ethnographers and linguists establish a chronology. But there is a botanical clue as well that this is a very ancient spice and a long-term product of trade: it is not found in the wild anymore (Ravindran & Nirmal Babu, 2005). Although it is naturalized in India, it is believed to originate in Southeast Asia (Ravindran & Nirmal Babu, 2005). The ease of ginger rhizomes’ transportation over long distances means that it has spread to other tropical and subtropical regions at a very early time, making the primary center of domestication hard to locate. It was hence called the most widely cultivated spice (Lawrence, 1984), which I am almost certain today would be the chili pepper. Dalby

(2000) also points out that because humans propagate ginger for millennia by splitting the rhizome, it has also lost its ability to be grown from seeds.

Chili on the other hand can reproduce from seeds, and easy to grow in temperate areas as well. So much so that the American spice became an integral part of many European, African, and Asian cuisines in less than a hundred years since its introduction by the Portuguese, and many often forget that it in fact came from the New World. The red peppers were introduced to Hungary by the Ottomans soon after their conquest marked by the Battle of Mohács in 1526, hence the initial name *törökbors* [turkish-pepper (of *Piper nigrum*)], but Hungarian *paprika* (attested in 1748, a borrowing from *Serbian-Croatian-Bosnian (SCB)*)<sup>2</sup> soon came to be an integral part of Hungarian cuisine and identity. Chilies reached Asia soon as well, Dott (2020) in his well researched book about the cultural history of the chile in China writes that an 1614 Korean encyclopedia noted “Now it is grown everywhere [in Korea]”, which means it has been introduced to Korea before, and even in 1621, some Chinese *bencao* author believed it to come from Sichuan! “It comes from central Shu [Sichuan]. Now it is found everywhere.”—reports the *Shiwu Bencao* (Dott, 2020, pp. 24, 28).

And so, it is clear that some spices spread more easily than others, affecting trade patterns, prices, and the diffusion of names. But how to compare this? How to measure it? To have a basic understanding of what effect spices’ ease or difficulty to spread can have on their diffusion, value, and global popularity, I created a rudimentary metric based on geographical-botanical data from **POWO** (POWO, 2022b). I will call this *spreadability*. I have simply divided the sum of the introduced regions with the sum of the native regions to serve as a crude indicator of how “well” a spice plant have spread. Intuitively, this index is about spice plants’ ability and “ecological willingness” to spread to new regions, whether it is a result of human hands (by trade and transplantation) or nature (self-seeding, spread by birds, etc.) into neighboring areas.

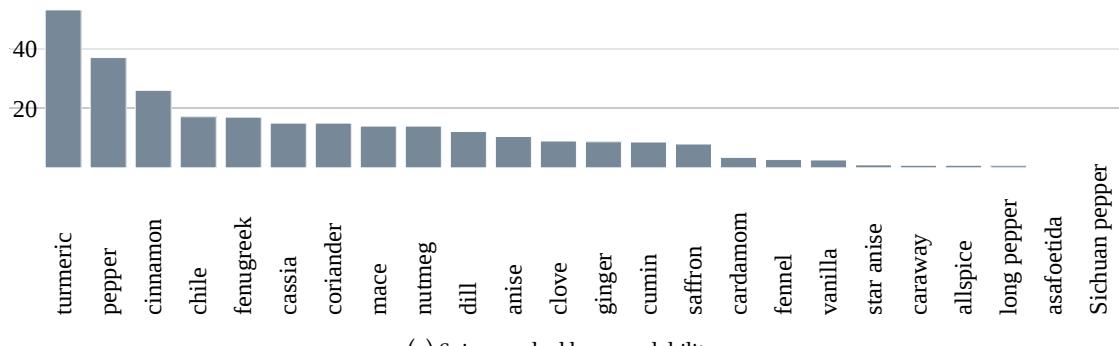
$$\frac{\sum \text{region}_{\text{introduced}}}{\sum \text{region}_{\text{native}}} = \text{spreadability index}$$

This metric accounts for the initial difference between if a spice was minimally distributed (i.e. only found in one or two regions), or well distributed before being introduced to either a few, or many new places. Figure 5.3 shows the spices ranked by their spreadability index. The figure shows for example tumeric, originally from “one region” (India), is now found in 53 other regions, resulting in the highest score of 53. On the far side of the plot, we can find Sichuan pepper, whose main source, *Zanthoxylum bungeanum* is indigenous to 10 geographical zones in China, but only have been introduced to one region (Uzbekistan), getting a low score of 0.10.

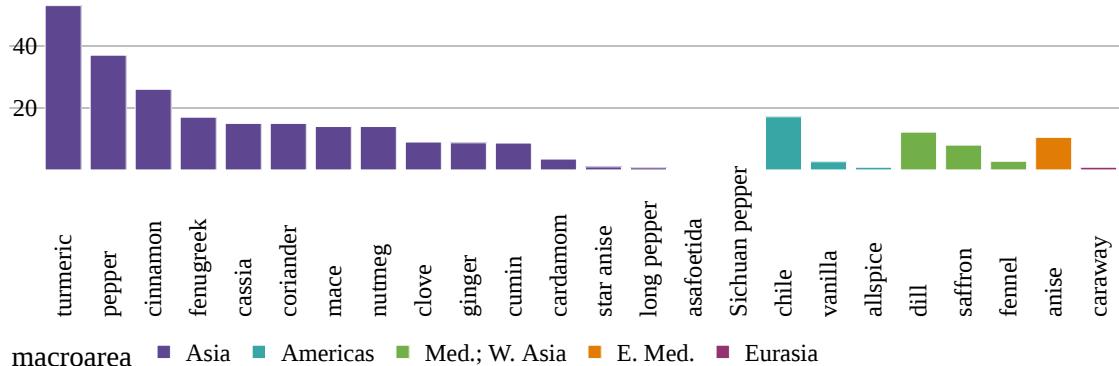
The results of this graph—like any other—greatly depend on the data we feed to it, and like any other quantitative analysis, has its limitations. Although the regions in the **POWO** database are uniform, they are not clear-cut ecological zones, but rather based on administrative divisions of countries, and it is not perfect. While some large countries are divided to broad areas that represent different biodiversity zones, the borders are arbitrary. For example, the United States, Australia, Russia, and China are divided by states, provinces, or greater geographical areas (e.g., New South

---

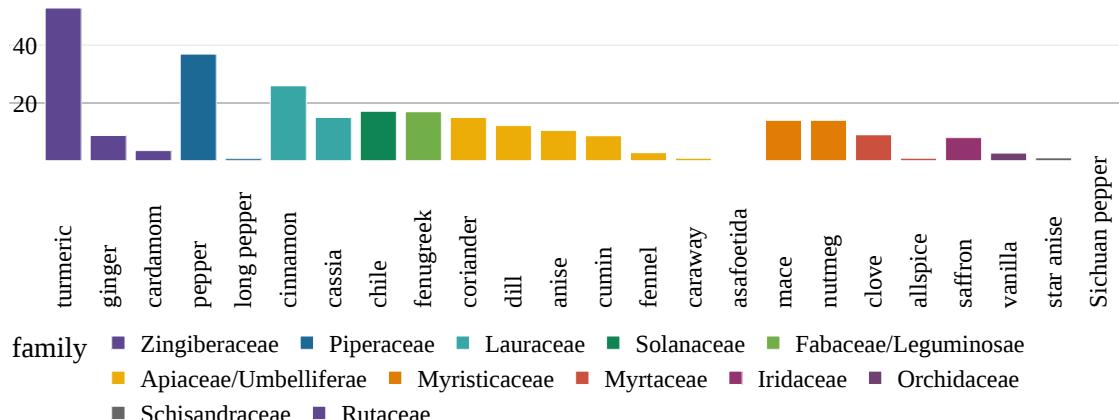
<sup>2</sup>Zaicz, 2006, paprika.



(a) Spices ranked by spreadability.



(b) Spices ranked by spreadability, grouped by macroarea.



(c) Spices ranked by spreadability, grouped by family.

Figure 5.3 Spices ranked by their spreadability index, showing which spice plants spread to more regions, taking into account the initial state of their distribution.

Wales, Central European Russia, China South-Central) India is just one unit, explaining the very high score of turmeric.<sup>3</sup> Nonetheless, in terms of general usefulness the index has some merit. If we look at the distribution map of turmeric,<sup>4</sup> we will see that it did indeed spread far and wide, from Southeast

<sup>3</sup>Another limitation might be the age of this database as we find zones named Yugoslavia, or Czechoslovakia, but I doubt the biodiversity changed as much as political borders.

<sup>4</sup>*Curcuma longa* on POWO: <https://powo.science.kew.org/taxon/796451-1#distribution-map>

Asia through West Africa to the Caribbean, and compared with Sichuan pepper<sup>5</sup>—which is still mostly limited to China—is much more well known globally. Figure 5.3 (b) and (c) also show the spices ranked by their spreadability index, broken down by macroarea and plant family. I have included the plant family groupings because it can be very interesting to those with affinity to the plant sciences. But truthfully, this particular grouping would be much more exciting when including more plants in these analyses.

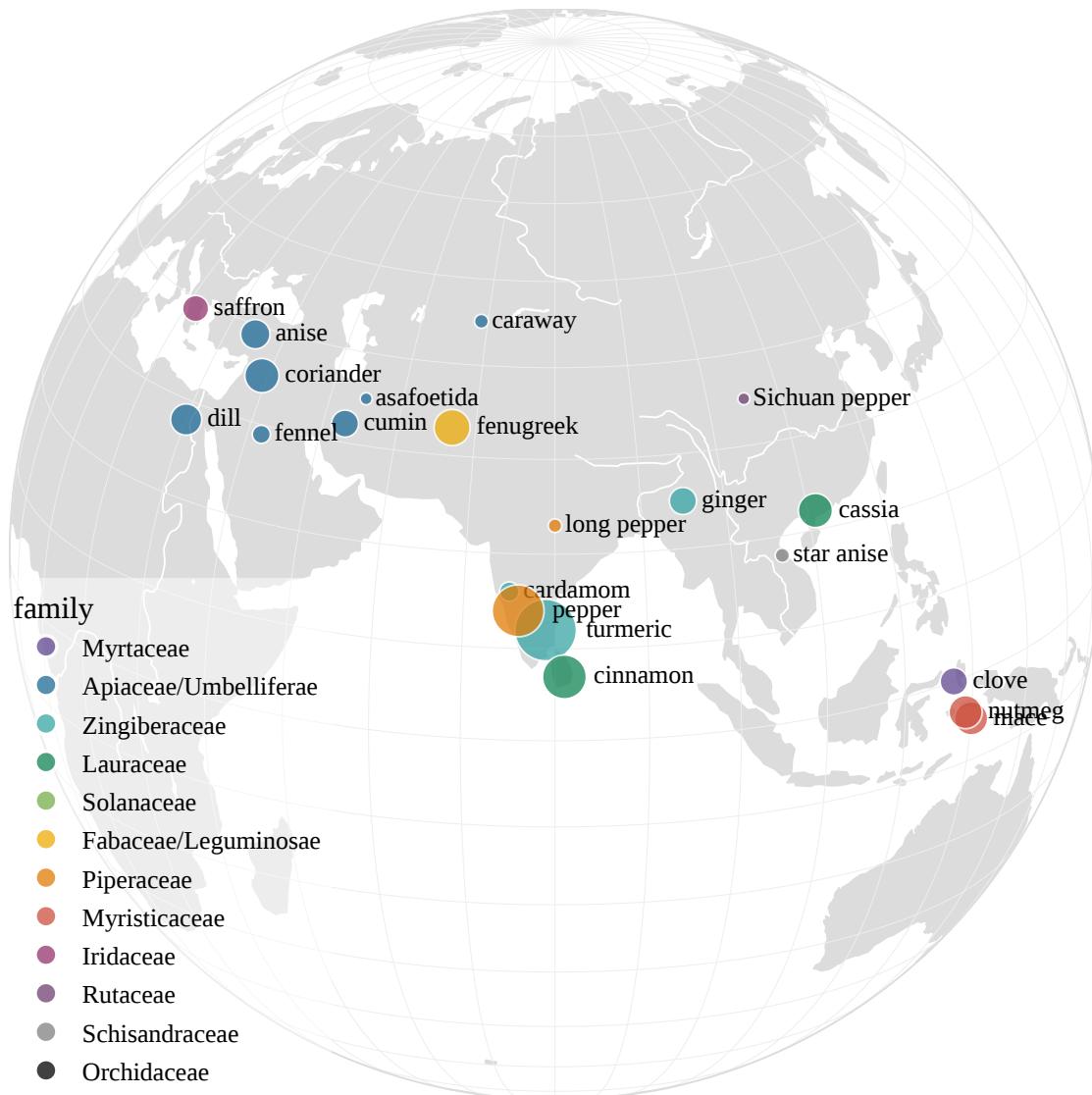


Figure 5.4 The approximate geographical origins of the spices in this thesis; size represents their spreadability index. For a full interactive version, please visit [https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/spices\\_map.html](https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/spices_map.html)

Based on my readings and data from the botanical databases, I have tried to approximate the geographical origins of each spice in the thesis. Figure 5.4 shows this attempt, plotted onto the globe. In cases, where a spice's supposed native area includes a large number of expansive regions, I have opted

<sup>5</sup>*Zanthoxylum bungeanum* on POWO: <https://powo.science.kew.org/taxon/775625-1/#distribution-map>

for a geospatial mid-point as a compromise. Therefore, you can see caraway placed in the middle of Eurasia, because I used the coordinates for Eurasia, as it is marked native everywhere in Eurasia in the database. Most spice plants *fortunately* do not have so extensive native areas, and in many cases the exact origins can be pinpointed. For example, see the case of cinnamon, nutmeg, or cloves neatly situated on tiny islands of the Moluccas in present day Indonesia. The size of the data-points correspond to the their spreadability values, and they indicate very clearly that South Asian spices had a tremendous “success” in terms of global diffusion.

What we can know about the diffusion of spices beyond the botanical evidence, is in the history of their names. In most cases, the spice names spread with the materials, and have left a trace. Moreover, these linguistic traces—together with the close study of their history—can help us match or reconstruct the exact routes the materials took, accounting for important communities and cultures that have played important roles in their dissemination. The following section will focus on this phenomenon.

### 5.3 The Linguistic Diffusion of Spices

At last, turning towards the language element of spice diffusion, I will now illustrate the linguistic diffusion through the investigation of spice terminology and their spread on spatial and temporal dimensions, by tracing loanwords and analyzing attestation timelines. Before introducing the etymological findings, I must touch upon the terms’ borrowed status, which I have previously introduced briefly in section 3.2.2. Accordingly, this chapter focuses on the borrowed elements of spice terminology.

#### 5.3.1 Borrowings: Loanwords and *Wanderwörter*

In order to accurately compare the itineraries of loanwords and *Wanderwörter* in a trilingual setting, I had to determine which spice names are in fact borrowed, and which are native derivations/inventions. In most instances, it is rather obvious if a word is a borrowing or not, while in others, it was not so easy to determine. For example, I initially assumed that *Sichuan pepper* (which does not occur in English dictionaries) is an English construction and therefore not a borrowing, but after trying to find its source, I learned that it is a calque (loan translation) from Chinese 川椒 *chuanjiao* [Sichuan pepper]<sup>6</sup>, devised in the field of herbal medicine (Hooper, 1929, p. 140). In short, I analyzed the names based on their borrowed status to find loanwords. The result of this analysis on the default names of the 24 spices can be seen in table 5.1.

The most important finding is that English has by far the most loaned terms in the spice domain—according to our modest sample of spices—followed by Arabic, and finally Chinese. Out of the 24 default names, there are 21 borrowings in English, 17 in Arabic, and 8 in Chinese. Figure 5.5 show the ratio of borrowings concisely. Of course, this figure alone can be misleading, since the difference in ratio between the languages is not representative only of the spice domain; the English lexicon has a

<sup>6</sup>Which uses the prototype spice word in Chinese, prefixed with the second character of Sichuan province (originally meaning ‘river’).

#	English	Borrowed	Arabic	Borrowed	Chinese	Borrowed
1	allspice	-	fulful ifranjī	-	duōxiāngguǒ	+
2	anise	+	anīsūn	+	huíqín	-
3	asafoetida	+	ḥiltīt	+	āwèi	+
4	caraway	+	karāwiyā	+	gělǚzi	+
5	cardamom	+	hāl	+	dòukòu	?
6	cassia	+	salīkha	-	ròuguì	-
7	chili	+	fulful hārr	-	làjiāo	-
8	cinnamon	+	qirfa	-	xīlánròuguì	+
9	clove	+	qaranful	+	dīngxiāng	-
10	coriander	+	kuzbara	+	yánsuī	-
11	cumin	+	kammūn	+	zīrán	+
12	dill	?	shibithth	+	shíluó	+
13	fennel	+	shamar	+	huíxiāng	-
14	fenugreek	+	ḥulba	-	húlúbā	+
15	ginger	+	zanjabīl	+	jiāng	-
16	long pepper	+	dārfilfil	+	bìbō	+
17	mace	+	basbās	+	ròudòukòugānpí	-
18	nutmeg	+	jawz al-ṭib	+	ròudòukòu	-
19	pepper	+	fulful	+	hújiāo	-
20	saffron	+	za'farān	+	fānhónghuā	-
21	Sichuan pepper	+	fulful sītshuwān	-	huájiāo	-
22	star anise	-	yānsūn najmī	-	bājiāohuíxiāng	-
23	turmeric	+	kurkum	+	jiānghuáng	-
24	vanilla	+	fānīliyā	+	xiāngcǎo	-

Table 5.1 Spice nomenclature, showing if the terms are borrowed (+), not borrowed (-), or maybe borrowed (?).

large number of loanwords in general. Dictionaries especially have a high amount of loanwords, but everyday communication features them greatly as well. For example, out of the top 1000 most frequent words in the *British National Corpus (BNC)*, more than half are borrowed (usually from French and Latin) (Durkin, 2014, p. 38). We should always approach the percentage of loanwords in a language with caution and I will not cite numbers, but from my studies I know that the percentage of loanwords in English is certainly higher than it is in Arabic, and Chinese, which prefer to coin words using native elements.

Word formation in Arabic most often happens internally by utilizing the possibilities of the highly productive root system, but it seems that in the spice domain, loanwords entered the Arabic vocabulary at high rates as well. Thankfully, the semitic root system and the rules of Arabic word patterns make it easy to spot loanwords. For example, if we take the words *zanjabil* ‘ginger’, *za'farān* ‘saffron’, or *qaranful* ‘cloves’, we can be sure that these are loanwords for the following reasons: There are no native quinqueliteral (five letter/consonant) roots in Arabic, the few existing ones are borrowings. Furthermore, there are no true “broken plural”, or related verbal forms for these words. Interestingly, a large amount of Persian (and other) loanwords in the domain of plants, fruits, and

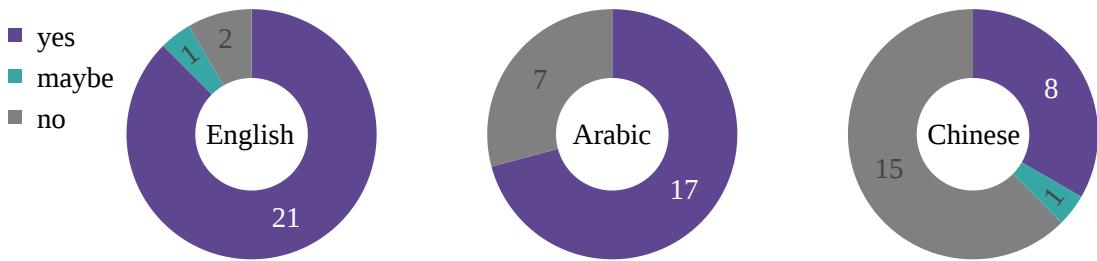


Figure 5.5 Ratio of borrowed terms in the spice nomenclature across the three languages, based on table 5.1.

vegetables have five-consonant roots, including eggplant, cauliflower, parsley, and oranges.

My knowledge on Chinese word formation is rather limited, but I would like to mention some phenomena. Firstly, it is well known that while Classical Chinese operated with monosyllabic, single-character words, modern Chinese has a strong tendency to prefer disyllabic words, mainly to disambiguate homophones. Therefore, only the most ancient spices would have a monosyllabic etymon, Sinograms that convey the meaning of the spice on their own (e.g., *jiao* ‘pepper’, *jiang* ‘ginger’, *gui* ‘cassia’). In modern Chinese, ginger is the only one that still can stand alone, pepper and cassia are always affixed with modifiers to distinguish them from other items, and to fit the disyllabic trend. Loanwords will also often conform to this trend (e.g., *awei* ‘asafoetida’, *bibo* ‘long pepper’, ‘ziran’), and become disyllabic in Chinese when integrated. Tri-syllabic loanwords are often historical in this domain and not a common feature in day-to-day usage; they are not an integral part of the conventionalized vocabulary (e.g., *zafulan* ‘saffron’ *huluba*, ‘fenugreek’, *geluzi* ‘caraway’). Secondly, I want to highlight the curiosity of phono-semantic matching. In Chinese, loaned elements are sometimes incorporated by words that are phonetically similar and semantically related, thus hiding the word’s or morpheme’s borrowed quality. For example, *husui*, a name for coriander literally meaning ‘barbarian coriander’ is supposed to be a phono-semantic matching of an Iranian term (\**koswi*, \**košwi*, \**gošwi*), according to Laufer (1919). I will discuss the naming of newly introduced items in more detail in the next chapter.

The fact that English has many loanwords in the spice domain is not surprising if we consider that all of these aromatic products are *exotic*, they are not from anywhere near England, or the Saxon homeland. As for Arabic, we know from the history of the spice trade that virtually all materials from Asia passed through the Arabian Peninsula, and the names of many spices with origins in West Asia predate the Arabic expansion of the 7<sup>th</sup> century and therefore in Arabic, many are loanwords from other Semitic languages. Loanwords in Chinese in the spice domain are much fewer in number, with most of the historic words being Silk Road terms, or contemporary creations for those introduced in modern times.

### 5.3.2 Spatial Trajectories: Tracing Spice Terms Around the Globe

In order to present the findings in a convenient, reader friendly, and interesting way, I turned to geospatial mapping. The plots seen in this section are made possible by utilizing the etymological

data on spice terminology, collected and introduced for each spice in chapter 4, and justified in section 3.2.3. When creating these visualizations, I have included relevant historic names beyond the 24 default terms (such as *amomum*, *dārṣīnī* ‘cinnamon’, or *xīngqu* ‘hing’), and I have also left out terms that are not borrowings. Therefore, you will not find words on the plots such as *allspice*, *qirfa* ‘cinnamon’, or *hujiao* ‘black pepper’.

### Spices Flow Into Europe: The Case of English

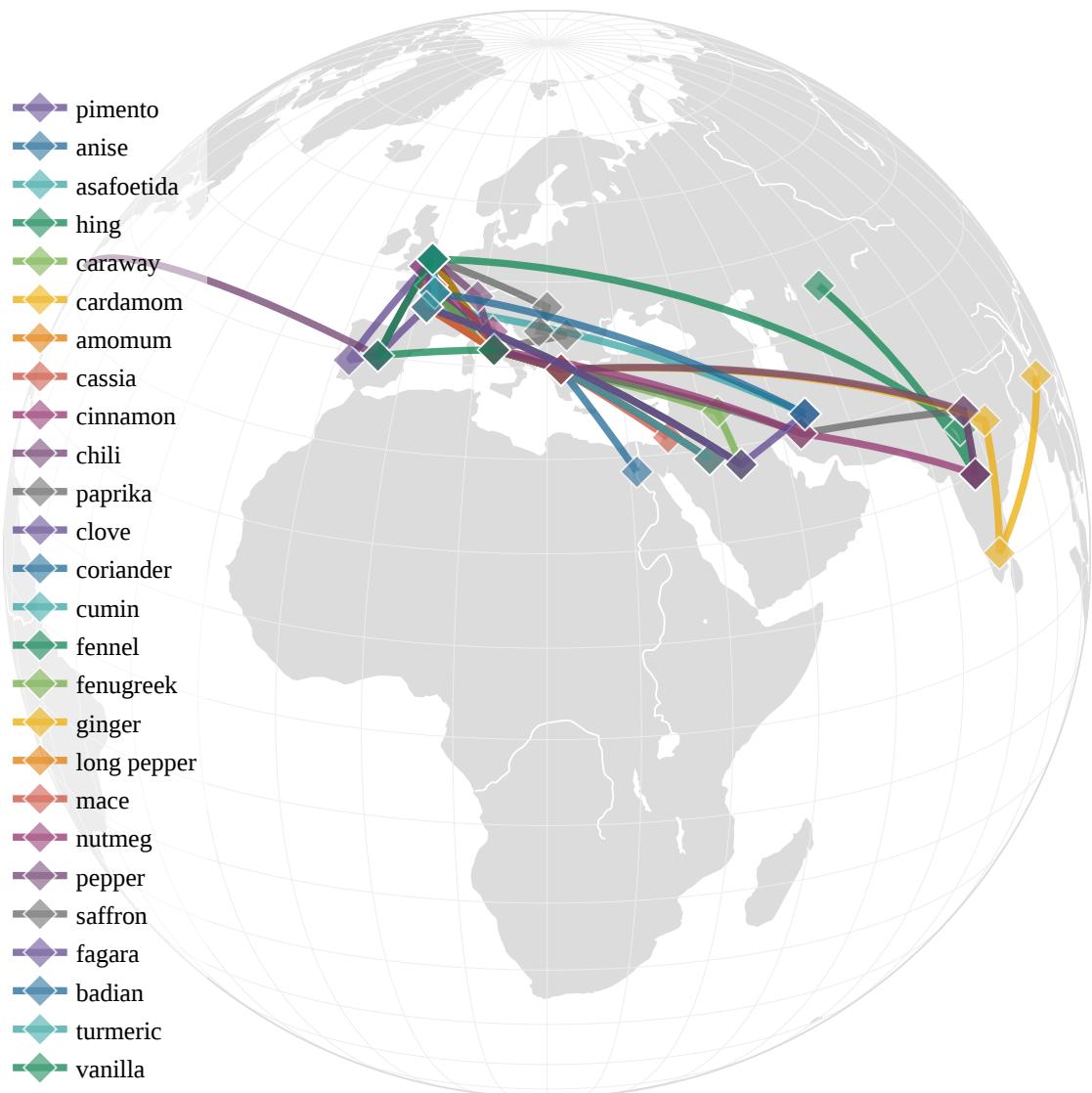


Figure 5.6 The diffusion of spice terminology in English, focusing on loanwords and Wanderwörter. For a full interactive version, please visit [https://htmlpreview.github.io/?https://github.com/partigabo/r/phd-thesis-viz/blob/main/diffusion\\_en.html](https://htmlpreview.github.io/?https://github.com/partigabo/r/phd-thesis-viz/blob/main/diffusion_en.html)

Figure 5.6 shows the diffusion of spice names viewed from the progression of the words' etymological stages into English. Words that were coined in English (i.e. not loanwords), are not present. What we see here, is a very clear trend in the dispersion of English spice terminology to have an East-to-West

directionality. Besides the few spices that came from the Americas, all via Spanish (*chili*, *pimento*, *vanilla*, where *chili* is represented by the single line crossing the Atlantic Ocean pointing to a Nahuatl etymon) after the 15<sup>th</sup> century, the majority of spice terms are oriental in origin, and have long histories reaching into times of antiquity and beyond.

**Note 5.3.1.** The geospatial plots in this section (fig. 5.6, 5.7, and 5.8) are a static version of interactive graphs available online via clicking the links given in the captions. I highly recommend examining these visualizations, as they supply further details on the words' histories, and most importantly, the traces can be isolated by double clicking on an item in the legend allowing for a clearer view and comparisons.

As far as space and distance go (and probably time as well), the most remote *Wanderwort* seems to be *ginger*, whose source can be traced back to a Dravidian language of South India, but even that has been identified as a loanword from an unknown Southeast Asian language<sup>7</sup> (cf. 38). Based on the cognates in surrounding unrelated languages (Khasi, Thai, Old Chinese), we can assume that ginger in a very early *Wanderwort* of the region going back to a Proto-Tibeto-Burman reconstructed form, /\*kjan̥/ (Matisoff, 2003, p. 302). Even more exciting is the fact that besides English, the Arabic and Chinese words for ginger originate in the same etymon as well (cf. ??). Besides the extreme case of *ginger*, we should take note that words from India have passed through Persia and Arabia, and in the final stages, almost every loanword have arrived via French and/or Latin.

### Spices through Arabia: The Case of Arabic

Arabic loanwords in the spice domain reflect where the Arab merchants sourced their spices from; either overland via Persia or by sea from India (e.g., *fulful* 'pepper', *dārṣīnī* 'cinnamon', *dārfīlī* 'long pepper', etc.). Regional Semitic borrowings are also present, these include spices that originate relatively close to Arabia and the people of the region knew and used them already; e.g., *kammūn*, *shibitt* 'dill', *shamar* 'fennel' traced back to Akkadian.

### Spices in the Middle Kingdom: The Case of Chinese

#### 5.3.3 Temporal Trajectories: The Attestation of Spice Words

After the investigation of how spice names reached English, Arabic, and Chinese on spatial trajectories, let us now look at how they have spread across time. One of the most exciting part of this thesis is the data that was collected regarding dates of attestation. In other words, I tried to find the earliest possible mentions for each spice, and then combine this information in a way that enables us to see the diffusion of spices span throughout the history of a language and culture. This information is a valuable indicator, as it shows the approximate times of the earliest contact and introduction of the materials. In essence, we can grasp the history of the spice trade in the words: when they

<sup>7</sup>OUP, n.d., *ginger*.

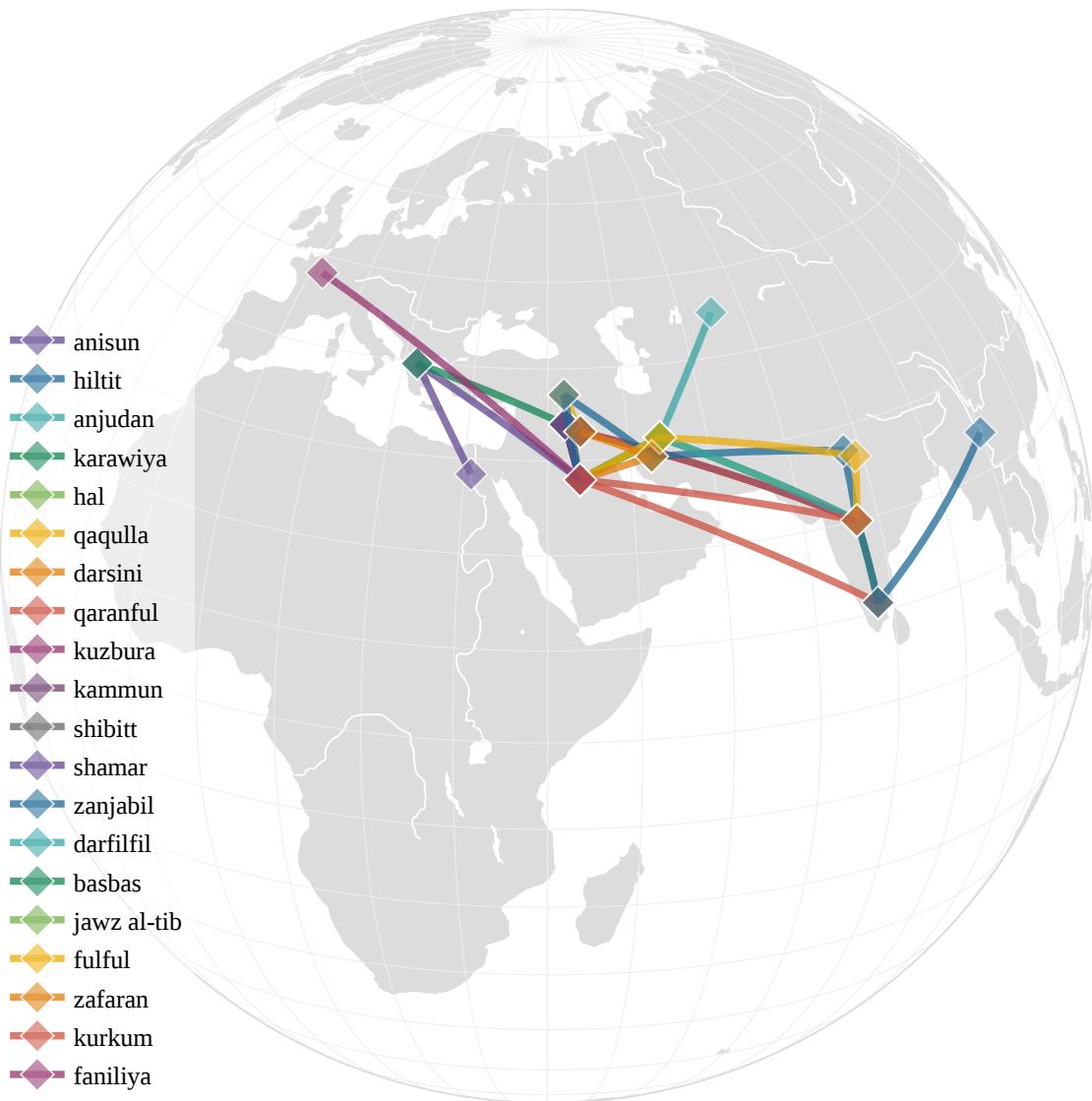


Figure 5.7 The diffusion of spice terminology in Arabic, focusing on loanwords and *Wanderwörter*. For a full interactive version, please visit [https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion\\_ar.html](https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion_ar.html)

arrived, which spices were the earliest to be recorded, and which ones make the latest additions to our vocabularies and spice cabinets. Here as well, from the nearly 400 names, I have used the selected few that—for lack of a better word—I marked with “default”. To make the attestation visualizations easy to read, I only used the default terms, and a small number of historic terms that precede the contemporary default ones. This allows for a less packed and cleaner plot and offers a way to compare the attestations in the three languages.

The following figures should give a bird’s eye view of the history of the spice domain, and its mark on vocabulary. In figures 5.9 to 5.11, you can see the timeline of the spice nomenclature language by language. Not surprisingly, these figures will show that the native spices that are to be found the closest to the homeland of the ancestors of English, Arabic, and Chinese speakers, have been recorded

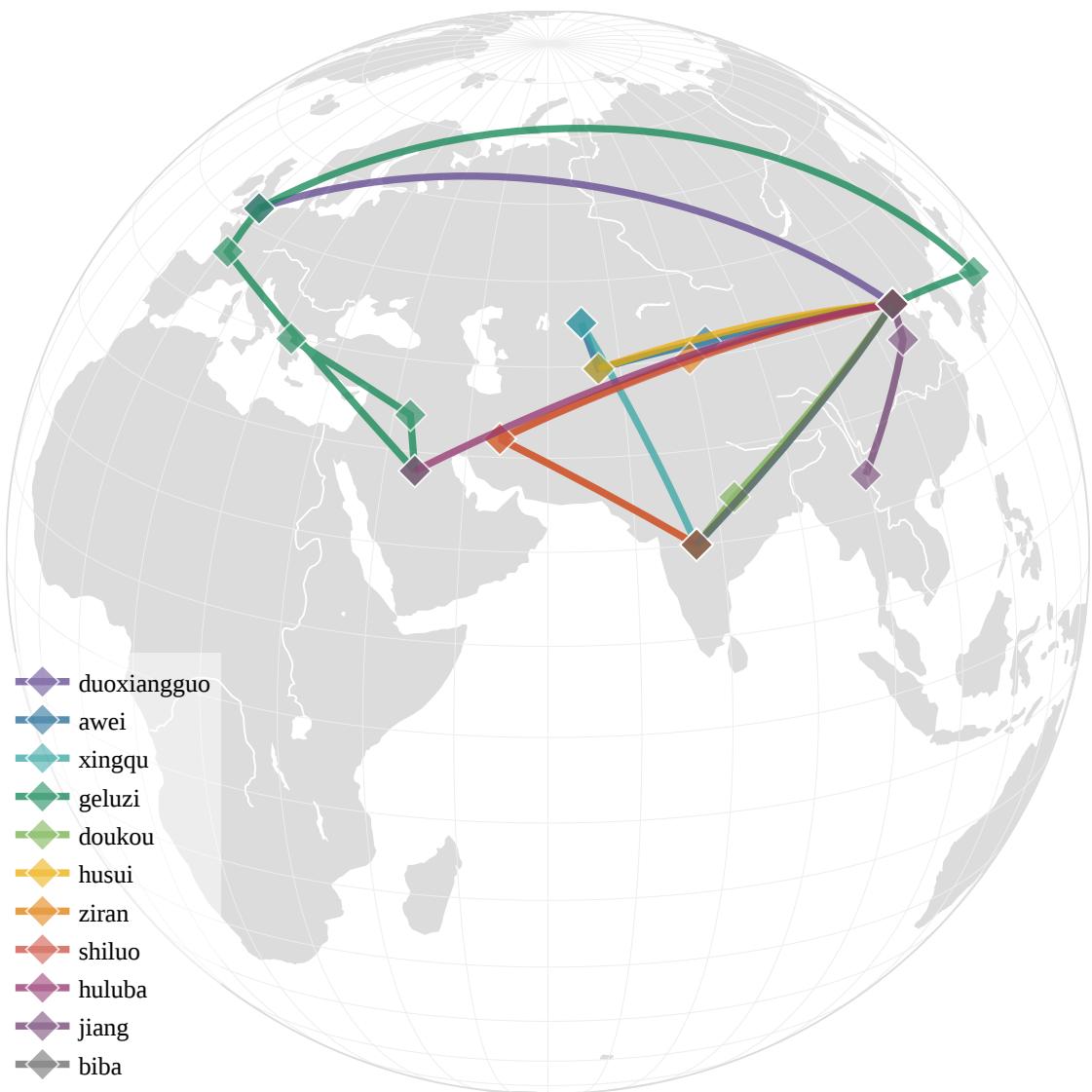


Figure 5.8 The diffusion of spice terminology in Chinese, focusing on loanwords and *Wanderwörter*. For a full interactive version, please visit [https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion\\_zh.html](https://htmlpreview.github.io/?https://github.com/partigabor/phd-thesis-viz/blob/main/diffusion_zh.html)

first. See dill and fennel in English, saffron and fenugreek in Arabic, and Sichuan pepper and cassia in Chinese. If we reflect back to the geographical origins of the spices (figure 5.4) the figures also show which are the earliest products of transnational trade, those that spread first despite their origins were distant and unknown to the early recipients. Primarily, these include pepper and ginger, which we already discussed were ideal candidates because of their resistance to long-haul transportation and high scores of spreadability.

In the final trilingual plot in figure 5.12 I have produced a compact version of the same data, arranged by language. There is a chance to compare the main attestation periods for these items, and I added an accompanying histogram to better see which periods have seen the emergence of new spice words, indicating both flourishing periods of literature and trade.

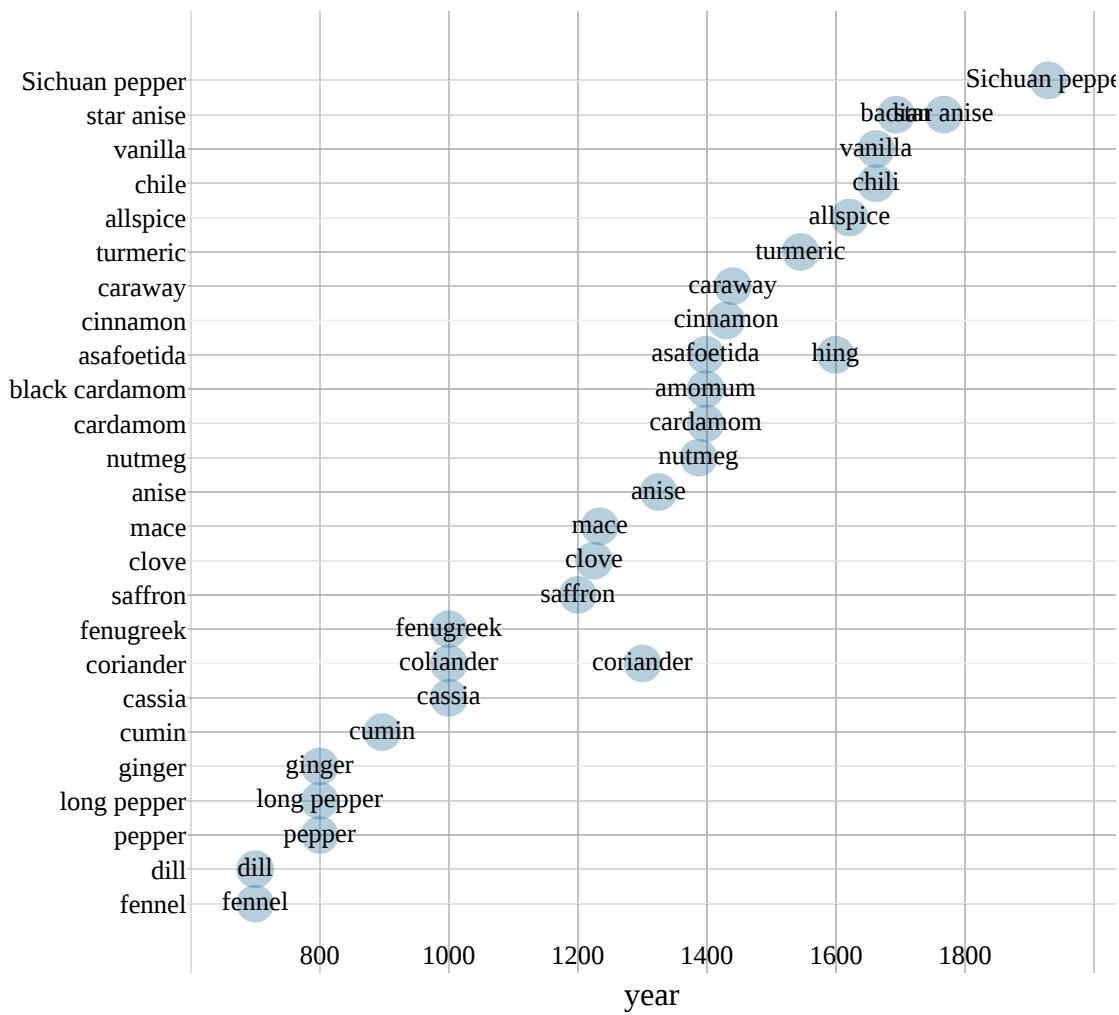


Figure 5.9 Spice terms attested in English.

Looking at figure 5.12, we can observe a few trends off glance. First of all, it is clear that Chinese—the language with the longest literary tradition out of the three languages—has the earliest attested spice words, primarily *jiao* ‘pepper’, originally referring to the indigenous Sichuan pepper, but now also used to denote the black pepper and chili pepper especially. In this sense, *jiao* is the equivalent of English *pepper*, and Arabic *fulful*. *Jiao* is followed in time by *gui* and *rougui*, referring to the spice we know and use as cinnamon (but actually cassia), a tree native to the South of China, in the immediate proximity of the ancient Chinese heartland. As for *jiang* ‘ginger’—also attested at a very early date—I have already mentioned the reasons for its early diffusion and consequent inclusion into the medicinal and culinary traditions of ancient people *worldwide*. The attestation dates of other spices distribute evenly starting from the 4<sup>th</sup>-5 century, which marks the introduction of Buddhism into China from Central Asia along the Silk Roads, entering through the Gansu corridor. Besides monks carrying saffron, and asafoetida, we must not forget the many nomads and traveling traders, who likely introduced pepper as well (literally (nomadic) barbarian-pepper in Chinese), before the emergence of the Sogdians responsible for the introduction of many articles of trade during the Tang

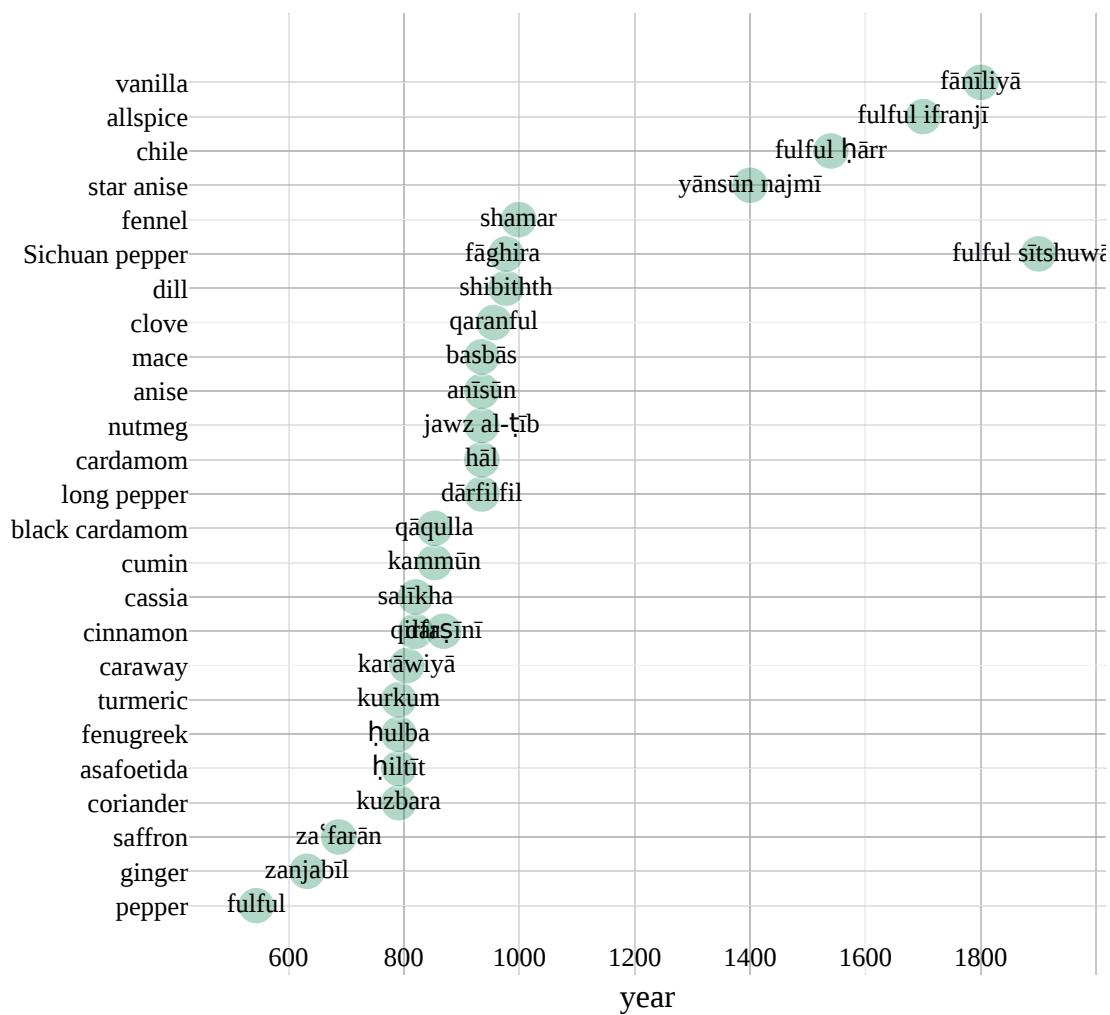


Figure 5.10

dynasty. The attestation of many spice names in the modern period is worth noting, these include spices that were known before but not distinguished (caraway seeds were not considered a separate spice from cumin, but were surely known in the Western Regions), or spices that were (are?) not used traditionally (allspice, anise, Ceylon cinnamon).

Secondly, there is an obvious jump in the attested Arabic terms in the 8<sup>th</sup> century, which is considered the start of the Islamic Golden Age. During this time, science and literature flourished under the Abbasid caliph Harun al-Rashid, and the “House of Wisdom”<sup>8</sup> in Baghdad, the largest city in the world at the time (Gutas, 1998). It is worth noting that many of these terms became part of the Arabic vocabulary certainly much earlier than the attestation dates, but since the Arabic literary tradition begins with the compilation of the Quran (shortly after the death of Prophet Muhammad ﷺ)

<sup>8</sup>The House of Wisdom (Arabic: *Bayt al-Hikmah*) refers to a large library and/or academy famous for the voluminous translation work that produced an output of scientific literature from all sources and traditions including Greek, Roman, Persian, Indian, and the Arabic literature that built on and advanced the various sciences. Recently it has been suggested that the House of Wisdom was not an actual library but rather a metaphor referring to the active scientific community as a whole during early Abbasid dynasty. The library—if it existed—perished during the total destruction of Baghdad in 1258 by the hands of Hülegü and the Ilkhanid Mongols, thus little archeological evidence remains.

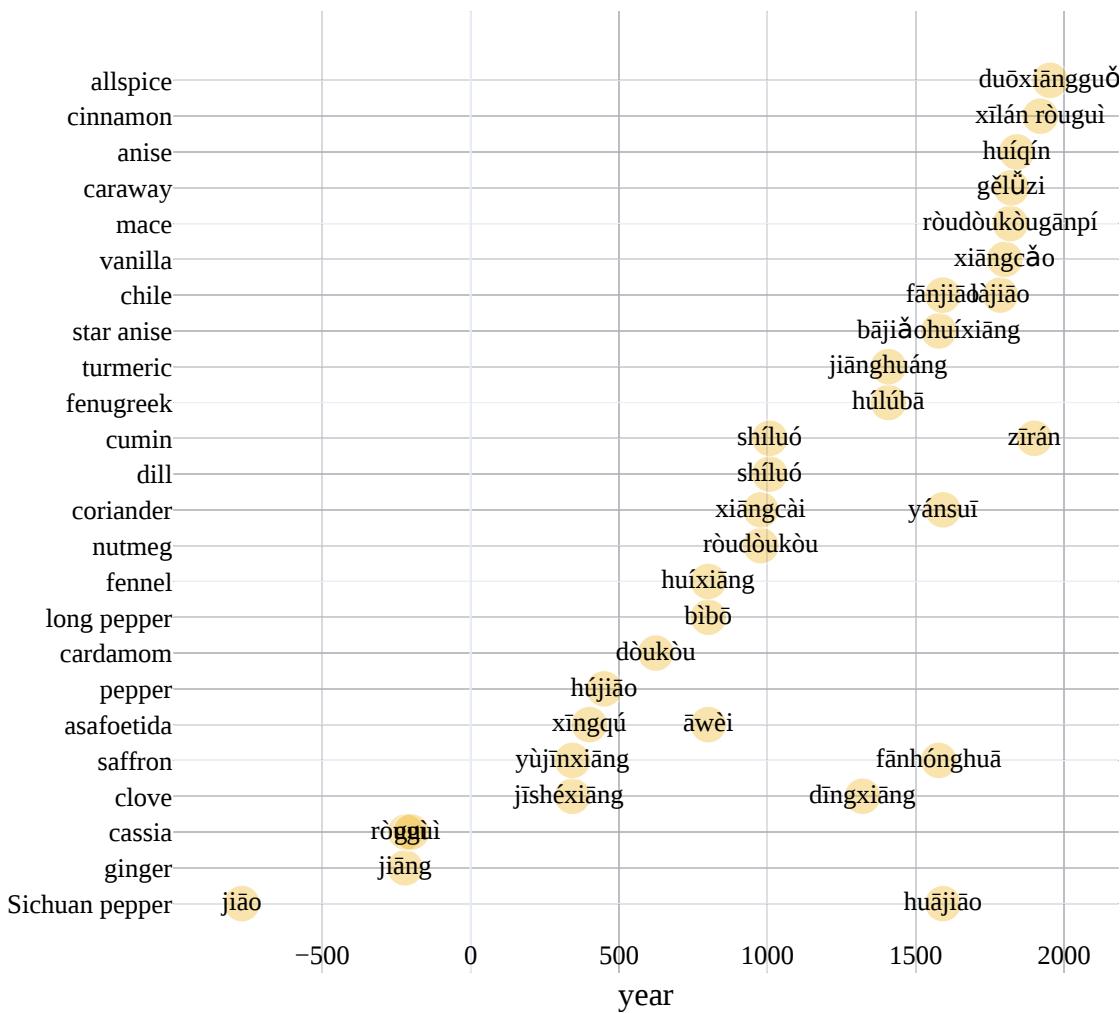


Figure 5.11

in 632), we have little early documentary evidence. The earliest example would be from the *Jahiliyya*<sup>9</sup> era poet Imru’ l-Qays, whose poetry features the word *fulful/filfil* ‘pepper’.

Thirdly, English features a set of spices that were attested in Old English, many known to the Romans since Biblical times, such as... But we can also see the time when Europe became acquainted with further oriental spices after the Crusades, when the westerners who have acquired a taste for lavish eastern flavours started to bring them home.

The next trivial step is to add the feature of borrowings to the plot, to see chronologically which terms were borrowed, and which are native inventions.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus.

<sup>9</sup>Literally meaning ‘ignorance’, this term refers to the pre-Islamic period of Arabia.

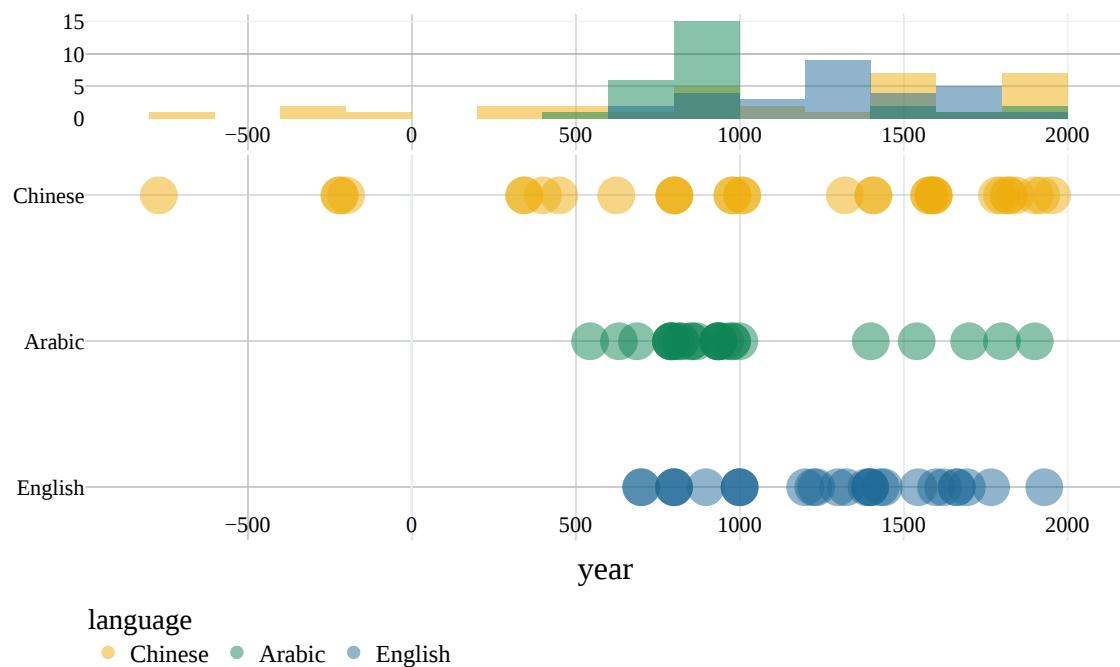


Figure 5.12

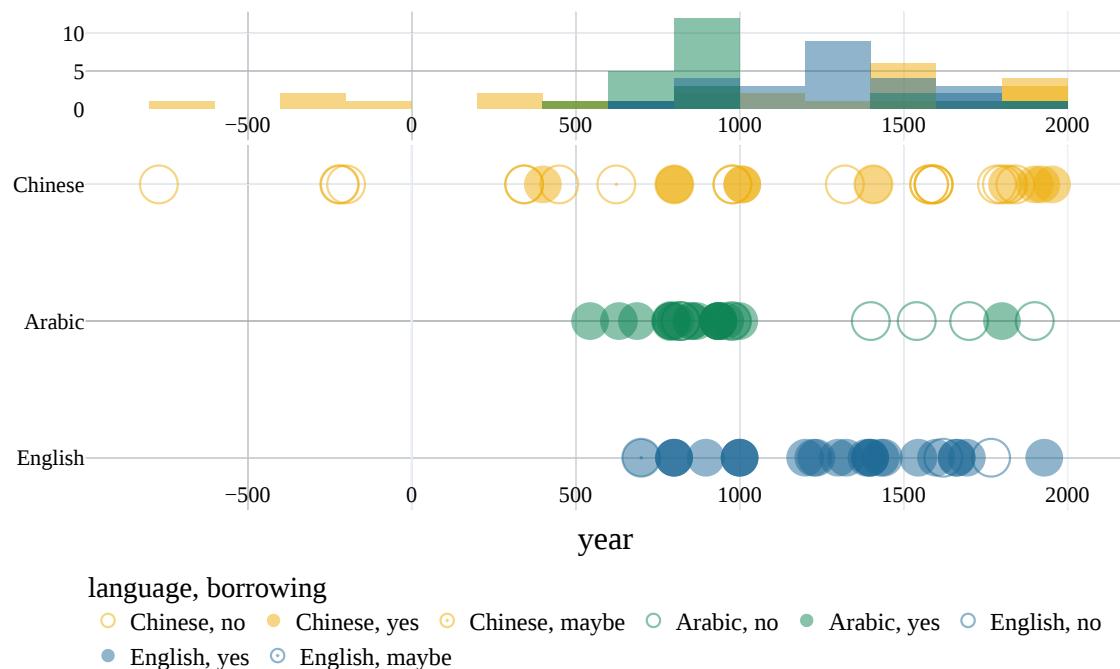


Figure 5.13

Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

## 5.4 The Donor Languages

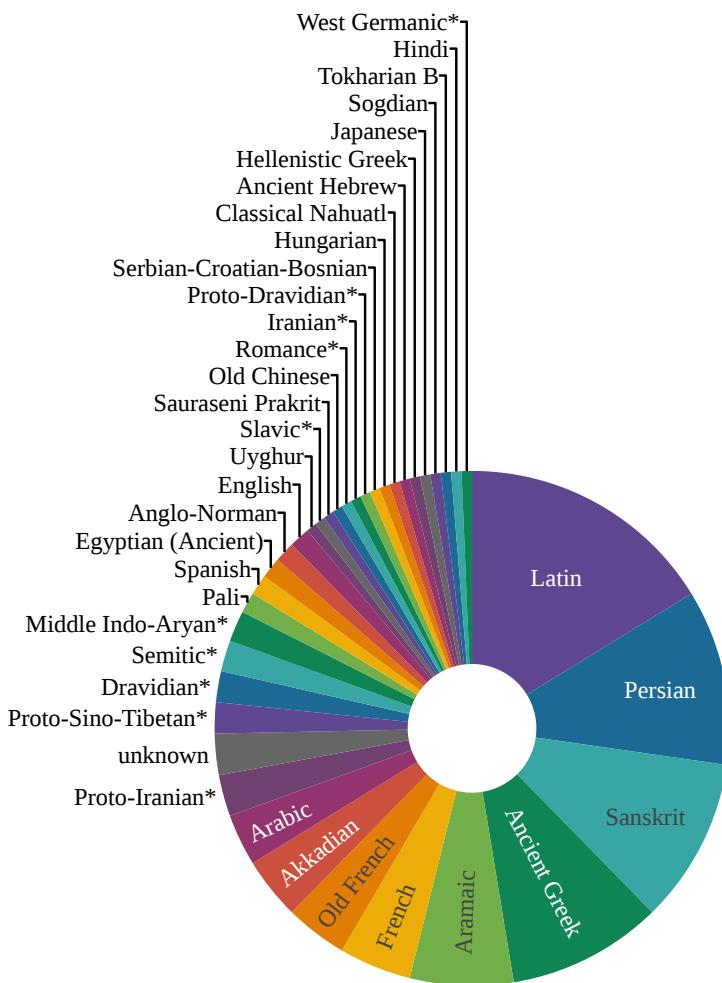


Figure 5.14 All identified donor languages of loanwords in the spice domain.

an asterisk, figure 5.14 is an illustration of these languages.

To give this batch of information some meaning, I have broken down this data according to our three reference languages, English, Arabic, and Chinese. You can consult this in figure 5.15. This bar chart shows the top 5 languages that have played a role in *carrying* loanwords of the spice domain, at any given stage, whether being the source, or a transmitting language. Speaking of source, figure 5.16 shows the top 5 source languages of the loanwords of the spice domain.

So who loaned these words? Which languages and civilizations are responsible for transmitting, transmutating, and disseminating the terms of the spice domain? From the etymological dataset, I have extracted the *participating* languages. In order of their frequency, they are: Latin, Sanskrit, Persian, Ancient Greek, Aramaic, French, Akkadian, Old French, Arabic, Proto-Iranian\*, Unknown, Middle Indo-Aryan\*, Semitic\*, Dravidian\*, Iranian\*, Anglo-Norman, Hungarian, Spanish, English, Pali, Egyptian (Ancient), Proto-Dravidian\*, Uyghur, Turkic\*, West Germanic\*, Romance\*, Proto-Sino-Tibetan\*, Old Chinese, Old Tamil, Sauraseni Prakrit, Late Latin, Old English, Middle Chinese, Hindi, Tokharian B, Sogdian, Slavic\*, Serbian-Croatian-Bosnian, Japanese, Classical Nahuatl, Hellenistic Greek, Ancient Hebrew, and Mandarin Chinese. Language families/branches, and proto languages are marked by

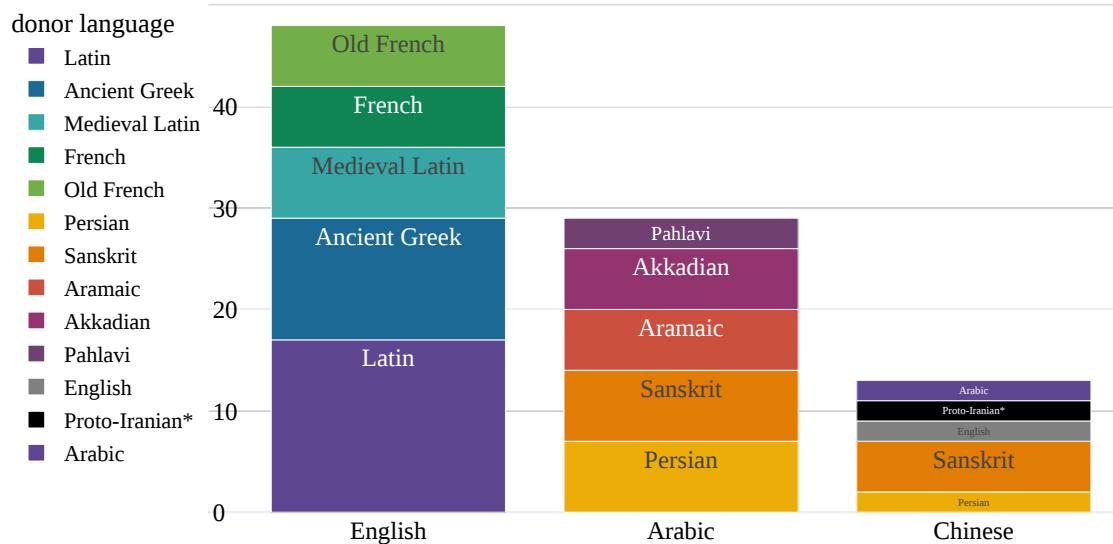


Figure 5.15 The top donor languages of English, Arabic, and Chinese loanwords in the spice domain.

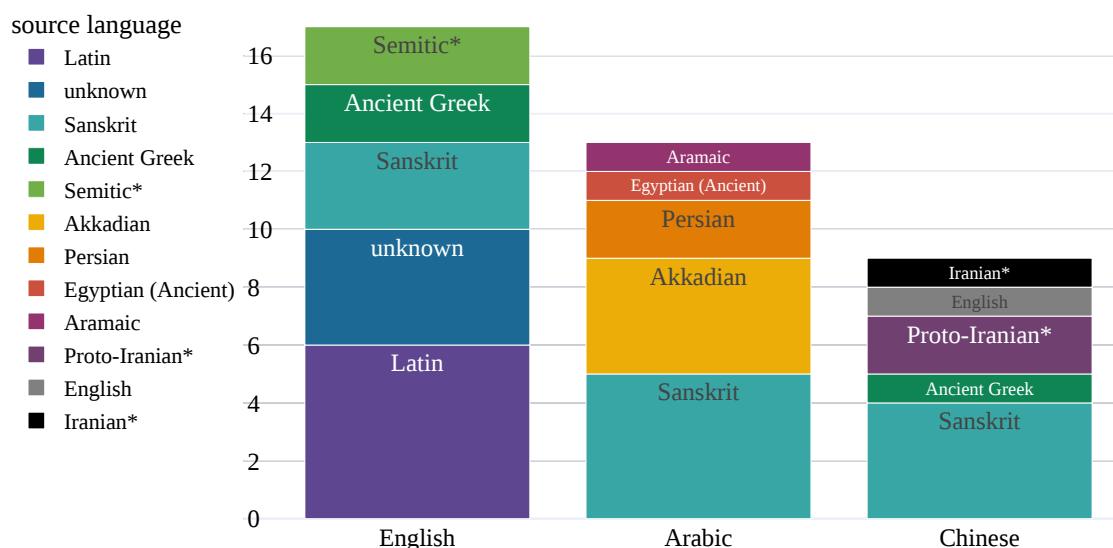


Figure 5.16 The top donor languages of English, Arabic, and Chinese loanwords in the spice domain.



# The Names of Spices

**N**ow that the detailed explanation of the diffusion of spices is complete, let us examine spice names. Throughout this chapter, I will look at the terminology comparatively, using three sets of names representing spice nomenclature in English, Arabic, and Chinese. This chapter constitutes the results and findings of the analysis on the terms of the spice domain, from linguistic-cognitive perspectives.

I will start with an overview of the data and the results in numbers, and then I will thematically introduce certain aspects of the terminology, guiding the reader from a general questions of analyzability and structure, towards more nuanced probes that will shed light on the composition, rationale, and motivations behind spice names. The aim of this section is to have an understanding of how spice names are formed, what are the components of typical spice names, and why languages use these elements. At the end of this chapter, a close look into the names of one specific spice will show how can we apply the findings.

## 6.1 Overview: Spice Names in Numbers

As a result of the data collection set forth in chapter 4, the spice name dataset now contains 365 spice names. Of these, 157 are in English, 86 are in Arabic, and 122 are in Chinese; figure 6.1 shows this distribution. The total number is the result of the lengthy process of carefully compiling the nomenclature for the set of spices as defined at the beginning of the thesis, which consists of 24 different spices. The data collection methods were detailed in section 3.2. Combing through dictionaries and the literature, it quickly became clear that the accumulation of spice names—and therefore this project is essentially endless—there is no feasible way to compile the infinite aromatic plant products of the world, and certainly not their many names. This can spark both stress and joy; on the one hand I am relieved that I chose only two dozen relatively well known spices and not more, while on the other I am excited to see that there is room to grow: there are more aromatics to include, more names to examine, and more things to learn.

On average, a spice in my dataset has 14 names, where the max is 44 (chile), and the min is 4 (fenugreek and mace). Figure 6.2 shows the top ten and the bottom ten spices that have the most and least number of names, including all three languages. The legitimacy of this figure might raise some eyebrows, but in fact it is a very good indicator of which spices are more complicated in their nomenclature overall, and therefore which are the most *problematic* to untangle. As we can see, spice plants that boast with many names include the chili pepper, Sichuan pepper, cassia and false

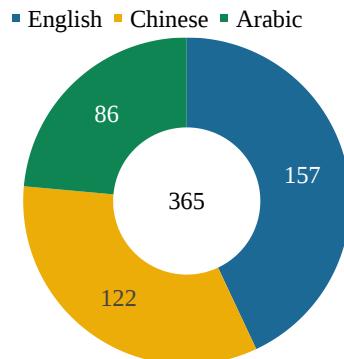


Figure 6.1 The distribution of spice names across the three languages.

cardamoms, which represent spices that are rich in variety. On the other hand there is also allspice, which has no variety at all but a confusing and unclear set of names across the three languages. These are—not incidentally—the very items that I have dedicated substantially more pages to than some of their peer spices, due to issues about their identity or the complexity and richness of their nomenclature. This seems to go hand in hand with matters of biodiversity: chile has countless varieties that have spread to faraway corners of the earth, and now it is a hobby in its own right to cultivate, breed, and crossbreed hot chile cultivars. As we saw, Sichuan pepper species are used across vast regions in East Asia (mainly in China), and it can cause headache to pin them down exactly, their “boundaries” and varieties are not that well defined—especially to those outside East Asia—and it does need some explanation to untangle and isolate the various sources of cassia types as well.

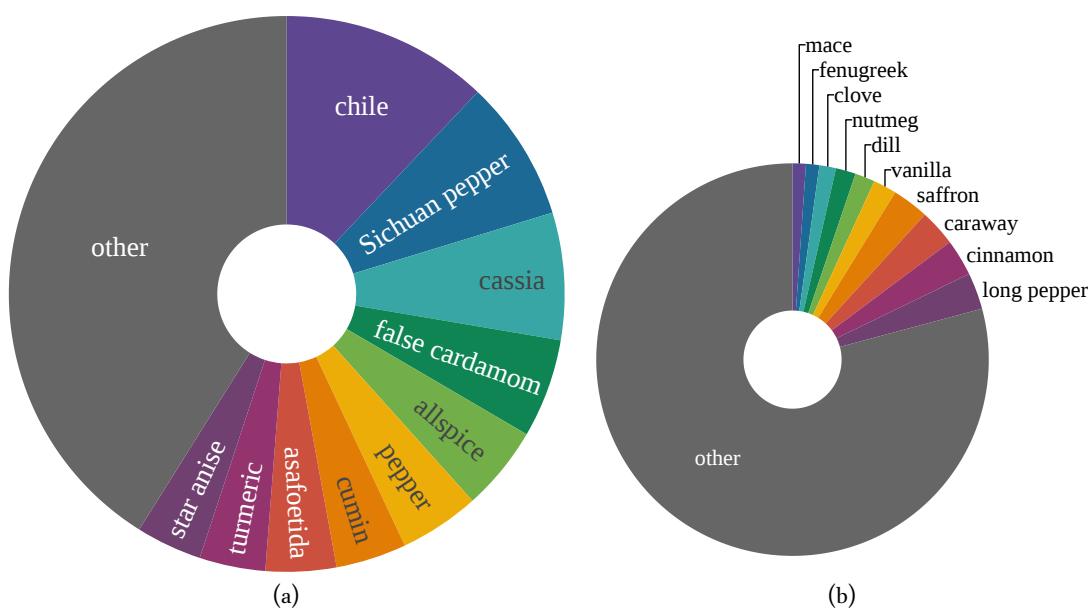


Figure 6.2 Top 10 spices with the most number of names (a), and bottom 10 spices with the least number of names (b).

On the other hand, spices with the lowest number of names are presumably the most straightforward items, take for example cloves, or vanilla. But what makes a spice “straightforward”, or in other words, simple? In my opinion, it is their uniqueness and recognizability. Indeed, if we reflect on our investigation on vanilla in the last section of the data chapter, we have already established that it is a rather special item: there is no other spice that is made from the fruits of an orchid, no other spice that is obtained from crystals of long dark brown beans, and no other spice that is sold in liquid form—it is unique. Or, if we think of cloves, they are unmistakable in their shape and in many language they are known by their shape (see 29). These two items are also very well circumscribed in terms of their geographic origins. Although now cultivated in multiple tropical regions, vanilla is known to be from the jungles of Central America and Brazil, there is no doubt about its origins. The native habitat of cloves is even more narrow, as it is only indigenous only to North Maluku and the “spice islands” of Makian, Ternate, and Tidore. We see nutmeg and mace as well among the bottom five items with the

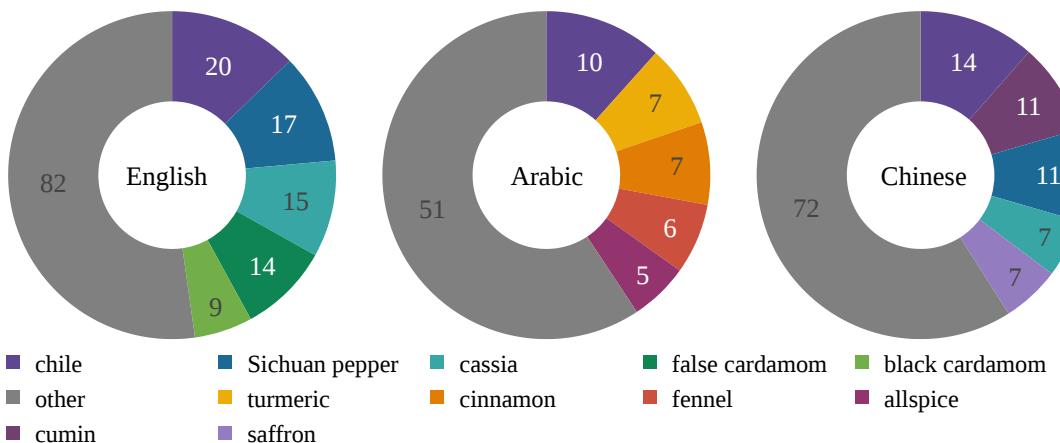


Figure 6.3 Top 5 spices with the most number of names, broken down by language.

least amount of names, and we should notice that nutmeg and its mace are also from this region, they were exclusively found on the Banda islands of Maluku, and nowhere else until the second half of the 18<sup>th</sup> century. Now, it makes a bit more sense to look at these same charts deconstructed by language, this can be seen on figure 6.3. The most conspicuous feature of these pie charts is that chili has the most names, across every language.

## 6.2 The Analysis of Spice Nomenclature

This section will now present the analysis on spice names trying to answer the main question: How do people name spices, and specifically, new spices that they came into contact with? Immediately, we can think of two ways: languages either borrow, or conceive a name. We saw the borrowed element in the previous chapter, and now we will dive into how the naming process exactly works. What are the structural requirements and salient features that influence the creation of a name? How languages invent and generate new names for novel materials and substances? In an attempt to give answers to these questions, I took a bottom-up approach and looked at all 365 names of the 24 spices from the data I collected to arrive to some conclusions.

So what kind of spice names there are? How does a typical spice name looks like? Intuitively, we can identify two core types of names instantaneously along the lines of their structure: *basic*, *modified*. *Basic* would be a monomorphemic or a derived word that refers to a prototype spice, without any distinguishing word, e.g., *cardamom*. *Modified* could refer to compounds and noun phrases that use a spice name as a headword, but also have a modifier for purposes of identification and disambiguation, e.g., *green cardamom*, *black cardamom*, *true cardamom*, *false cardamom*, *Nepal cardamom*, *Ethiopian cardamom*, *round cardamom*, *lesser cardamom*, *greater cardamom*, *hill cardamom*, etc. We can also discern the wide range of categories of the modifiers referring to color, shape, size, geographic origin, and even positive and negative evaluations of perceived authenticity. A spice term can also have a modifying word to specify the plant part as well, this can be observed most commonly for spices that are known also as plants, or other parts of the plant are used as well, or the same part is used in other

#	analyzability	English	Arabic	Chinese
0	analyzable	115	51	100
1	unanalyzable	40	32	21
2	semi-analyzable	2	3	1

Table 6.1 Analyzability of words in the spice name dataset.

form (i.e. ground or powdered). In English this is usually attached after the headword, similarly to a regular suffix. Examples include: *cumin seed*, *coriander-seed*, *aniseed*, *ginger root*, etc. After consulting intuition, let us consider a more formal analysis.

### 6.2.1 Analyzability and Structure

Analyzability of words is originally an idea from the 20<sup>th</sup>-century philological movement and method *Wörter und Sachen* (words and things in German), which had a big influence on linguistics and ethnography. Outlined by Hugo Schuchardt and based on the titular journal *Wörter und Sachen* started by Indo-Europeanist Rudolf Meringer in 1909, it proposed the close study of the etymology of words together with the artifacts/concepts (Ortutay, 1977–1982). Meringer wrote in 1906: “Ohne Sachwissenschaft keine Sprachwissenschaft mehr!” (There is no more linguistics without the study of material culture!). Practically speaking, analyzability meant that the more opaque a name is in terms of morphological analysis, the longer it is assumed to be present in the language. A basic example would be *York* (monomorphemic) vs. *New York* (analyzable), which provides a potential chronology for the concepts the words signify. This approach was incorporated into historical linguistic research and philology, often studied in parallel with findings in archeology (Ortutay, 1977–1982).

Haspelmath and Tadmor (2009a, p. 12) also used the term “analyzability” in the creation of their loanword database (*The World Loanword Database (WOLD)*) as a first step to assess a word’s loanword status, although in a purely linguistic way. I have applied a simplified version of this annotation, and indicated if a word was (1) unanalyzable, (2) semi-analyzable, (3) or analyzable. Items are semi-analyzable if the situation is morphosyntactically complex. For example in case of “cranberry words” such as *fenugreek*, where an English speaker could decipher the element *Greek*, but would be left in the dark with *fenu-*, or the Arabicized loanwords from Persian, *dāršīnī* ‘cinnamon’ or *dārfilfil* ‘long pepper’, where both *sīnī* ‘Chinese’ and *filfil* ‘pepper’ would be understood, but Arabic speakers would not know what to do with *dār* (which coincidentally means ‘house’ in Arabic, but it is from Persian ‘wood’). A Chinese example could be *huluba* ‘fenugreek’, where *hu* ‘barbarian’ is the same character that is found in *hujiao* ‘black pepper’, pointing to its foreign origins, but the whole word itself would be difficult to decode since it is in part a phono-semantic matching or Arabic *hulba* ‘fenugreek’.

Analyzability of words greatly interlinks with their structure, which can be simple or monomorphemic (e.g. *hing*), compound (e.g., *stinking gum*), or phrasal (e.g., *devil’s dung*). *Asafoetida* would be considered a compound to those only who are familiar with either Latin, or the history and meaning of this word. Even if we are, *asa* is a cranberry morpheme, and *foetida* ‘fetida’ might not be immediately obvious, so it is a semi-analyzable compound.

Importantly, compounds that are coined within a language are not considered loanwords, even if they contain borrowed elements. Thus, while *chili* is considered a loanword, *chili pepper* is not. Of course, there are always ambiguous cases: is *black pepper* a loanword? It depends on if it is a learned loan/semantic translation from Latin *piper nigrum*, or a genuine English invention; and for this we have to dig deep into the history of words. To sum up, we could say that if a word is morphosyntactically complex, “it was almost certain that it was created by speakers of the language rather than borrowed from some other language” (Haspelmath & Tadmor, 2009a, p. 12).

Words that are analyzable are most often compound in their structure, but there are a few derived names as well. As English is an isolating language, it is less common to find derived words. Derived terms do occur in Arabic, where a handful of spice names come from verbal roots originally referring to the method of acquisition, such as *qirfa* ‘cinnamon’ from *qarafa* ‘to peel, derind’, or *salikha* ‘cassia’ from *salakha* ‘to pull off, strip off; skin, flay’. Other methods of word formation for generating spice names in Arabic include the diminutive pattern, cf. the form *fulayfila* from *fulful* ‘pepper’, equivalent to ‘capsicum’. Or, the pattern to form an active participle in the feminine as it has been proposed in case of *fāghira* ‘Sichuan pepper’ from *faghara* ‘to open’, alluding to the half open, mouth-like pericarps of *Zanthozylum* species. There are a few examples of phrasal names as well, such as the abovementioned *devil’s dung*, but most often these tend to be titles of praise rather than actual names, for example *king of spices* ‘black pepper’, *queen of spices* ‘cardamom’, *red gold* ‘saffron’, etc. Table 6.1 and figure 6.4 show the trilingual distribution on the analyzability of words. Closely related to analyzability, is the question if a term is borrowed or not, which I have already covered in the previous chapter on the diffusion of spice words.

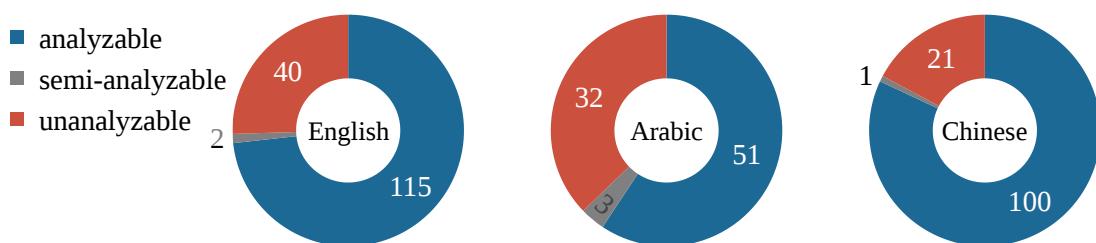


Figure 6.4 The ratios of the analyzability of words in the spice name dataset.

### 6.2.2 Spice Term Anatomy: Prototypes and Distinguishing Words

I already mentioned that the vast majority of analyzable spice terms are compounds, and so let us look at the anatomy of these compounds. By far, most compounds are made up of two elements, sometimes three, but even more is possible. Based on the principle of analyzability explained above we could rightfully assume that the more elements a compound name has, the more culturally *distant* it is, the more unfamiliar its referent is to the speakers of the language. We saw in chapter 5 that the earliest attested words are indeed *short* and monomorphemic in their form, such as *dill*, *fulful* ‘pepper’ and *gui* ‘cassia’. And in support of this theory we also saw that recently attested words are likely to be polymorphemic compounds, such as *Sichuan pepper*, *fulful ifranjī* ‘allspice’, and *xilanrougui*

‘cinnamon’. In short, there is an obvious tendency from simple towards the complex.

Every compound element has a headword, and one (or more) modifier(s). Take for instance *sweet cumin* referring to ‘anise’, where the headword is *cumin*, and the modifier is *sweet*. The use of *cumin* can be explained by the prototype theory; to the person(s) who coined this term, cumin was an already known, ideal prototype for anise, on account of their similarity in their appearance (indeed, the two kinds of seeds look very similar, and they are related plants from roughly similar geographical origins to an English speaker). And so here, we can determine that the rationale for use of the headword is ‘prototype similarity’ with the basis of physical appearance. In most cases, the motivation behind the creation of spice names is simply identification and disambiguation.<sup>1</sup> Thus, a distinguishing word is needed to differentiate from the *original* cumin, and this word here is *sweet*. The distinguishing words or modifiers often arise from the most salient quality of the materials when compared to the the prototype item: in this case, the sweetness of anise.

The final thing to point out in this example is that *sweet cumin* is not merely an alternative name of anise, it is an *alias*. Under “alias”, I am referring to the misleading quality of this name, and I would like to emphasize that the prototype words could be used in two ways: matching or not matching. For example: in the compound *white pepper*, the headword *pepper* is used a matching prototype because the referent of the prototype matches the referant of the whole compound (i.e. white pepper is really pepper). Hence, white pepper is an alternative name which has the role of narrowing, specifying the subtype of pepper in certain situations. Contrastingly, *Jamaica pepper* is an alias, because in the real world the referent of the prototype and the referant of the compound do not match. In these cases, the prototype is used as a headword on account of its similarity—whether physical, chemical, or other.

This difference in how prototypes fill the role of the headword (matching or not) can have serious real world implications, and it is the one single feature of spice names that can cause the biggest confusion. If I may share a personal anecdote. One of my very close friends is working in the family business of importing and exporting various nuts and oil seeds. When a customer ordered a large shipment of black cumin, her boss—her sister—mistakenly ordered cumin. Now, if my friend's sister would have glanced on the report my friend made, she would have noticed immediately that black cumin (also known as nigella, *Nigella sativa*) and cumin (*Cuminum cyminum*) are two different spices, from different families. The mistake cost a lot to the company, and a lesson was learned, but we can safely assume that this kind of mixup happens regularly. To be clear, I do not want to “fix” the usage of common names in this thesis, I am simply trying to explore and explain why there is confusion between certain materials, so that I can organize and present it in a way that it one day might be useful as a trustworthy checklist or master list of spice names. Right now, I still believe that botanical names are the safest way to avoid accidents like this.

By the way, to make things much worse, there are more than one spices that can be called *black cumin* besides nigella, *Bunium bulbocastanum* (a.k.a. great pignut), and especially *Elwendia persica* (black seed, black cumin, black caraway) is often confused with the black seeds of nigella. It is not uncommon for a name to be used for the products of several different aromatic plants, and this is a

<sup>1</sup>Another interesting type of motivation is promotion/advertisement, as in the case of *grains of paradise*, where the creation of the name was intended to make the spice more desirable for European buyers. Cf. *xiangcao* ‘fragrant-grass/herb’

source of confusion.

### Headwords and Prototypes



Figure 6.5 Top 5 headwords appearing in spice names, by language.

When it comes to frequent headwords, we will most often find spice name prototypes—both matching and not matching the referent of the whole compound—for example, the prototype words for pepper, cardamom, cinnamon, and fennel occur in high numbers. The top most frequent headwords can be seen on figure 6.5. There are also headwords that do not refer to spices, but rather signify other plant parts and products, such as Arabic *jawz* ‘nut’ (with the primary sense of ‘walnut’ but by extension any nut) as in *jawz al-ṭib* [nut-of.fragrance] ‘nutmeg’. Arguably the most salient feature of the nutmeg is its nut-like appearance, and English also testifies to this. Another example could be the words for gum, referring to the useful part of the ferula plant, asafoetida. Headwords that allude to the function, role, and usage of the substances are also present, consider the *spice* in *allspice*, *bahār* ‘spice’ in *bahār hubw* [sweet-spice] ‘allspice’, or *huixiang* [Muslim-spice] ‘fennel’ or *dingxiang* [nail-spice] ‘clove’.

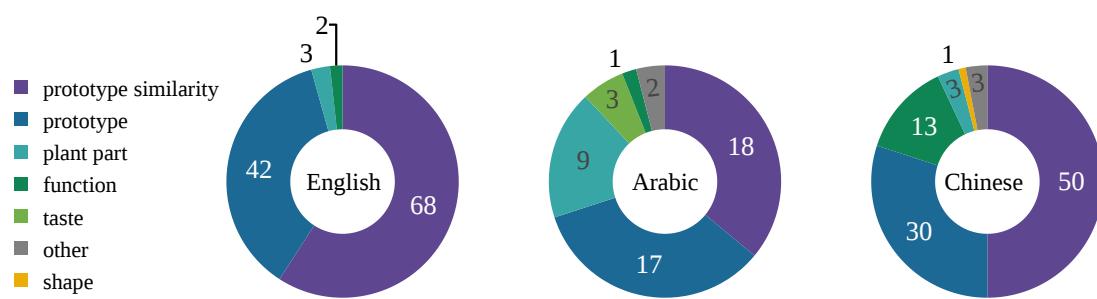


Figure 6.6

To have an outlook on the full extent of how headwords operate, I have tried to categorize them. According to the usage, most headwords are prototype words used because they are similar to the item that bears the name, followed by cases when the prototypes are used matchingly. The rest are a few cases that utilize words of plant parts, function, taste, shape, and color in their headwords as most salient elements.

## Modifiers and Distinguishing Words

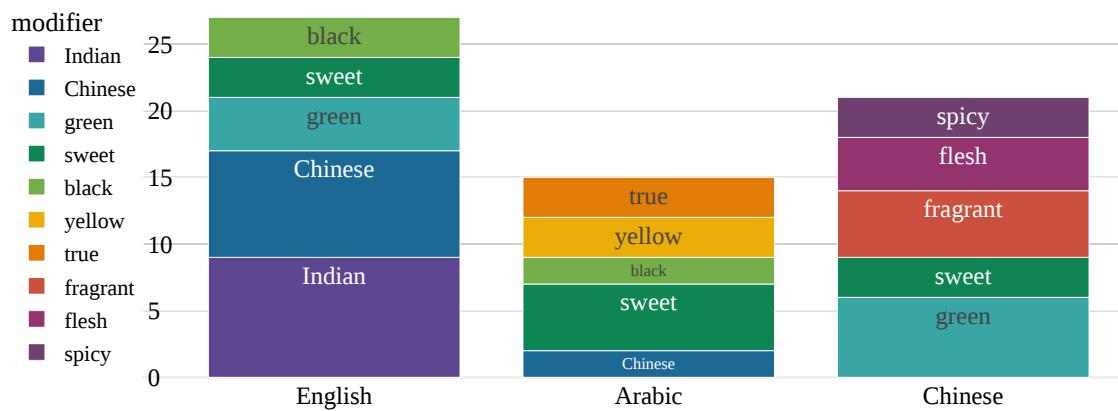


Figure 6.7 Top 5 modifiers appearing in spice names, by language.

When it comes to modifiers, we can see that the most prominent distinguishing words are adjectives of color, taste, size, shape, but unmistakably, modifiers pointing to geographical origins. Names of countries, regions, cities, perceived or real sources of spices are the most prevalent category here. Figure 6.7 show the top five modifiers across the three languages.

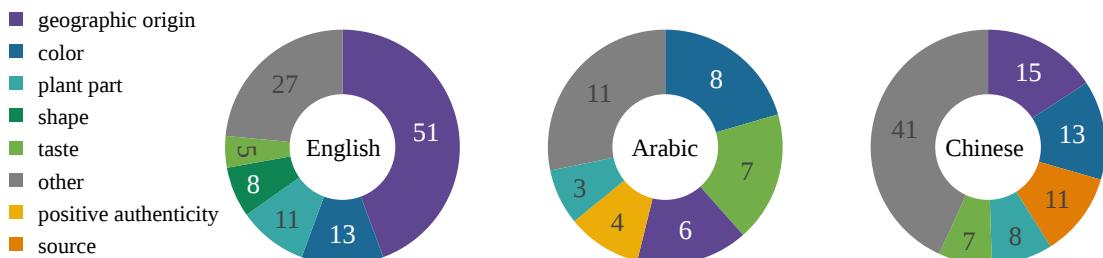


Figure 6.8 Types of modifiers.

## Sensory Words

Due to the highly stimulating nature of spices, sensory words often frequent the modifiers. In fact, after distinguishing spices by their geographic origin, the second most common types of modifiers are words of color. What are other salient qualities of perception when it comes to spices? It must taste and smell, right? In my analysis, I have identified and categorized sensory words according to the sensory modalities they operate in and the results can be seen in figure 6.9. It is clear that vision—generally accepted as being part of the “higher senses” along with hearing—takes the highest ranks, and the “lower senses” follow suit: words from the gustatory, olfactory, tactile, and thermal sensory domains.

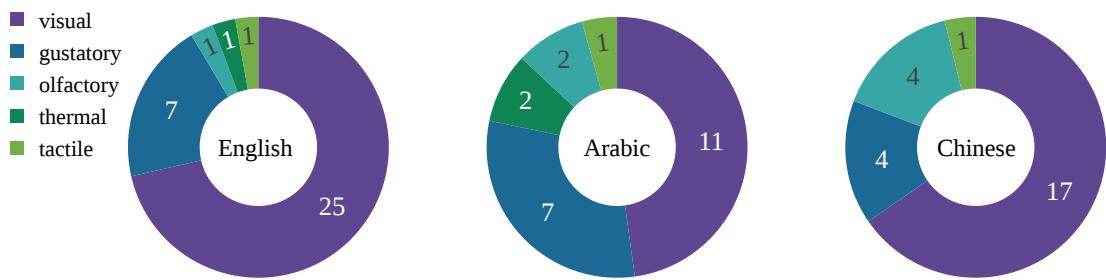


Figure 6.9

## Summary

The final question offers itself: What is the most common blueprint for a spice name? According to the statistics of the dataset, the most common combination is *prototype similarity + geographical origin*. Therefore, names such as *Indian cardamom*, *Ceylon cinnamon*, and *Chinese anise* are the most typical examples for naming a spices, where the headwords point to a different item of significant similarity. Therefore, *Jamaica pepper*, the first example we mentioned many pages ago in the introduction, is a fairly regular spice name.

### 6.3 The Case of Star Anise

Let us consider the nomenclature of star anise in the three languages (see table 4.74). In English, there is the default *star anise*, which is a native invention, obviously after the fruit's unmistakable appearance. On a rare occasion, we have information on the exact time of star anise's arrival to England, which is dated to 1588, as it was introduced in section 4.18. The same idea for a name is found in most European languages, either influenced by 16-17<sup>th</sup>-century spice dealer terminology, or devised on their own conviction, looking at its recognizable shape. I used the word "native", even though the phrase is obviously mixed from an etymological point of view: *anise* is a loanword ultimately from Greek. However, when faced with this type of phrases, I consider that at the time of the contact situation, *anise* was already part of the English lexicon — as well as *star* — therefore, this phrase was coined within English, and deemed as a native creation. This practice is consistent with the approach took by the team of Haspelmath and Tadmor (2009b) at WOLD. English also has the term *Chinese anise*, which is a phrase consisting of *anise*, again, and *Chinese*, referring to star anise's geographical location and the origin of its procurement for the English. Both phrases utilize the term *anise*, which refers to the small anise seeds of the Mediterranean, used as a spice, and flavouring for liqueurs and confectionary (see section 4.2). Why is there a connection to anise? The two plants could not be more different, they are geographically distant, they are botanically unrelated. The only thing that connects them is their highly similar flavor profile, dominated by the volatile oil anethole, the same nauseating and sweet chemical compound that is found in fennel and licorice. And so, for the Europeans who were familiar with anise and its taste, the novel product reminded them of anise's aroma. Hence, the names are in part inspired by taste/plant chemistry, defining anise as a prototype spice and prototype

term. To avoid confusion, (the existence of which will be clear to anyone who tries to do a brief search about anise or star anise), distinguishing words are used for the new material. These modifiers are attached to the head word, and in one case inspired by the spice's shape, on the other hand referring to its geographical origin. The existence of a Chinese star anise could be explained by the fact that there is a Japanese star anise as well, a similar looking but poisonous fruit and tree, *Illicium anisatum*. In short, the two phrases have different ways to identify this spice. English also has a now archaic form referring to star anise: *badian* from French, which arrived via a land route through Persian, perhaps a phonetic loan from Chinese, but there is no documentary evidence for this (see Etymology 47).

Arabic *yansūn najmī* [star anise] was devised along similar lines, using a native Arabic word for 'star', the prototype word is anise, and the more interesting instances are to be found in neighboring Persian. *Bādyān khatā'ī* or *khatāyī* [star anise] is star anise, while *bādyān rūmī* [Roman anise] is anise.<sup>2</sup> *Bādyān* alone could also refer to fennel.<sup>3</sup> This shows, that in Persian, the prototype word was *bādyān*.

As for Chinese, we do not find any loanword among the terms used to refer to star anise, all names are local "inventions". The modern "proper name" for star anise is *bājiǎohuíxiāng* [eight-horn-hui-spice], where [eight-horn] means 'octagonal', and [hui-spice] is fennel, therefore it can be translated as 'octagonal fennel', or 'eight-horned fennel'. An other name, *dàhuíxiāng* 'big-fennel' strengthens the assumption that in Chinese, *huíxiāng* 'fennel' is the prototype. Again, the flavor profiles of fennel and anise are basically identical, hence the connection (and confusio). The formal Chinese names of star anise are not attested in historical corpora as we discussed in section 4.18, and I assume that the vernacular name of *bājiǎo* [eight-horn] was first applied to star anise, and the formal name was modelled later driven by the plant sciences. In modern dialects star anise is also referred to as *huíxiāng* 'hui-spice' (historically 'fennel') and *dàxiāng* 'big-spice'. In modern TCM, fennel is referred to as *xiǎohuíxiāng* 'little-hui-spice', contrasting the two spices that are confounded due to their taste, using size. In fact, the Chinese 大/小 *dà/xiǎ* 'greater/lesser' contrast is not necessarily a marker of size, but a semantic tool to convey unmarked-marked, or proper/imitator.

To summarize the points I intended to make above: First, I determined if the words and phrases are analyzable (morphologically, syntactically, semantically), then I examined those names further, while also stating why a specific item is unanalyzable. E.g., *badian* as a loanword does not carry any useful information for an English speaker that is not familiar with the word, it cannot be dissected or interpreted alone. Next, I looked at the borrowed status of the names to determine if the word or phrase is borrowed, or devised locally. E.g., the Chinese names are native "lexical creations", while English and Arabic use a non-native headword (*anise/yansūn*) and a native distinguishing word (*star/najmī*). Finally, I have looked at the inspirations behind these lexical inventions, and identified the rationale and motivation behind them. For phrases and compound words, we can separate a prototype word (headword), and a distinguishing word (modifier). In each case, we can discern the reasons why that prototype word was used, what feature of the prototype item (referent) is the most salient. The same is true for the distinguishing word(s). For example, *star anise* is named so after

<sup>2</sup>Hayyim, 1934–1936, Vol. 1, p. 197.

<sup>3</sup>Steingass, 1892, p. 140.

(1) similarity in taste + (2) shape; and *Chinese star anise* is named so after (1) similarity in taste + (2) shape + (3) geographic origin. In table 6.2, you can see a concise overview of the analysis of star anise terminology.

Term	Gloss	Analyzability	Borrowed	Prototype	Modifier
star anise		analyzable	native	similarity in taste	shape
badian		unanalyzable	borrowed		
Chinese anise		analyzable	native	similarity in taste	origin
Chinese star anise		analyzable	native	similarity in taste	shape + origin
<i>yansūn najmī</i>	star anise	analyzable	native	similarity in taste	shape
<i>bājiǎo</i>	octagonal	analyzable	native	shape	
<i>bājiǎohuíxiāng</i>	octagonal-fennel	analyzable	native	similarity in taste	shape
<i>bóhuíxiāng</i>	ship-fennel	analyzable	native	similarity in taste	shape
<i>dàhuíxiāng</i>	big-fennel	analyzable	native	similarity in taste	size*
<i>dàliào</i>	big-ingredient	analyzable	native	function	size*

Table 6.2 Cap

In this sense, the space names are layered. Intuitively, the more layers a spice name has, the more distant the item was culturally, and on the converse, the less components there is to a term, more familiarity with the substance is presumed (e.g., anise vs. star anise in English). Therefore, spice names' modifiers can be categorized according to what salient feature contributed to the naming the most, and in this specific case, it is star anise's distinct shape. As we will later see, shape is just one of many properties that can distinguish/identify a spice, for others, different properties are salient, including color, taste, smell, and the geographical origin we mentioned. Furthermore, these names reflect on the materials' physical qualities, and the perception and importance of a spice for various sensory modalities in the human experience: vision, gustation, olfaction, etc.

## 6.4 The Case of Cinnamon

### 6.5 One

This chapter aims to give an overview on the terminology used by various languages when referring to cinnamon. These words are connected to the spread of material culture, and a (not-so) specific plant product used and coveted for its aroma, used as spice and medicine. Known by humans for millennia, cinnamon is now present essentially on a global scale, and by exploring its names in multiple languages, we can reconstruct its linguistic genealogy. These results also tell a story; they tell us an account on the linguistic history of *cinnamonic* words, their origins, diffusion, and ultimately, the story of cinnamon. We can infer information on the trade routes and the peoples who transmitted it, and identify the cultures that used and diffused knowledge on it.

To those of us who interested in the spread of words, especially *Wanderwörter* and their underlying cultural, historical, and geo-political significance, the map of tea might come to mind. This is a map

## Words for tea

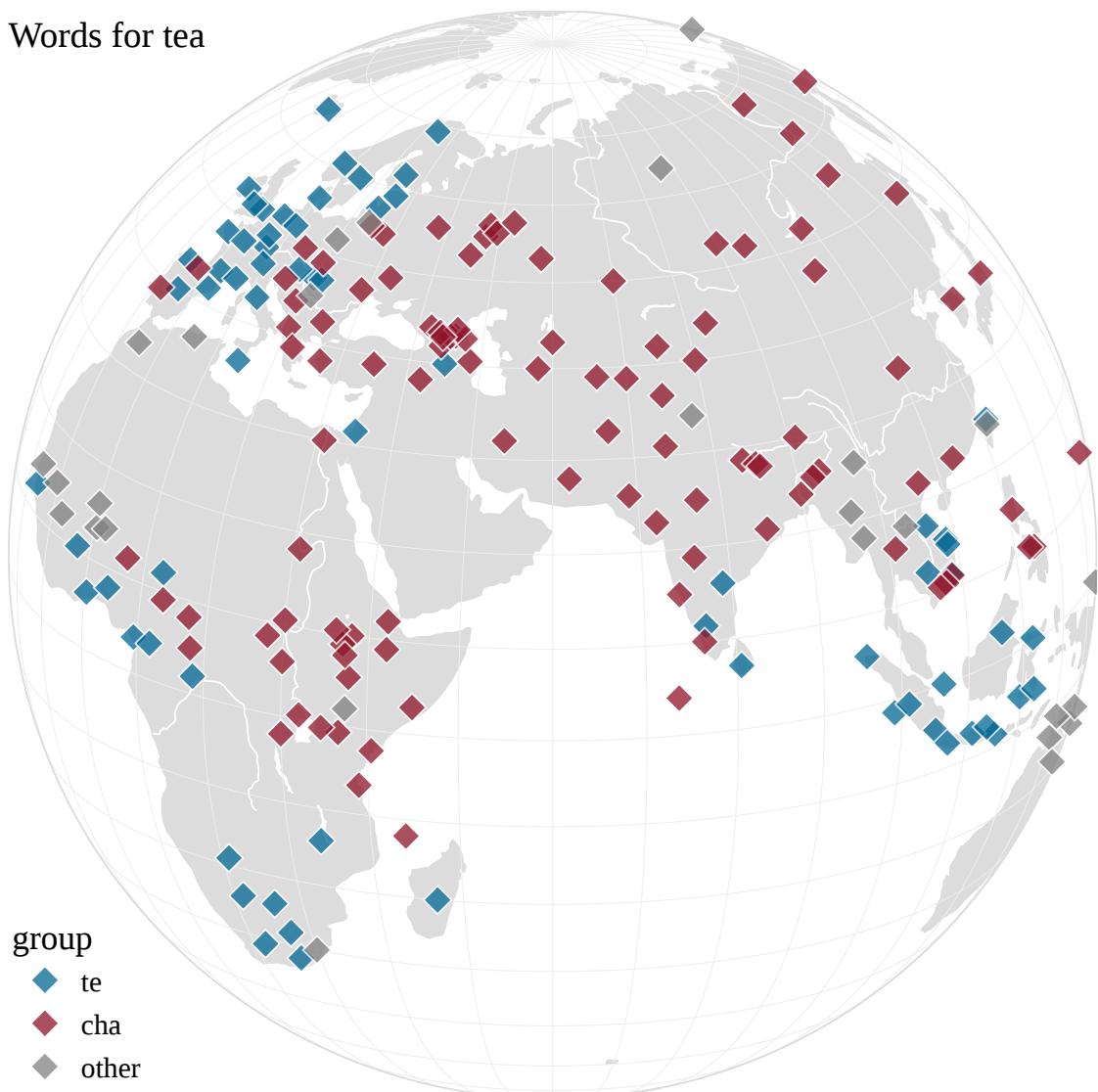


Figure 6.10 Distribution of words for tea from Sinitic *cha* and Minnan *te*, based on the data around the globe.

that shows the journey of words for tea (either from Sinitic *cha* or Minnan *te*), and their distribution in a sample of the world's languages. The point of this map is that it clearly shows if the name for tea arrived by overland trade or via a sea route. This peculiar phenomenon is a feature on its own (138A) in *The World Atlas of Language Structures (WALS)*, and have been described in a chapter by Dahl (2013).<sup>4</sup> Discussions and maps of the land vs. sea distribution of tea terminology have since made it into popular science magazines and articles, made rounds on Twitter, and hence relatively well known.<sup>5</sup> On a more scientific note, the distribution of tea words are discussed in detail by (Mair & Hoh, 2009, pp. 261–270) in an appendix titled *A Genealogy of Words for Tea*, with including a discussion on

<sup>4</sup>The accompanying map is available online at <https://wals.info/feature/138A#2/25.5/143.6>

<sup>5</sup>See for example Sonnad (2018) in Quartz: <https://qz.com/1176962/map-how-the-word-tea-spread-over-land-and-sea-to-conquer-the-world/> or Netchev and Macquire (2022) in the World History Encyclopaedia: <https://www.worldhistory.org/image/14112/movement-of-tea--cha-around-the-globe/>

historical phonology.

Cinnamon as a spice is relatively well known around the world, and the history of its diffusion goes back to thousands of years, with words attested as early as the Bible itself, as it was discussed in section 4.8. This is in contrast with the story of tea, in the sense that the international spread of tea is a relatively recent process in the economic history of plant products and colonial powers, and so we have a much clearer picture on the exact ways it was transmitted. Although tea-drinking in its homeland was practiced from time immemorial, and trade allowed it to spread regionally on networks, such as the Tea Horse Road, its present global domination is a result of 17<sup>th</sup>-century European fascination and large scale shipping. While the tea map illustrates the long haul trade connections of the time, such as those between Europe and the Far East, the map of cinnamon shows traces of an older, more gradual spread that happened in stages, outlining a more geographically contiguous development, and incremental trade networks. The propagation of cinnamonic *Wanderwörter* mirrors the historical processes, and just as the story of cinnamon, the words' origins are sometimes obscured by the sheer time-depth that is covered.

## 6.6 Methods and Data

Informative geospatial visualizations such as figure 6.10 above are a powerful tool in conveying the information about spread and distribution of words, and they can also help us to notice patterns and connections faster and easier than studying long tables of words, especially when the distributions are more complex than the somewhat neat duality of tea. In this case study, I will attempt a classification for the words for cinnamon by looking at clusters and categorizing them according to their source, to see what the distribution of names today can tell us about the spread and history of cinnamon.

Because words for cinnamon or other spices are not included as features in balanced typological datasets, such as WALS (tea is an exceptional feature in this database), I have attempted a manual collection of words for cinnamon based on dictionary entries. As a starting point, I have crawled data from the Wiktionary (<https://en.wiktionary.org>), which is the closest resource we currently have to an open- and crowd-sourced multilingual dictionary. Similarly to the Wikipedia, the Wiktionary is edited and reviewed by the community, which has both advantages and disadvantages. On one hand, information on the Wiktionary is free, broad in scope, it usually represents the public consensus, and often well cited. On the other hand, it is not always complete, the available languages do not represent a balanced sample from a typological point of view, and the information can sometimes be ill-informed or deprecated. In any case it is a rich resource to start with.

For cinnamon, first I scraped the translations for the word *cinnamon* in the sense 'spice' (Wiktionary, n.d.), and cleaned the data using regular expressions. After this, I have performed a round of manual checking where I fixed obvious mistakes in word forms and transliterations by consulting other dictionaries and reference works, in the languages and scripts I felt competent to do so. I proceeded to add a few missing translations with the help of other lexicographical resources and the Google Neural Machine Translation engine's Python API (Y. Wu et al., 2016).<sup>6</sup> Then, I analyzed each word in terms

---

<sup>6</sup><https://pypi.org/project/googletrans/>

of etymological origin, and assigned them to categories. For example, words derived from Greek *kinnámōmon*, such as Lithuanian *cinamonas* or English *cinnamon* constitute one category, and words derived from Persian *dârčin*, such as Turkish *tarçın* or Hindi *dālcīnī*, make up another. I continued this categorization for all instances, and created a new category for every group that has at least three attested members. Instances that do not belong to any group or undetermined were assigned to “other”. Finally, I merged this dataset with language data obtained from the databases of both WALS (Dryer & Haspelmath, 2013) and Glottolog (Hammarström et al., 2022) to prepare for geospatial plotting. The datasets were handled using the pandas library in Python, and the visualizations were created using the plotly Python library (McKinney, 2011; Plotly Technologies Inc., 2015).

## 6.7 Results and Discussion

Figure 6.11 shows the results of the analysis above, on a geographical scatter plot. As it can be seen, there are six groups in total: canela, kinnamon, korica, qirfa, darchin, and gui, with a seventh one — other — containing those that do not belong to any of these. It is also noticeable that the groups that were manually identified from geographical clusters, for example, the gui group appears in East Asia, while the canela group is mainly found in Europe. Lastly, I would like to draw attention that the “other” group has a high number of members in regions where cinnamon (or cassia) is native. The canela group represent words that derived from Latin, the kinnamon group contains words going back to Greek, and the korica group represent mostly Slavic languages. Qirfa words are derived from Arabic, darchin gathers terms from the Persianate world, and gui embraces some terms from the Sinosphere. Let us now look at these categories one by one.

**Note 6.7.1.** For a full, interactive and explorable version of the plot, please visit the following link: <http://htmlpreview.github.io/?https://github.com/partigabor/phd-test/blob/main/cinnamon.html>.<sup>a</sup> The interactive plot can be rotated, zoomed in and out, and the groups of data points can be isolated with a double-click on the group name/icon. Hovering over a data point will bring forward further information on the term, its transliteration, associated language and language family.

<sup>a</sup>For an annotated version, please visit [http://htmlpreview.github.io/?https://github.com/partigabor/phd-test/blob/main/cinnamon\\_annotated.html](http://htmlpreview.github.io/?https://github.com/partigabor/phd-test/blob/main/cinnamon_annotated.html)

### 6.7.1 The canela group

Words belonging to this group are cognates of Spanish *canela* and its variants in Romance languages, which have been formed with the diminutive of Latin *canna* ‘reed, cane’. It is named so after the curled shape of the cinnamon sticks resembling a little, hollow reed-pipe (OED, “cannel”). Latin *canna* itself is a loanword from Greek κάννα *kánnā* ‘reed, pole’, which is probably a borrowing from a Semitic language (cf. Arabic قانة *qanāh* ‘hollow spear, cane; conduit, canal’, Hebrew קנה *qāneh* ‘stalk,

## Words for cinnamon

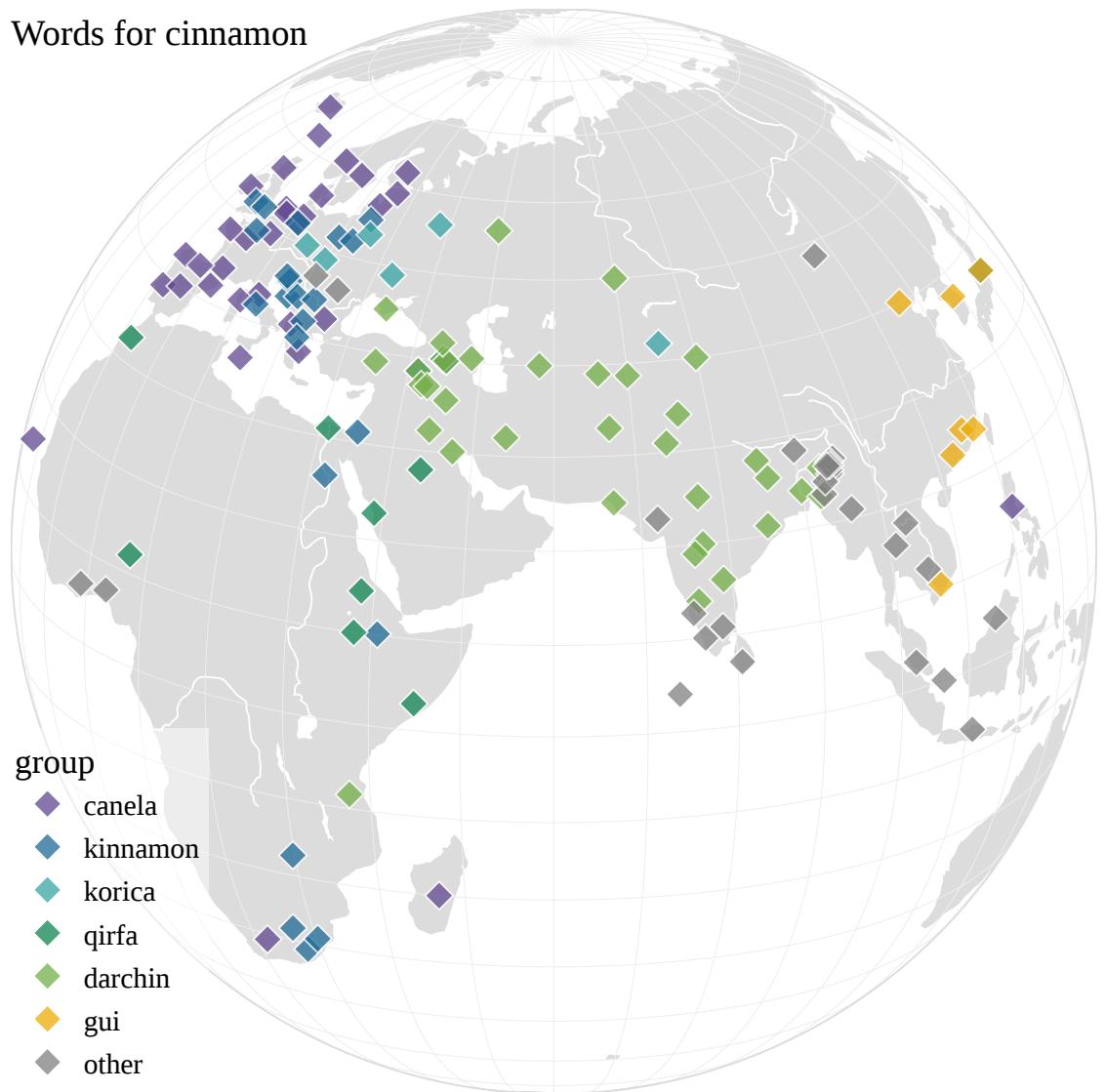


Figure 6.11 The distribution of *cinnamonic* words in a few languages around the globe.

reed, cane', Aramaic *qanyā* 'id.<sup>7</sup>) ([OED](#), "cane"). According to Beekes and van Beek (2010, p. 636) the Greek word is from "Babylonian-Assyrian" (Akkadian) *qanū* 'reed', which may come from "Sumerian-Akkadian" (Sumerian) *gin* 'id.' (cf. Roth et al., 1968/2004, vol. 13, p. 85), and proceeds to give Ugaritic *qn* and Punic *qn'* as further Semitic attestations.

The distribution of this group is overwhelming in Europe, which seems to echo the strong influence of Latin vocabulary, especially in the developing Romance languages. One example would be Old French *canele* (modern *cannelle*), which was formed within French from *canne* 'cane', and first attested in the first half of the 12<sup>th</sup> century from an epic poem describing a fictional expedition of Charlemagne to Jerusalem<sup>8</sup>, and the local vendors selling cinnamon, pepper, and "other fine spices"

<sup>7</sup><https://cal.huc.edu/oneentry.php?lemma=qnh+N&cts=all>

<sup>8</sup>*Le Pèlerinage de Charlemagne* [The Pilgrimage of Charlemagne], or *Voyage de Charlemagne à Jérusalem et à Constantinople* [Charlemagne's Voyage to Jerusalem and Constantinople], (c. 1140).

(TLFi, “cannelle”)<sup>9</sup>. The TLFi explains that this word exists in most romance languages and it is impossible to determine its progress, and also notes that the medieval Latin is not attested in the ‘cinnamon’ sense. Either French or Italian was the usual donor for other European languages, take for example Dutch *kaneel*, or Finnish *kaneli* through Swedish *kanel*. Spanish *canela* is attested around 1250, from “Italian” (Medieval Latin) *cannella* (Corominas, 1987, p. 125; Gómez de Silva, 1985, p. 98). Due to later colonization by European powers, many of these terms spread elsewhere, e.g.: Tagalog *kanel* from Spanish, or Haitian Creole *kannèl*.

<sup>†</sup>*Cannel*, also earlier as *canel* had entered English usage in the 13<sup>th</sup> century from French, but is now obsolete. It existed in Early Modern English up until the 18<sup>th</sup> century, and was gradually replaced by *cinnamon* (also arriving through French), which was first attested in the first half of the 15<sup>th</sup> century (see Etymology 24). Neo Latin *canella* also appeared for a brief time, but its meaning as ‘cinnamon’ waned, and now it is used in botany to refer to a plant genus.

In many other languages of Europe the opposite happened, and an existing word from Greek was replaced by the Latin term. Even Modern Greek uses *kanéla*, re(?) -borrowed from Italian *cannella*, instead of the Ancient Greek *kinnámōmon*.

### 6.7.2 The kinnamon group

This group centers around Ancient Greek *kinnámōmon*, most possibly a loanword from a Semitic language as I discussed in section 4.8.4. *Kinnámōmon* is the source of words for cinnamon in many European languages (e.g.: German *Zimt*, Lithuanian *cinamonas*, and English *cinnamon*), prominently in Central Europe and the Middle East. In most cases, these words represent an area where words derived from Latin *cannella* (or one of its descendants) did not replace the earlier word derived of *kinnámōmon*. This group also contains South Slavic languages in the Balkan linguistic area (e.g. Slovenian *cimet*, Serbian цимет *cimet*) where it arrived via the earlier German term *Zimmet* (now *Zimt*), and therefore it diverges from West and East Slavic branches for this lexical item. It reached Southeast Europe in the 16<sup>th</sup> century (Snoj, 1997, s.v. *cimet*)<sup>10</sup>, from which we can assume that cinnamon started to arrived here from the West during this turbulent time in the Balkans, in the middle of the Ottoman Empire’s European expansion.

### 6.7.3 The korica group

The korica group contains languages that use words derived from the inherited Slavic lexicon, in this case the East and West Slavic branches. Proto-Slavic \**korica* ‘bark’ is a derivative of \**korà* ‘bark’<sup>11</sup>, the suffix *-ica* is diminutive. Old Church Slavic *koricę* meant ‘cinnamon’, and further cognates are Russian *korica* ‘id.’, Ukrainian *кориця* *koryčja* ‘id.’ (East Slavic), Czech *skořice* ‘id.’ (West Slavic). In other cases, words derived from \**korica* can mean ‘bark, crust’ (e.g. Serb-Croatian) or ‘cover (of a book), binding’ (e.g. Bulgarian) (Derksen, 2008, p. 235). Due to the influence of Russian during Soviet times,

<sup>9</sup><https://www.cnrtl.fr/definition/cannelle>

<sup>10</sup>Fran — <https://fran.si/193/marko-snoj-slovenski-etimoloski-slovar/4285437/cimet?View=1&Query=cimet>

<sup>11</sup>PIE \*(s)kor- ‘to cut’ ??

some Central Asian Turkic languages ended up with a foreign words in their vocabularies, e.g. Kirghiz корица *korica* ??.

#### 6.7.4 The qirfa group

The qirfa group contains languages from Africa and the Middle East, whose words for cinnamon were borrowed from Arabic *qirfa*, for example Hausa *kirfa* (Newman, 2007, p. 114) and Amharic ቀርፏ ዕድል *qäräfà* (Leslau, 1996, p. 74).

#### 6.7.5 The darchin group

Names for cinnamon in this category originate from Persian, as it was explained in section 4.8.4. According to the data this cluster has the largest geographical extent, and by number of instances constitutes the largest group, almost head to head with the group of canela. Darchin represents the earliest stage of cinnamon's westward spread from South, Southeast, or East Asia, depending which cinnamon or cassia we think became the first cinnamon of commerce. Consulting the plot we can witness the huge influence Persian had in this step of transmission to the Middle East and Central Asia. We can also see that central and north Indian languages use a loanword from Persian, which can be explained by the Persianate<sup>12</sup> societies that resulted from the Islamic conquest of India, starting from the 13<sup>th</sup> century. The first sultan to ravage the land, Mahmud of Ghazni was a Persianized *mamluk* Turk, who laid the foundations with his raids in the 11<sup>th</sup> century for a series of Muslim dynasties on the Indian subcontinent, culminating in the Mughal Empire (1526–1857) and what we define today as Indo-Persian culture (Eaton, 2019, p. 33).

#### 6.7.6 The gui group

The gui group contains terms from the Sinosphere, words that borrowed the Sinogram 桂 *gui* (see section 4.8.4), such as Japanese 桂 *kei* ‘cinnamon or cassia tree’, synonym with 肉桂 (肉桂) *nikkei*, Korean 계 *gye* as 계피 (桂皮) *gyepi* and 육계 (肉桂) and the Sino-Vietnamese quế. This shows that the Chinese transmitted their cassia to their immediate neighbors East and Southwest, together with the word and character for it. However, there is little evidence for trade in cinnamon between China and Southeast Asia in early history, G. Wang (1958) does not give any information on it in his “The Nanhai Trade: A Study of the Early History of Chinese Trade in the South China Sea.” (G. Wang, 1958) This makes sense if we remember that all regions active in the South China Sea maritime trade — from Guangdong to Sumatra to Lanka — had their own source of cinnamon, and traders would only transport it westwards.

#### 6.7.7 Others

We can see that the category of “other” is prevalent in areas where cinnamon of various kinds is native and therefore these languages often have native words to refer to it. Many words from these

<sup>12</sup>For a discussion on this term, see N. Green (2019).

group are derived from the meaning of ‘tree bark, skin, peel’ Malay/Indonesian *kulit kayu manis* [bark-wood-sweet] ‘sweet wood bark’, where *kulit* ‘skin, bark’ is often omitted, or Dhivehi *fonithoshi* [sweet-bark].

Hungarian *fahéj* [tree-bark] is made by compounding and was attested in ca. 1395 (Zaicz, 2006, s.v. *fahéj*),

Romanian *scortișoară*<sup>13</sup>, is perhaps modeled after Slavic *\*korica*.

scortea,

scortum

*\*(s)ker-* (“to cut”)

## 6.8 Two

So what does this tell us exactly? It shows that in East Asia Chinese, especially the Chinese writing had influence over its neighbors...?

## 6.9 Conclusion

## 6.10 Limitations

---

<sup>13</sup>Diminutive of *scoartă* ‘bark’, from Latin *scortum* ‘hide, skin’, PIE *\*(s)ker-* ‘to cut’.

# The Language of Spices

## 7.1 The Case of Pepper

One of the most globally and cross-linguistically recognizable words of the spice domain is *pepper*. In the **WOLD**, it is ranked no. 7<sup>th</sup> when sorted by borrowability, following behind the olive, the sugar, the wine, the kettle, the beer, and the cheese, in the semantic field of food and drink (Haspelmath & Tadmor, 2009b). Pepper has a score of 0.66, making it the top spice meaning in this dataset of 81 entries (and the only spice besides the chili pepper). This metric, “borrowed score”, is an average of the scores of all the words that correspond to the meaning ‘pepper’, where individual meanings are scored according to their borrowed status.<sup>1</sup> “Thus, the higher the average borrowed score of a meaning, the greater its borrowability.” – it is explained on the database’s website. This suggests that if we were to collect the words for pepper in different languages and project them onto a world map, we should be able to see clusters that indicate the donor languages, and that gather around key areas of the globe that were important in the diffusion of this spice and **Wanderwort**. This in turn, would highlight the cultures and locations that were responsible for its transfer.

### 7.1.1 The Distribution of Pepper

Similarly to the analysis we conducted in chapter 5 with cinnamon and the distribution of its names seen in figure 6.11, we can also plot the names of pepper onto a world map, and look at how they are dispersed at present. First, I made the choice to collect words that correspond to ‘pepper’, and not compounds that gloss the more specific ‘black pepper’ (or not ‘chili pepper’ for that matter). Then, I have collected the names by scraping the relevant Wiktionary translations<sup>2</sup> for the word *pepper* in the sense ‘spice’, (and not in the sense of ‘fruit of the capsicum’). I then cleaned and manually checked the data for errors, and corrected the list to the best of my ability. Next, I augmented the dataset using other sources, such as dictionary entries, Katzer (2012a), and the “the pepper” meaning page from **WOLD** by Haspelmath and Tadmor (2009b), which contains 36 entries. Lastly, I have analyzed the words based on their etymologies, and grouped them into categories according to their etymons. After concatenating the collected data with language information and coordinates obtained from the **WALS** and Glottolog datasets, the plot could be generated, and it can be found under figure 7.1

Looking at figure 7.1 it becomes immediately evident, that there are a few large, clearly distinguishable groups forming among the scattered data points, each representing a word and a language. The following categories were identified: pippali, pigment, marica, and hujiao. Pippali contains all words that ultimately derive from Sanskrit *pippali* and this means most languages in Europe, including those

<sup>1</sup>The values assigned are determined as the following: clearly borrowed: 1.00, probably borrowed: 0.75, perhaps borrowed: 0.50, very little evidence for borrowing: 0.25, and no evidence for borrowing: 0.00. See more at <https://wold.clld.org/terms>

<sup>2</sup>“Pepper,” 2022.

## Words for pepper

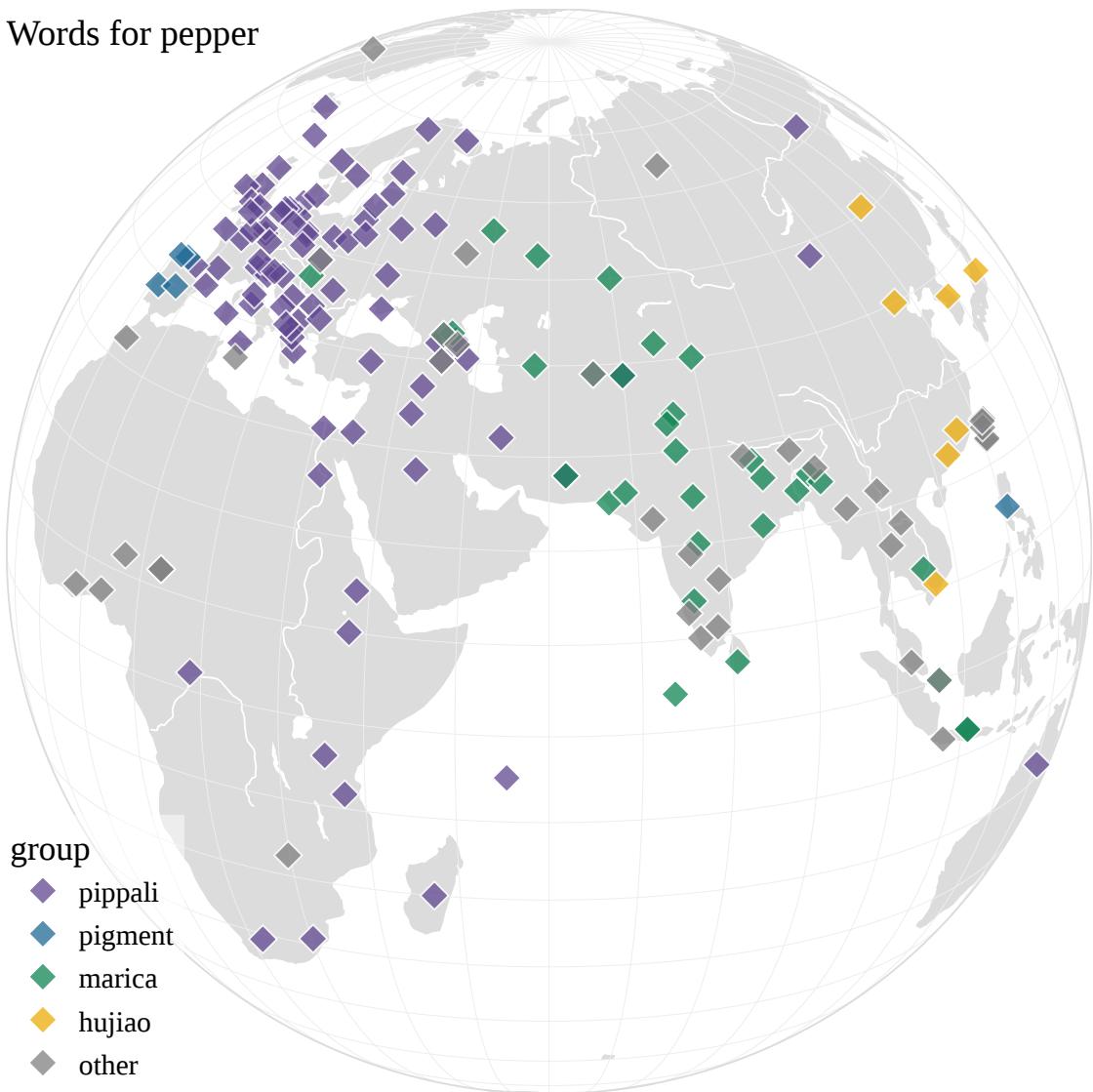


Figure 7.1 The distribution of names for pepper (*Piper nigrum*) in a few languages around the globe. For a full, interactive and exploratory version of the plot, please visit the following link: [http://htmlpreview.github.io/?https://github.com/partigabor/phd-test/blob/main/distribution\\_pepper.html](http://htmlpreview.github.io/?https://github.com/partigabor/phd-test/blob/main/distribution_pepper.html).

that were influenced by Latin *piper*, and those that loaned this word through Persian *pilpil* and Arabic *fulful*. The pigment group covers West Iberian Romance languages, where the Latin word for pigment went through a series of changes by way of metonymy and specialization of meaning, explained under 2. The marica group captures instances that originate in the “true sense” for black pepper, Sanskrit *marica*, which is distributed across South, Central, and to a lesser extent Southeast Asia. Lastly, words that belong to the hujiao group are those languages that borrowed their word for black pepper from Chinese, found across the Sinosphere. Instances that do not belong to any group or their origins I could not determine were assorted to “other”. Besides the apparent category of words derived from Sanskrit *pippali* (and spread generously through Persian and Latin), there are other major and minor groups that can be discerned, especially the category of words that derive from Sanskrit *marica*. The

piquancy of this ambivalence in the distribution of these two Sanskrit words is elevated by the fact that while *pippali* refers to long pepper (*Piper longum*), *marica* is the term that originally referred to black pepper (*Piper nigrum*) — forming a duo of closely related aromatic plants and spice terms.

Words that derive from *marica* are dispersed throughout South and Central Asia, and Hungarian *bors* is probably the furthest instance geographically from the once Sanskrit heartland and the home of pepper. Hungarian tribes most likely loaned this word from Turkic speaking peoples (with many other words from the domain of commerce and agriculture) on their way to the Carpathian basin sometime before the 9<sup>th</sup> century.<sup>3</sup>

We know for a fact that even in the early times of the Roman republic (510-31 BC), Indian long pepper was imported and used in Europe, but have evidently lost its prominence later on. From the history of this word, we can ascertain that at the time the Greeks borrowed the word for pepper from Aryan merchants, long pepper was definitely traded alongside black pepper. Unfortunately, we are not sure in what ratio they were imported, but they were both known to ancient writers of Europe. Hippocrates have discussed pepper and its medicinal benefits in the 5<sup>th</sup> century BC, Theophrastus have distinguished them in his *Historia Plantarum* in the 4<sup>th</sup> century BC, and explained the difference between the two; stating that long pepper has a stronger flavor. According to Toussaint-Samat (2009), the pepper that the Romans preferred was in fact long pepper, and the round black peppers we now use “became popular in the 12<sup>th</sup> century and had replaced long pepper by the 14<sup>th</sup>”. It is often difficult to know which pepper ancient writers are talking about, because in Latin, both could be referred to simply as *piper* (Toussaint-Samat, 2009, pp. 442–443). The modern scientific names go back to these early times, *longum* means ‘long’ and *nigrum* means ‘black’.

If we rely on historians, it becomes rather trivial that the name *piper* and its other derivatives is a [Wanderwort](#) that have first traveled with the product (the long pepper called *pippali*), and went through a semantic shift later, when black pepper replaced long pepper. The word stayed, but its referent changed. And this change happened alike in many languages in this part of the world, even if the two kinds of peppers looked different, their flavor profile and functions were the same. This semantic change happened once more in history: when people became acquainted with chilies, the same shift happened, and people started to use their (local) words for the pepper they had, to refer to the red hot chili peppers that conquered the world.

### 7.1.2 The Diffusion of Pepper

The names of pepper on the above map demonstrate indirect evidence for the trails the material have left, and show the extent of trade networks at certain times. They reveal the cultures and civilizations located at the heartland of the product and the crossroads of its exchange. The distribution of clusters of words belonging to the same categories in this plot also indicate the possible ways of diffusion. This can be then studied from a historical linguistic point of view through investigating language contact and loanwords, reinforced with historical awareness, and supported by botanical information.

<sup>3</sup>Hungarian *bors* was attested in 1075 as a proper noun, 1395 as a common noun. Cf. Ottoman Turkish dialectal *burç*, Chuvash *pərəs* ‘id.’, the Turkic words are from an Iranian language; cf. Sogdian *marč*, Pamirian *märč* ‘id.’ (Zaicz, 2006, p. 90)

Domain knowledge of spices is also crucial, if we want to answer specific questions about the spread of spices and spice terminology. For example, one of the reasons pepper (and its name) was so successful on reaching faraway places so early on is due to the fact that pepper does not spoil. Or at least, not fast compared to other agricultural products; it keeps its aroma and pungency longer than many other spices. Krondl (2007, p. 59) writes that “pepper, in particular, is remarkably stable and can be stored up to a decade as long as it’s kept reasonably dry.” This is one of the key features of spices, that allowed them to be shipped and carried thousands of miles away, during the course of several months if not years. Moreover, as dried plant matter, spices are also light, resulting in an extremely high price-to-weight ratio compared to, say, wheat, which made trading in pepper so lucrative in the past, and defined the fate (and face) of cities, such as Venice.

Turning our attention back to vocabulary, the most fascinating part of this phenomenon is that the word *pepper* originates so distant from English; both in time and space. Thanks to the hard work of historical linguists and philologists, we have a decent reconstruction of *pepper*’s journey, and we know that Germanic tribes must have loaned the term on mainland Europe, some time before their migration to England around the 5<sup>th</sup> century. Early Old English *pipor* comes from Latin, which originates in the Sanskrit word *pippali* by way of an Indo-Aryan transmission (see 14). The spatial and temporal trajectories of this word are remarkable, and follow the path of the material. Indian pepper (black and long) was known and coveted in Arabia and Rome long before the Anglo-Saxons got to taste it. Still, much of the story of pepper and its worldwide diffusion goes back to prehistoric times. Tracing its itinerary on Eurasian pathways is difficult at this time depth, yet we have breadcrumbs: its names. *Pippali* and its derivatives mark the way the spice have spread, even where written documentation and archaeological finds are missing.

Now, homing in on our scope of English, Arabic, and Chinese, we can look at the etymological stages of the words for pepper in these languages. In figure 7.2, I tried to illustrate the origins of the words for pepper in the languages under inspection. We see that the branch that leads to English is on the same trajectory as Arabic, both going back to the Sanskrit etymon. They also formed their words for long pepper with the prototype words *pepper* & *filfil*: English modeled it after Latin, while Arabic loaned a Persian term that compounded ‘wood’ and ‘pepper’ (*dar pilpil*), the reasons behind which we can only speculate. Either it reminded the Persians to a piece of stick, or there was maybe some type of analogy with the name of cinnamon: *dar chini*. Unmistakably, the Chinese did not loan a word for black pepper pepper, they formed their own name by compounding their prototype word, *jiao*, appending it with *hu*, referring to foreigners, Western barbarians. Notwithstanding, Sanskrit *pippali* also survives in Chinese, in the form of *biba*, strictly referring to long pepper, known since ?? and still used in TCM. The question begs to be asked: Why was one pepper adopted with a native word and designation, and why was the other loaned? I can think of two reasons. First, black peppercorns are very similar to the indigenous Sichuan peppers — in their shape, size, taste, and function — therefore it seems obvious to apply the term that already exists and conceptually very close to the new material. By way of their similarity, a metaphoric way of expression extended the set of referents for this word, *jiao*. Second, long pepper was a new item not incredibly similar to already existing Chinese products, it would place itself further away from Sichuan pepper in the semantic space. They do not match in

## Etymological stages of names for pepper

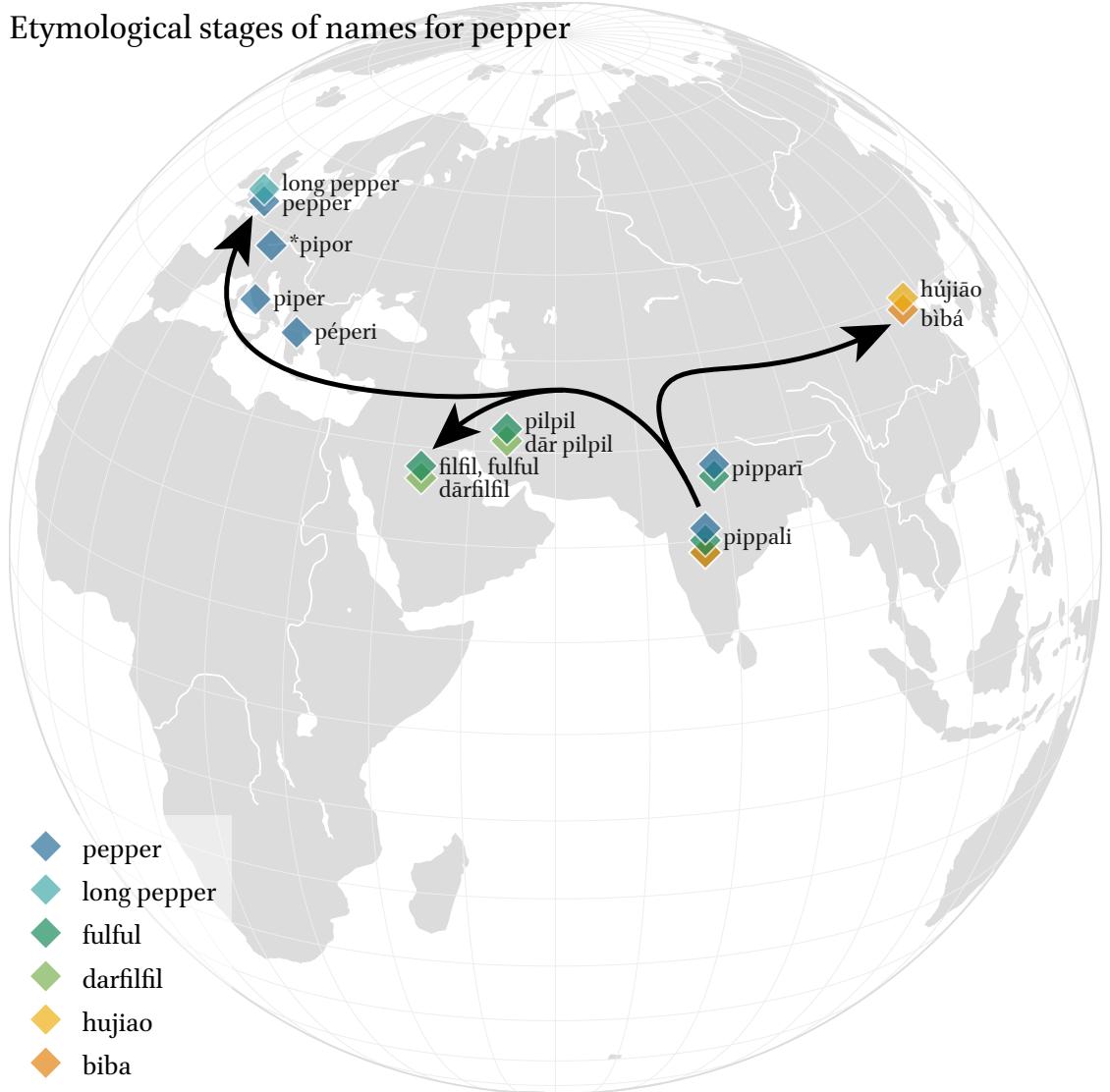


Figure 7.2 The diffusion of names for pepper (*Piper nigrum*; *P. longum*) in English, Arabic, and Chinese. For a full, interactive and explorable version of the plot, please visit the following link: [http://htmlpreview.github.io/?https://github.com/partigabor/phd-test/blob/main/diffusion\\_pepper.html](http://htmlpreview.github.io/?https://github.com/partigabor/phd-test/blob/main/diffusion_pepper.html).

color, shape, size, and even in its use long pepper was (and still is) rather a medicine than culinary spice. It was alien enough to be adorned with a loanword.

The etymologies were introduced in detail under etymologies 14, 12, and 13.

### 7.1.3 The Role of Pepper in English: A Brief Contemplation About Spiciness

Now that we have discovered that pepper as a product, and thus SPICE as a concept was at one point a novelty for the ancestors of English speakers, let us briefly consider life before pepper. We can safely presuppose a time, where pepper — and therefore experiences of spiciness — simply did not exist for certain communities. Or did it? Was there some wild garlic growing in Europe whose sharpness in taste could be compared to pepper? Some mustard, or horseradish? How did these people describe

spiciness before spice? Or peppery before pepper?

Sensory experiences of taste, such as sweet, salty, sour, and bitter, are encoded in the mappings of our evolutionary biology, and the same is true for pain. In fact, spiciness is a tactile sensory experience, roughly working along the same mechanisms as our perception of heat and pain. The technical term is chemesthesia, and it is defined as the sensitivity of our mucosal surfaces of the skin (e.g. the moist inner linings of the mouth) to outside chemicals. This system activates thermal, nociceptive (i.e. pain), and tactile sensations (Simons & Carstens, 2008). Substances such as piperine (in black pepper) and capsaicin (in chile pepper) cause a reaction that activates this system causing a burning, stinging sensation which — in moderate amounts — can be a pleasant. These stimuli also contribute to the overall flavor perception of food (Tewksbury et al., 2008). The first sense of the word *pungent* (now rare) shows well how strong the connection to pain was: “of pain: as if caused by a sharp point; piercing, stabbing; pricking.” The definition for the sense that is now generally understood is “affecting the sense organs, esp. those of smell or taste, with a sharp, penetrating sensation; acrid, irritant; intensely flavored, piquant.” Words, such as *pungent*, *sharp*, *biting* (also a cognate of *bitter*), and *hot* show that we do not necessarily need the word *spicy* (a loanword), to describe SPICINESS (i.e. pungency). However, the foreign concept of SPICE was influential enough to make way for new words and meanings attested in 13<sup>th</sup> century English.

Today, spices and their access ability is taken for granted, and the idea of not knowing how “spicy” tastes like, is — for most of us — unimaginable. The existence and abundance of spices around us, even if one does not prefer the heat on a daily basis, is now part of the human experience. This omnipresence is reflected in our words; spices have become the part of our vocabulary, the way we speak, and not just when we talk about the spices themselves. The following section will show how spices infiltrated our language, and how their characteristic features gave rise to new words and new meanings, metaphors, and idioms. I will examine the profound effect spices made on the lexis, through looking at the case of pepper in English.

## 7.2 Pepper as a Lexical Item

Pepper, and I mean black pepper, is undoubtedly a prototypical spice. In a significant portion of the world’s regions — or at least in the temperate areas — black pepper was the first pungent spice people have ever tasted. Although black pepper became indeed the first global spice, it is not the only one. Many other regions have their own prototypical pungent spices and relishes; some already famous worldwide, some still relatively unknown. As examples, we must mention the chile of the Americas, the prickly ash of China, the *cabai* of Southeast Asia, and the grains of paradise of West Africa. Now, if I would to list them again in the same order, but this time through a finer/different sieve of English, I could have written: chili pepper, Sichuan pepper, long pepper, and melegueta pepper. Mind you, these are all botanically different aromatic plants, distributed all over the globe, all culturally rooted in their respective regions. Yet in English, all of them can be referred to as some kind of pepper.

What we have here, is evidence that English speakers, going beyond the primary sense of the term *pepper* (used for the little round fruits of *Piper nigrum*) have developed the use of this word

for “any of certain other pungent spices derived from plants of other families, esp. ones used as seasonings”<sup>4</sup>. The meaning of *pepper* was extended by ways of its physical attributes (small, black, seed-like fruits), chemical characteristics (pungency), and role (spice, seasoning, condiment). Hence, other substances that matched or approximated one or more of the above-mentioned features, could be referred to as *pepper*. Often with a distinguishing word, today many plant products are known as peppers: *red, pink, bell, sweet, Jamaica, alligator*, etc. The list is long and functionally diverse, as distinguishing words and modifiers can have various different roles. They can identify, distinguish, or indicate some aspect of the produce, for example, its place of origin, flavor, or shape. *Pepper*, with the primary meaning referring to the fruits of *Piper nigrum*, was attested in early Old English, and the extended sense developed shortly after the European “Age of Exploration”, when the world opened up to the English sailors and merchants, and exotic, new products were brought back from Africa, Asia, and America. A 16<sup>th</sup>-century quote from a herbal shows this new use of the word *pepper*, and also the attitude towards a novel spice — Guinea pepper<sup>5</sup> — and simultaneously hints on the status of black pepper:

“Ginnie pepper hath the taste of pepper, but not the power or vertue.”  
(Gerard, J. (1597) *Herball* (Vol. 2, p. 293).in OUP, n.d., pepper)

And so, a *pepper-genesis* started, a rather clumsy term I made up for this phenomenon when Europeans familiarized themselves with new additions from the fruits of the plant kingdom; both to the cargo hold of their ocean-going ships, their apothecaries and grocers, and their vocabularies. Pepper worked as a prototype, and lent its name to other fragrant plant materials that needed to be named,

Beyond this the ability to generate names of all kinds of peppers — true and false — there is an even more interesting aspect of the word *pepper* that I would like to discuss: the derivation of new words over various word classes.

We also assume that the more a language is familiar with a substance, more senses could exist in a language, and with this above assumption (4) we look for derivationally related linguistic categories of terms from the spice domain. Under these categories we will include:

the names (nouns) · names of the sensation induced by the spice (nouns, adjectives) · synaesthetic properties associated with the spice (adjectives, verbs) · cognate verbs of seasoning, cooking (verbs) · denominal metaphors, idiomatic expressions (nouns, verbs, phrases)

The English compound ‘pep talk’ appeared in colloquial American English in the 20th century, and contains ‘pep’, which is a shortening for pepper, meaning “energy and high spirits; liveliness, vigour, power” (OED). We can see the WordNet mappings showing ‘ginger’ as one of the synonyms for ‘pep’, and consulting a dictionary confirms the evidence of a second spice representing ‘liveliness’:

<sup>4</sup>OUP, n.d., pepper, n.

<sup>5</sup>An ambiguous name for an African source of “pepper”, it can refer to one of three different spice yielding plants: *Aframomum melegueta* (grains of paradise, melegueta pepper, etc.); *Piper guineense* (West African pepper, Ashanti pepper, etc.); *Xylopia aethiopica* (Grains of Selim, Senegal pepper, etc.)

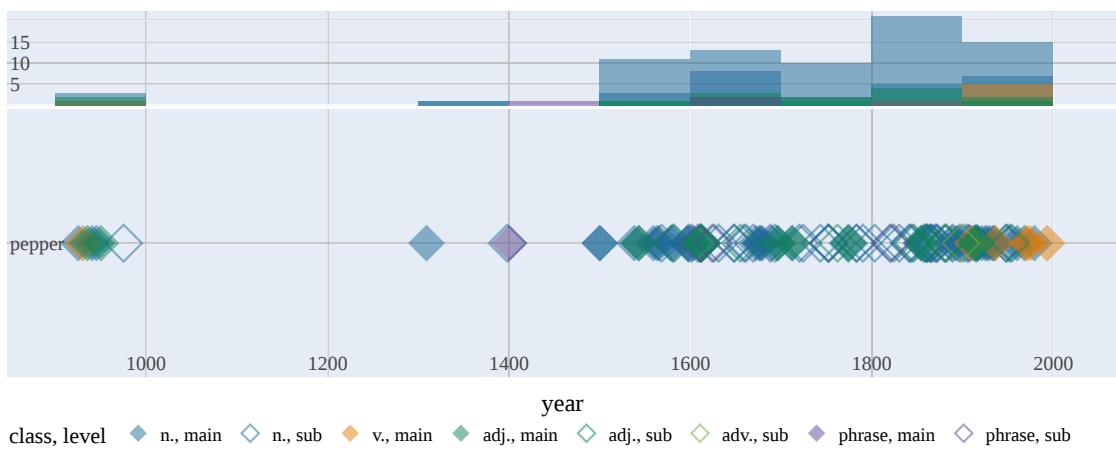


Figure 7.3 A timeline of words and phrases derived from *pepper*, based on main- and sub-level entries in the OED, and plotted by the dates of their attestations. A histogram on the top margin shows the number of attestations in 50 year increments. To explore the data points in an interactive plot, please visit the following link [http://htmlpreview.github.io/?https://github.com/partigabor/ph-d-test/blob/main/oed\\_pepper.html](http://htmlpreview.github.io/?https://github.com/partigabor/ph-d-test/blob/main/oed_pepper.html).

“Spirit, pep, energy; temper. Frequently in to put ginger (into), to show ginger.” (OED), in American slang.

We suspect that word frequencies in corpora would show their relative importance in a language, hence for example ‘Sichuan pepper’ and its variations<sup>34</sup> in an English corpus should have a smaller relative frequency (0.03 per million words), than ‘花椒’ huājiāo (“Sichuan pepper”) in a Chinese corpus (4.6 per million), or ‘हळी’ haldī (“turmeric”) in a Hindi corpus should have a very high frequency score (27.29 per million words), which arguably shows the importance of this spice in Indian culture. These are merely examples from the preparatory stage, but similar observations shall be refined and collected in a tasteful and readable manner in the dissertation.

# Conclusion

Conclusions and Suggestions for Future Research (the latter being optional)

## 7.3 Future Studies



# Primary Sources

al-Qānūn fī l-Tibb [القانون في الطب] [The Canon of Medicine] by Ibn Sīnā — 1025. [12](#)

Bencao Gangmu 本草綱目 [Compendium of Materia Medica] by Li Shizhen, 1578 [12](#)

Hou Hanshu 後漢書 [Book of the Later Han] 5<sup>th</sup> c. AD [10](#)

Kangxi Zidian 康熙字典 [Kangxi Dictionary] 1716 [99](#)

Kitāb al-Ḥāwī fī l-Tibb [كتاب الحاوي في الطب] [The Comprehensive Book of Medicine] by Abū Bakr al-Rāzī/Rhazes (d. 925/935) [65](#)

Liji 禮記 [The Book of Rites] Warring States period, 475–221 BC [98](#)

Lisān al-‘Arab [لسان العرب] [Tongue of the Arabs] — 1290 [25](#)

Periplus Maris Erythraei [Periplus of the Erythraean Sea] — 1<sup>st</sup> c. AD [25](#)

Shennong Bencaojing 神農本草經 [Shennong's Classic Herbal] ca. 200 AD [12](#)

Shiwu Bencao 食物本草 [Materia Medica of Food] Ming, 1621 [152](#)

Shuowen Jiezi 說文解字 [Discussing Writing and Explaining Characters] 100 AD [25](#)

Suśrutasamhitā सुश्रुतसंहिता [Suśruta's Compendium] ca. 600 AD [61](#)

Youyang Zazu 西陽雜俎 [Miscellaneous Morsels from Youyang] by Duan Chengsi, 9<sup>th</sup> c. [25](#)



# Bibliography

- Academia Sinica. (1993–2008). *Scripta Sinica*. <https://hanchi.ihp.sinica.edu.tw/ihp/hanji.htm> (Cited on p. 27).
- Adams, D. Q. (2013). *A Dictionary of Tocharian B: Revised and Greatly Enlarged*. Rodopi. (Cited on pp. 50, 52, 53).
- ad-Dīnawarī, A. H. (1974). *The Book of Plants* (L. Bernhard, Ed.). Franz Steiner Verlag. (Cited on p. 96).
- Adelaar, K. A. (1994). Malay and Javanese Loanwords in Malagasy, Tagalog and Siraya (Formosa). *Bijdragen Tot de Taal-, Land- En Volkenkunde [Contributions to Linguistics, Geography and Ethnology]*, 150(1), 50–65 (Cited on p. 151).
- AHD, E. O. T. (Ed.). (2022). *The American Heritage Dictionary of the English Language* (5th ed.). HarperCollins Publishers. <https://www.ahdictionary.com/> (Cited on pp. 44, 45, 50, 61, 64, 66, 72, 73, 131).
- al-Farāhīdī, K. b. A. [ca. 786]. *Kitāb Al-‘Ayn [The Source]*. <http://arabiclexicon.hawramani.com/al-khalil-b-ahmad-al-farahidi-kitab-al-ain/> (Cited on p. 52).
- al-Ghāfiķī, A. J. A. i. M. (1932). *The Abridged Version of "The Book of Simple Drugs" of Ahmad Ibn Muhammad al-Ghāfiqī*. (Cited on p. 88).
- Allan, P. K. (2021). Finding the Cure for Scurvy. *Naval History Magazine*, 35(1). Retrieved August 11, 2022, from <https://www.usni.org/magazines/naval-history-magazine/2021/february/finding-cure-scurvy> (Cited on p. 151).
- Allen, L. H., Prentice, A., & Caballero, B. (Eds.). (2013). *Encyclopedia of Human Nutrition*. Elsevier Science. (Cited on p. 1).
- Almaany. (n.d.). *Almaany.Com*. Retrieved July 13, 2022, from <https://www.almaany.com/en/dict/ar-en/> (Cited on pp. 40, 41).
- Alrabiah, M., Al-Salman, A., & Atwell, E. S. (2013). The Design and Construction of the 50 Million Words KSUCCA. *Proceedings of WACL'2 Second Workshop on Arabic Corpus Linguistics*, 5–8. <https://doi.org/http://eprints.whiterose.ac.uk/81860/> (Cited on p. 27).
- Alrabiah, M., Alhelewh, N., Al-Salman, A., & Atwell, E. S. (2014). An Empirical Study on the Holy Quran Based on a Large Classical Arabic Corpus. *International Journal of Computational Linguistics (IJCL)*, 5(1), 1–13. <http://eprints.whiterose.ac.uk/81839/> (Cited on p. 27).
- Amar, Z., & Lev, E. (2017). *Arabian Drugs in Early Medieval Mediterranean Medicine*. Edinburgh University Press. (Cited on pp. 10, 75, 76, 102, 126, 142).
- Apicius, M. G. (1977). *Apicius, Cookery and Dining in Imperial Rome: A Bibliography, Critical Review and Translation of the Ancient Book Known as 'Apicius de Re Coquinaria'* (J. D. Vehling, Ed.). Dover Publications. (Cited on p. 25).
- Asatrian, G. (2012). Marginal Remarks on the History of Some Persian Words. *Iran and the Caucasus*, 16(1), 105–116. <https://doi.org/10.1163/160984912X13309560274172> (Cited on p. 73).

- Asbaghi, A. (1988). *Persische Lehnwörter Im Arabischen* [Persian Loanwords in Arabic]. Otto Harrassowitz. (Cited on p. 132).
- Ash, A. (2020, November 10). *Why Frankincense and Myrrh Are so Expensive*. Business Insider. Retrieved August 5, 2022, from <https://www.businessinsider.com/why-frankincense-and-myrrh-are-so-expensive-2020-10> (Cited on p. 13).
- Austin, D. F., & Felger, R. S. (2008). Sichuan Peppers and the Etymology of Fagara (Rutaceae). *Economic Botany*, 62(4), 567–573 (Cited on pp. 9, 15, 136).
- Ālam, H. (2011). Dārčīnī. In *Encyclopaedia Iranica*. Retrieved June 6, 2022, from <https://iranicaonline.org> (Original work published 1994). (Cited on pp. 90, 95–98)
- Baalbaki, R. (1995). *Al-Mawrid: A Modern Arabic-English Dictionary* (7th ed.). Dar el-Ilm lil-Malayin. (Cited on pp. 39–41, 52, 54, 76, 78, 80, 82, 102, 127, 133, 134, 142, 143, 146, 147).
- Bagli, M. (2021). *Tastes We Live by: The Linguistic Conceptualisation of Taste in English*. De Gruyter Mouton. (Cited on p. 14).
- Baretti, G. (1755). *An Introduction to The Italian Language: Containing Specimens Both of Prose and Verse*. A. Millar. (Cited on p. 39).
- Barnes, J., Anderson, L. A., & Phillipson, J. D. (2007). *Herbal Medicines* (3rd ed.). Pharmaceutical Press. (Cited on p. 33).
- Barth, J. (2019). *Pepper: A Guide to the World's Favorite Spice*. Rowman & Littlefield. (Cited on p. 57).
- Baxter, W. H., & Sagart, L. (2014). *Old Chinese: A New Reconstruction*. Oxford University Press. (Cited on p. 53).
- Bearman, P. J., Bianquis, T., Bosworth, C. E., van Donzel, E., & Heinrichs, W. P. (Eds.). (1960–2005). *The Encyclopaedia of Islam* (2nd ed.). E. J. Brill. <https://referenceworks.brillonline.com/browse/encyclopaedia-of-islam-2> (Cited on p. 26).
- Beekes, R. S. P., & van Beek, L. (2010). *Etymological Dictionary of Greek*. Brill. (Cited on pp. 26, 44, 45, 64, 66, 72, 73, 91–93, 95, 106, 183).
- Beers, S.-J. (2012). *Jamu: The Ancient Indonesian Art of Herbal Healing*. Tuttle. <http://site.ebrary.com/id/10595159> (Cited on p. 13).
- Bellwood, P. S., Fox, J. J., & Tryon, D. T. (Eds.). (2006). *The Austronesians: Historical and Comparative Perspectives*. Dept. of Anthropology as part of the Comparative Austronesian Project, Research School of Pacific and Asian Studies, Australian National University. (Cited on p. 151).
- Bennett, E. L., Wace, A. J. B., Wace, E. B., & Chadwick, J. (1958). The Mycenae Tablets II. *Transactions of the American Philosophical Society*, 48(1), 1–122 (Cited on p. 73).
- Billing, J., & Sherman, P. W. (1998). Antimicrobial Functions of Spices: Why Some Like It Hot. *The Quarterly Review of Biology*, 73(1), 3–49. <https://doi.org/10.1086/420058> (Cited on p. 12).
- Black, J., George, A., & Postgate, N. (Eds.). (2000). *A Concise Dictionary of Akkadian* (2nd ed.). Harrassowitz Verlag. (Original work published 1999). (Cited on pp. 73, 132)
- Blážek, V. (2006). Etymology. In K. Versteegh (Ed.), *Encyclopedia of Arabic Language and Linguistics* (pp. 65–69, Vol. 2). Brill. <https://referenceworks.brillonline.com/browse/encyclopedia-of-arabic-language-and-linguistics> (Cited on p. 26).

- Bosworth, J., & Toller, T. N. (Eds.). (2014). *An Anglo-Saxon Dictionary, Based on the Manuscript Collections of the Late Joseph Bosworth*. Faculty of Arts, Charles University. <https://bosworthtoller.com> (Original work published 1898). (Cited on p. 61).  
Original place: Oxford
- Britannica, T. E. o. E. (Ed.). (n.d.). Allspice. In *Encyclopedia Britannica*. Encyclopædia Britannica, Inc. Retrieved March 24, 2022, from <https://www.britannica.com/plant/allspice> (Cited on pp. 34, 35).
- Brown, F., Driver, S. R., & Briggs, C. A. (1939). *A Hebrew and English Lexicon of the Old Testament: With an Appendix Containing the Biblical Aramaic* (E. Robinson, Trans.). Oxford University Press. (Original work published 1906). (Cited on p. 92)
- Bucaille, M. (1990). *Mummies of the Pharaohs: Modern Medical Investigations* (A. D. Pannell & M. Bucaille, Trans.). St. Martin's Press. (Cited on p. 60).
- Burkhill, I. H. (1935). *A Dictionary of the Economic Products of the Malay Peninsula*. Published on behalf of the Governments of the Straits Settlements and Federated Malay States by the Crown Agents for the Colonies. (Cited on pp. 10, 124).
- Burnet, I. (2011). *Spice Islands*. Rosenberg Pub. (Cited on p. 10).
- Burrow, T., & Emeneau, M. B. (1984). *A Dravidian Etymological Dictionary* (2nd ed.). Oxford University Press. (Cited on p. 74).
- Business Insider. (2021, October 30). *Why Green Cardamom Is So Expensive* [Video]. YouTube. Retrieved June 3, 2022, from <https://www.youtube.com/watch?v=fXOaWevi6f8> (Cited on p. 67).
- Butt, M. S., Pasha, I., Sultan, M. T., Randhawa, M. A., Saeed, F., & Ahmed, W. (2013). Black Pepper and Health Claims: A Comprehensive Treatise. *Critical Reviews in Food Science and Nutrition*, 53(9), 875–886. <https://doi.org/10.1080/10408398.2011.571799> (Cited on p. 57).
- Buzurg ibn Shahriyār. (1908). *Kitāb ‘ajāib al-Hind* [The Book of the Marvels of India]. At the expense of bookseller Mustafa Fahmy, at al-Saada Press, together with the Governorate of Egypt. <http://remacle.org/bloodwolf/arabe/anonyme/inde.htm> (Original work published ca. 900–953). (Cited on p. 90)
- Carstens, E., Carstens, M. I., Dessirier, J.-M., O'Mahony, M., Simons, C. T., Sudo, M., & Sudo, S. (2002). It Hurts so Good: Oral Irritation by Spices and Carbonated Drinks and the Underlying Neural Mechanisms. *Food Quality and Preference*, 13(7-8), 431–443 (Cited on p. 11).
- Casson, L. (1989). *The Periplus Maris Erythraei: Text With Introduction, Translation, and Commentary*. Princeton University Press. (Cited on p. 25).
- Chadwick, J. (1976). *The Mycenaean World*. Cambridge University Press. <https://archive.org/details/mycenaeanworldoochad/page/118/mode/2up?q=coriander> (Cited on p. 104).
- Chanca, D. Á. (2003). American Journeys Collection: Letter of Dr. Chanca on the Second Voyage of Columbus. (Cited on p. 34).
- Chang, K.-C. (1977). *Food in Chinese Culture: Anthropological and Historical Perspectives*. Yale University Press. (Cited on p. 9).

- Ch'en, K. K. S. (1964). *Buddhism in China: A Historical Survey*. Princeton University Press. (Cited on p. 27).
- Chennault, C. L. (2006). The Reclusive Gui–Cinnamon or Osmanthus? *Early Medieval China*, 2006(1), 151–181. <https://doi.org/10.1179/152991006788126177> (Cited on pp. 85, 86, 99).
- Chinese Academy of Social Sciences (Ed.). (2016). *Xiandai Hanyu Cidian [A Dictionary of Modern Chinese]* (7th ed.). The Commercial Press. (Cited on p. 47).
- Ciancaglini, C. A. (2008). *Iranian Loanwords in Syriac*. Dr. Ludwig Reichert Verlag. (Cited on p. 120).
- Cobb, M. A. (2019). *The Indian Ocean Trade in Antiquity: Political, Cultural and Economic Impacts*. Routledge. (Cited on p. 10).
- Colón, F. (1959). *The Life of the Admiral Christopher Columbus by His Son Ferdinand* (B. Keen, Trans.). Rutgers University Press. (Original work published 1571). (Cited on p. 33)
- Columbus, C. (1893). *The Spanish Letter of Columbus: Written by Him on Feb. 15, 1493 to Announce the Discovery of America* (Bernard Quaritch, Trans.; Facsimile with Translation). Bernard Quaritch. (Cited on p. 33).
- Columbus, C. (2010). *Journal of Christopher Columbus (During His First Voyage, 1492-93) and Documents Relating to the Voyages of John Cabot and Gaspar Corte Real* (C. R. Markham, Ed.). Ashgate. (Original work published 1893). (Cited on pp. 33, 34)
- Corn, C. (1998). *The Scents of Eden: A Narrative of the Spice Trade*. Kodansha International. (Cited on p. 10).
- Corominas, J. (1987). *Breve Diccionario Etimológico De La Lengua Castellana [Brief Etymological Dictionary of the Castilian Language]* (3rd ed.). Editorial Gredos. (Cited on pp. 34, 36, 37, 145, 146, 184).
- Corriente, F. (2008). *Dictionary of Arabic and Allied Loanwords: Spanish, Portuguese, Catalan, Galician and Kindred Dialects*. Brill. (Cited on pp. 64, 66).
- Counts, D. B. (1996). Regum Externorum Consuetudine: The Nature and Function of Embalming in Rome. *Classical Antiquity*, 15(2), 189–202. <https://doi.org/10.2307/25011039> (Cited on p. 88).
- Crane, G. R. (Ed.). (n.d.). *Perseus Digital Library*. Tufts University. <http://www.perseus.tufts.edu/hopper/> (Cited on p. 25).
- note: Web portal.
- Craze, R. (1997). *The Spice Companion: The Culinary, Cosmetic, and Medicinal Uses of Spices*. People's Medical Society. (Cited on pp. 7, 33).
- Cresswell, J. (Ed.). (2021). *Oxford Dictionary of Word Origins* (3rd ed.). Oxford University Press. <https://global.oup.com/academic/product/oxford-dictionary-of-word-origins-9780198868750?cc=hk&lang=en&> (Cited on p. 61).
- Cumo, C. (Ed.). (2013). *Encyclopedia of Cultivated Plants: From Acacia to Zinnia*. (Cited on pp. 68, 105).
- CUP. (2022). *Cambridge Dictionary: English–Traditional Chinese* (Online). Cambridge University Press. <https://dictionary.cambridge.org/> (Cited on p. 46).
- Czarra, F. (2009). *Spices: A Global History*. Reaktion Books. <https://press.uchicago.edu/ucp/books/book/distributed/S/b06899739.html> (Cited on pp. 4, 8, 32, 33, 86).

- Dahl, Ö. (2013). Tea. In M. S. Dryer & M. Haspelmath (Eds.), *The World Atlas of Language Structures Online*. Max Planck Institute for Evolutionary Anthropology. <https://wals.info/chapter/138> (Cited on p. 180).
- Dalby, A. (1996). *Siren Feasts: A History of Food and Gastronomy in Greece*. Routledge. (Cited on p. 9).
- Dalby, A. (2000). *Dangerous Tastes: The Story of Spices*. University of California Press. <https://www.worldhistory.org/books/0520236742/> (Cited on pp. 8, 33, 34, 48, 61, 68, 73, 74, 88, 91, 151).
- Dalby, A. (2001). Christopher Columbus, Gonzalo Pizarro, and the Search for Cinnamon. *Gastronomica*, 1(2), 40–49. <https://doi.org/10.1525/gfc.2001.1.2.40> (Cited on p. 8).
- Dalby, A. (2003). *Food in the Ancient World, from A to Z*. Routledge. (Cited on p. 9).
- Dalby, A. (2010). *Tastes of Byzantium: The Cuisine of a Legendary Empire*. Tauris. (Cited on p. 9).
- Dalby, A., & Grainger, S. (1996). *The Classical Cookbook*. J. Paul Getty Museum. (Cited on p. 9).
- Dash, V. B. (1976). Saffron in Ayurveda and Tibetan Medicine. *The Tibet Journal*, 1(2), 59–66 (Cited on p. 133).
- Davidson, A. (2014). *The Oxford Companion to Food* (3rd ed.). Oxford University Press. <https://doi.org/10.1093/acref/9780199677337.001.0001> (Cited on pp. 9, 103, 105, 106).
- Davis, J. F. (1824). *A Vocabulary Containing Chinese Words and Phrases: Peculiar to Canton and Macao, and to the Trade of Those Places*. The Honorable Company's Press by P. P. Thoms. (Cited on p. 136).
- De Kerros, E. (2016). *Pepper*. Editions de La Martinière. (Cited on pp. 57, 60).  
Notes: Terre Exotique.
- De Romanis, F. (2020). *Indo-Roman Trade and the Muziris Papyrus*. Oxford University Press. (Cited on p. 60).
- DeFrancis, J. (2003). *ABC Chinese-English Comprehensive Dictionary: Alphabetically Based Computerized*. University of Hawai'i Press. (Cited on pp. 77, 78, 81, 82, 102, 108, 121, 126, 127, 134, 136, 137, 140, 142, 143, 146, 147).
- de Goeje, M. J. (Ed.). (1870). *Bibliotheca Geographorum Arabicorum*. E. J. Brill. <https://brill.com/view/serial/BGA> (Cited on p. 25).
- Depner, S. C.-y. (2019). Chinese Language and Fruits. In C.-R. Huang, Z. Jing-Schmidt, & B. Meisterernst (Eds.), *The Routledge Handbook of Chinese Applied Linguistics* (pp. 92–104). Routledge. (Cited on p. 13).
- Derks, A., Turner, S., & Thúy Hạnh, N. (2020). Bastard Spice or Champagne of Cinnamon? Conflicting Value Creations along Cinnamon Commodity Chains in Northern Vietnam. *Development and Change*, 51(3), 895–920. <https://doi.org/10.1111/dech.12582> (Cited on p. 87).
- DerkSEN, R. (2008). *Etymological Dictionary of the Slavic Inherited Lexicon*. Brill. (Cited on p. 184).
- Detienne, M. (1994). *The Gardens of Adonis: Spices in Greek Mythology* (J. Lloyd, Trans.). Princeton University Press. (Cited on p. 8).

- Dietrich, A. (2004a). *Afāwīh*. In P. J. Bearman, T. Bianquis, C. E. Bosworth, E. van Donzel, & W. P. Heinrichs (Eds.), *The Encyclopaedia of Islam* (2nd ed., pp. 42–43, Vol. 12). E. J. Brill. <https://referenceworks.brillonline.com/browse/encyclopaedia-of-islam-2> (Cited on p. 9).
- Dietrich, A. (2004b). *Dār Ṣīnī*. In P. J. Bearman, T. Bianquis, C. E. Bosworth, E. van Donzel, & W. P. Heinrichs (Eds.), *The Encyclopaedia of Islam* (2nd ed., pp. 197–198, Vol. 12). E. J. Brill. <https://referenceworks.brillonline.com/browse/encyclopaedia-of-islam-2> (Cited on pp. 88, 90, 95–98).
- Dinesh, R., Leela, N. K., Zachariah, T. J., & Anandaraj, M. (2015). Controversies Surrounding Coumarin in Cassia: The Good, the Bad and the Not so Ugly. *Current Science*, 108(4), 482–484. <https://doi.org/10.2307/24216590> (Cited on pp. 85, 87).
- Dioscorides, P. (1083). *Kitāb Al-Ḥašā'iš Fī Hāyūlā al-‘ilāg al-Ṭibbī* [The Book of Herbs among Substances of Medical Treatment] (H. b. I. al-Nāṭīlī & Stephanus b. Bāsīl, Trans.). <http://hdl.handle.net/1887.1/item:1578364> (Cited on p. 99).
- Dioscorides, P. (2005). *De Materia Medica* (L. Y. Beck, Trans.). Olms-Weidmann. (Original work published ca. 50–70). (Cited on p. 25)
- Donkin, R. A. (2003). *Between East and West: The Moluccas and the Traffic in Spices Up to the Arrival of Europeans*. American Philosophical Society. (Cited on pp. 10, 75–77).
- Dott, B. R. (2020). *The Chile Pepper in China: A Cultural Biography*. Columbia University Press. (Cited on pp. 8, 81, 152).
- Doumas, C. (1992). *The Wall-Paintings of Thera* (A. Doumas, Trans.). Kapon Editions, The Thera Foundation – Petros M. Nomikos. (Cited on p. 130).
- Dozy, R. P. A. (1881). *Supplément aux Dictionnaires Arabes*. E. J. Brill. (Cited on p. 40).
- Dryer, M. S., & Haspelmath, M. (Eds.). (2013). *WALS Online*. Max Planck Institute for Evolutionary Anthropology. <https://wals.info/> (Cited on p. 182).
- Duan, C. [ca. 860]. *Youyang Zazu* [Miscellaneous Morsels from Youyang]. (Cited on pp. 25, 75, 76).
- Duke, J. A. (2002). *CRC Handbook of Medicinal Spices*. CRC press. (Cited on pp. 12, 32–34, 39).
- Duke, J. A., Duke, P.-A. K., & DuCellier, J. L. (2008). *Duke's Handbook of Medicinal Plants of the Bible*. CRC Press. (Cited on p. 10).
- Durkin, P. (2014). *Borrowed Words: A History of Loanwords in English*. Oxford University Press. (Cited on p. 156).
- Eaton, R. M. (2019). *India in the Persianate Age: 1000–1765*. Allen Lane. (Cited on p. 185).
- Ebers Papyrus. (1930). *The Papyrus Ebers* (C. P. Bryan, Trans.). Geoffrey Bles. (Original work published ca. 1550 B.C.E.). (Cited on p. 104).
- Eirinberg, S. (2021, March 1). *Tellicherry Peppercorns vs. Regular Malabar Black Pepper – What's the Difference?* The Reluctant Blogger/The Reluctant Trading Experiment. Retrieved March 8, 2022, from <https://reluctanttrading.com/blogs/the-reluctant-blogger/18993899-tellicherry-peppercorns-vs-regular-malabar-black-pepper-whats-the-difference> (Cited on p. 60).
- Engelhardt, U. (2001). Dietetics in Tang China and the First Extant Works of *Materia Dietetica*. In E. Hsu (Ed.), *Innovation in Chinese Medicine* (pp. 173–191). Cambridge University Press. (Cited on p. 13).

- Eriksson, N., Wu, S., Do, C. B., Kiefer, A. K., Tung, J. Y., Mountain, J. L., Hinds, D. A., & Francke, U. (2012, September 10). *A Genetic Variant Near Olfactory Receptor Genes Influences Cilantro Preference*. Retrieved March 14, 2022, from <http://arxiv.org/abs/1209.2096> (Cited on p. 105).
- Erman, A., & Grapow, H. (1926). *Wörterbuch Der Ägyptischen Sprache [Dictionary of the Egyptian Language]* Vol. 1. Akademie-Verlag. (Cited on pp. 44, 45).
- Española, A. d. A. d. l. L. (2014). *Diccionario de La Lengua Española* (23rd ed.). Real Academia Española. <https://dle.rae.es> (Cited on p. 36). versión 23.4 en línea.
- Farrell, K. T. (1985). *Spices, Condiments, and Seasonings* (2nd ed.). AVI Pub. Co. (Cited on pp. 7, 33–35, 43).
- Farrimond, S. (2018). *The Science of Spice: Understand Flavour Connections and Revolutionize Your Cooking*. Penguin Random House. <https://www.overdrive.com/search?q=1A704FA2-E323-4FD5-95F9-12EDE5F93DDB> (Cited on p. 11).
- Feliks, J. (2007). Plants. In F. Skolnik & M. Berenbaum (Eds.), *Encyclopaedia Judaica* (2nd ed., Vol. 16, pp. 219–225, Vols. 22, Vol. 16). Thomson Gale in Association with Keter Publishing House. (Cited on p. 93).
- Ford, P. W., Harmon, A. D., Tucker, A. O., Sasser, M., Jackoway, G., Albornoz, G., Grypa, R. D., Pratt, J. L., & Cardellina, J. H. (2019). Cinnamon – Differentiation of Four Species by Linking Classical Botany to an Automated Chromatographic Authentication System. *Journal of AOAC International*, 102(2), 363–368. <https://doi.org/10.5740/jaoacint.18-0343> (Cited on pp. 18, 86, 87).
- Foundation, E. I., & Yarshater, E. (Eds.). (1996–present). *Encyclopædia Iranica* (Online). Retrieved August 7, 2022, from <https://iranicaonline.org> (Cited on p. 26).
- Fraenkel, S. (1886). *Die Aramäischen Fremdwörter Im Arabischen [The Aramaic Loanwords in Arabic]*. E. J. Brill. (Cited on pp. 51, 52).
- Freedman, P. (2008). *Out of the East: Spices and the Medieval Imagination*. Yale University Press. (Cited on p. 8).
- Freedman, P. (2015). Health, Wellness and the Allure of Spices in the Middle Ages. *Journal of Ethnopharmacology*, 167, 47–53. <https://doi.org/10.1016/j.jep.2014.10.065> (Cited on p. 13).
- Frisk, H. (2021). *Griechisches Etymologisches Wörterbuch [Greek Etymological Lexicon]*. Carl Winter, Universitätsverlag. (Original work published 1960–1972). (Cited on p. 106)
- Garcia da Orta. (1913). *Colóquios dos simples e drogas da India* [Colloquies on the Simples and Drugs of India] (C. Markham, Trans.; Lisbon, 1895, New). Henry Sotheran and Co. (Original work published 1563). (Cited on pp. 49, 51)
- GBIF Secretariat. (2021). *GBIF Backbone Taxonomy*. Global Biodiversity Information Facility. <https://doi.org/10.15468/39omei> (Cited on pp. 70, 71).
- George, C. K. (2012). Asafoetida. In K. V. Peter (Ed.), *Handbook of Herbs and Spices* (2nd ed., pp. 151–165, Vols. 3, Vol. 2). Woodhead Publishing Limited. <http://www.sciencedirect.com/science/book/9780857090409> (Cited on p. 51).

- Gerarde, J. (1597). *The Herball, or Generall Historie of Plantes: Gathered by John Gerarde of London, Master in Chirurgerie*. Iohn Norton. <https://archive.org/details/mobot31753000817749> (Cited on p. 43).
- Gharib, B. (1995). *Sogdian Dictionary: Sogdian-Persian-English* (S. Fotouhi, Ed.). Farhangan Publications. (Cited on p. 50).
- Gledhill, D. (2008). *The Names of Plants* (4th ed.). Cambridge University Press. <Information%20on%20this%20title:%20www.cambridge.org/9780521866453> (Cited on p. 45).
- Goitein, S. D., & Friedman, M. A. (2008). *India Traders of the Middle Ages: Documents from the Cairo Geniza: India Book*. Brill. (Cited on p. 96).
- Golfam, S. (2017). Saffron in Mythology. *Acta Horticulturae*, (1184), 21–24. <https://doi.org/10.17660/ActaHortic.2017.1184.3> (Cited on p. 132).
- Gómez de Silva, G. (1985). *Elsevier's Concise Spanish Etymological Dictionary*. Elsevier. (Cited on pp. 36, 145, 146, 184).
- Gonçalves, J. A. (1831). *Diccionario portuguez-china no estilo vulgar mandarin e classico geral*. Collegio de S. Jose. <https://doi.org/10.1163/9789004192560.HT-1047> (Cited on p. 47).
- Gonçalves, J. A. (1841). *Lexicon Magnum Latino-Sinicum*. Collegio Sancti Joseph. <https://doi.org/10.1163/9789004192560.HT-1047> (Cited on p. 47).
- González, J., Barros-Loscertales, A., Pulvermüller, F., Meseguer, V., Sanjuán, A., Belloch, V., & Ávila, C. (2006). Reading Cinnamon Activates Olfactory Brain Regions. *NeuroImage*, 32(2), 906–912. <https://doi.org/10.1016/j.neuroimage.2006.03.037> (Cited on p. 14).
- Green, A. (2006). *Field Guide to Herbs & Spices: How to Identify, Select, and Use Virtually Every Seasoning at the Market*. Retrieved March 14, 2022, from <http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=937726> (Cited on p. 35).
- Green, N. (Ed.). (2019). *The Persianate World: The Frontiers of a Eurasian Lingua Franca* (1st ed.). University of California Press. <https://doi.org/10.2307/j.ctvr7fdry> (Cited on p. 185).
- Gutas, D. (1998). *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement in Baghdad and Early 'Abbāsid Society (2nd-4th/8th-10th Centuries)*. Routledge. (Cited on p. 163).
- Gutas, D. (2012). The Arabic Transmission of Dioskurides: Philology Triumphant. *Journal of the American Oriental Society*, 132(3), 457. <https://doi.org/10.7817/jameroriesoci.132.3.0457> (Cited on p. 97).
- Guthrie, W. B. (2009). The Trade-Language Origin of "Turmeric". *Word*, 60(1), 79–90. <https://doi.org/10.1080/00437956.2009.11432594> (Cited on pp. 9, 19).
- Hakluyt, R. (1589). *The Principall Navigations, Voiages, and Discoveries of the English Nation: Made by Sea or over Land to the Most Remote and Farthest Distant Quarters of the Earth at Any Time within the Compasse of These 1500 Years: Divided into Three Several Parts According to the Positions of the Regions Whereunto They Were Directed*. Imprinted at London by George Bishop and Ralph Newberie, deputies to Christopher Barker, printer to the Queen's Most Excellent Majestie. <http://online.canadiana.ca/view/oocihm.35668> (Cited on p. 51).
- Hall, K. R. (2010). *A History of Early Southeast Asia: Maritime Trade and Societal Development, 100–1500*. Rowman & Littlefield Publishers. (Cited on p. 10).

- Hammarström, H., Forkel, R., Haspelmath, M., & Bank, S. (2022). *Glottolog 4.6*. Max Planck Institute for Evolutionary Anthropology. <https://doi.org/10.5281/zenodo.6578297> (Cited on p. 182).
- Hansen, V. (2012). *The Silk Road: A New History*. Oxford University Press. (Cited on p. 10).
- Haq, I.-U., Imran, M., Nadeem, M., Tufail, T., Gondal, T. A., & Mubarak, M. S. (2021). Piperine: A Review of Its Biological Effects. *Phytotherapy Research*, 35(2), 680–700. <https://doi.org/10.1002/ptr.6855> (Cited on p. 57).
- Harper, D. (Ed.). (n.d.-a). Coriander. In *Online Etymology Dictionary*. Retrieved February 1, 2022, from <https://www.etymonline.com/word/coriander> (Cited on pp. 105, 106).
- Harper, D. (n.d.-b). *Online Etymology Dictionary*. <https://www.etymonline.com> (Cited on pp. 37, 61).
- Hartemink, R. (1995). *National Emblem of Sri Lanka - Coat of Arms (Crest) of National Emblem of Sri Lanka*. Heraldry of the World. Retrieved June 9, 2022, from [https://www.heraldry-wiki.com/heraldrywiki/index.php?title=National\\_Emblem\\_of\\_Sri\\_Lanka](https://www.heraldry-wiki.com/heraldrywiki/index.php?title=National_Emblem_of_Sri_Lanka) (Cited on p. 91).
- Haspelmath, M., & Tadmor, U. (Eds.). (2009a). *Loanwords in the World's Languages: A Comparative Handbook*. De Gruyter Mouton. <https://doi.org/doi:10.1515/9783110218442> (Cited on pp. 172, 173).
- Haspelmath, M., & Tadmor, U. (Eds.). (2009b). *The World Loanword Database (WOLD)*. Max Planck Institute for Evolutionary Anthropology. <https://wold.clld.org/> (Cited on pp. 177, 187).
- Haw, S. G. (2017). Cinnamon, Cassia and Ancient Trade. *Journal of Ancient History and Archaeology*, 4(1), 5–18. <https://doi.org/10.14795/j.v4i1.211> (Cited on pp. 9, 15, 86, 88, 96).
- Hayyim, S. (1934–1936). *New Persian-English Dictionary, Complete and Modern, Designed to Give the English Meanings of over 50,000 Words, Terms, Idioms, and Proverbs in the Persian Language, as Well as the Transliteration of the Words in English Characters. Together with a Sufficient Treatment of All the Grammatical Features of the Persian Language*. Librairie-imprimerie Béroukhim. <https://dsal.uchicago.edu/dictionaries/hayyim/> (Cited on pp. 46, 139, 178).
- Hemmerdinger, B. (1968). Noms Communs Grecs d'Origine Egyptienne [Greek Common Names of Egyptian Origin]. *Glotta*, 46(3/4), 238–247 (Cited on pp. 44, 45).
- Herman, L. (2015). *Herb & Spice Companion: The Complete Guide to Over 100 Herbs & Spices*. Wellfleet Press. (Cited on p. 7).
- Hernández, F. (1615). *Cuatro Libros De La Naturaleza Y Virtudes De Las Plantas Y Animales Que Están Recibidos En Uso De Medicina En La Nueva España* [Four Books of the Nature and Virtues of Plants and Animals That Are Received in Use of Medicine in New Spain]. Francisco Jiménez. (Cited on p. 34).
- Herodotus. (1921). *Herodotus II: Books III and IV* (A. D. Godley, Trans.). William Heinemann; G. P. Putnam's Sons. (Original work published 430 B.C.E.). (Cited on pp. 90, 91)
- Hill, T. (2004). *Contemporary Encyclopedia of Herbs and Spices: Seasonings for the Global Kitchen*. J. Wiley. (Cited on pp. 56, 59).
- Hoad, T. F. (2003). *The Concise Oxford Dictionary of English Etymology*. Oxford University Press. <https://doi.org/10.1093/acref/9780192830982.001.0001> (Cited on pp. 61, 92, 94).

- Hoogervorst, T. (2012). *Southeast Asia in the Ancient Indian Ocean World: Combining Historical Linguistic and Archaeological Approaches* [Doctoral dissertation, University of Oxford]. Oxford. (Cited on p. 10).
- Hooper, D. (1929). On Chinese Medicine: Drugs of Chinese Pharmacies in Malaya. *The Gardens' Bulletin Straits Settlements*, 6(1-5), 1–163 (Cited on p. 155).
- Hosseinzadeh, H., & Nassiri-Asl, M. (2013). Avicenna's (Ibn Sina) the Canon of Medicine and Saffron (*Crocus Sativus*): A Review. *Phytotherapy Research*, 27(4), 475–483 (Cited on p. 12).
- Hourani, G. F. (1975). *Arab Seafaring in the Indian Ocean in Ancient and Early Medieval Times*. Octagon Books. (Cited on p. 10).
- Hu, S.-Y. (2005). *Food Plants of China*. The Chinese University Press. (Cited on pp. 8, 9, 21, 46, 68, 70, 71, 76, 77, 85, 86, 97–99, 107, 111, 136, 140).
- Hu, S.-y. (1999). *An Enumeration of Chinese Materia Medica*, 中藥詞彙 (Y. C. Kong & P. P. H. But, Eds.; 2nd ed.). Chinese University Press. (Original work published 1980). (Cited on pp. 46, 98)
- Huang, C.-R., & Xiong, J. (2019). Linguistic Synesthesia in Chinese. In C.-R. Huang, Z. Jing-Schmidt, & B. Meisterernst (Eds.), *The Routledge Handbook of Chinese Applied Linguistics* (pp. 294–312). Routledge. <https://doi.org/10.4324/9781315625157-4> (Cited on p. 13).
- Ibn al-Bayṭār. (1874). *Kitāb Al-Jāmi‘ Li-Mufradāt al-Adwiyā Wa-l-Aghdhiya* [*The Book of Medicinal and Nutritional Terms*]. [https://data.bnf.fr/en/12066947/\\_abd\\_allah\\_ibn\\_ah\\_mad\\_al-malaqi\\_ibn\\_al-bayt\\_ar/](https://data.bnf.fr/en/12066947/_abd_allah_ibn_ah_mad_al-malaqi_ibn_al-bayt_ar/) (Original work published ca. 1248). (Cited on p. 97)
- Ibn Khurdādhbih, A. ’.-Q. U. A. b. A. A. [ca. 870]. *Kitāb Al-Masālik Wa l-Mamālik* [*Book of Roads and Kingdoms*]. (Cited on pp. 91, 95).
- Ibn Manzūr, M. i. M. i. A. i. A. (1979). *Lisān al-‘Arab* [*The Tongue of the Arabs*]. Dar Sadir. (Original work published 1290). (Cited on pp. 52, 95)
- Ibn Sayyār al-Warrāq. (2007). *Annals of the Caliphs' Kitchens: Ibn Sayyār al-Warrāq's Tenth-Century Baghdad Cookbook* (N. Nasrallah, Trans.; Vol. 70). Brill. (Cited on p. 9).
- Ibn Sīnā. (1329). *Al-Qānūn Fī al-Tibb* [*The Canon of Medicine*]. <https://hdl.loc.gov/loc.wdl/wdl.15440> (Original work published 1025). (Cited on pp. 25, 75)
- Jurafsky, D. (2014). *The Language of Food: A Linguist Reads the Menu*. W.W. Norton & Company. (Cited on pp. 1, 13).
- Katz, S. H. (Ed.). (2003). *Encyclopedia of Food and Culture*. C. Scribner's Sons Thomson Gale. (Cited on p. 9).
- Katzer, G. (2012a). *Spice Pages: Pepper (Piper Nigrum, Black Peppercorns)*. Gernot Katzer's Spice Pages. Retrieved July 20, 2022, from [http://gernot-katzers-spice-pages.com/engl/Pipe\\_nig.html](http://gernot-katzers-spice-pages.com/engl/Pipe_nig.html) (Cited on p. 187).
- Katzer, G. (2012b). *Welcome to Gernot Katzer's Spice Pages*. Gernot Katzer's Spice Pages. Retrieved July 20, 2022, from <http://gernot-katzers-spice-pages.com/engl/> (Cited on p. 14).
- Kaufman, S. A., Hillers, D., Fitzmyer, J., & Sokoloff, M. (1987). *Comprehensive Aramaic Lexicon Project*. Hebrew Union College-Jewish Institute of Religion. <https://cal.huc.edu/> (Cited on p. 120).

- Kawatra, P., & Rajagopalan, R. (2015). Cinnamon: Mystic Powers of a Minute Ingredient. *Pharmacognosy Research*, 7(5), 1–6. <https://doi.org/10.4103/0974-8490.157990> (Cited on p. 87).
- Keay, J. (2006). *The Spice Route: A History*. University of California Press. (Cited on p. 7).
- Kilgarriff, A., Baisa, V., Bušta, J., Jakubíček, M., Kovář, V., Michelfeit, J., Rychlý, P., & Suchomel, V. (2014). The Sketch Engine: Ten Years On. *Lexicography*, 1(1), 7–36. <https://doi.org/10.1007/s40607-014-0009-9/> (Cited on p. 27).
- Kilgarriff, A., Rychlý, P., Smrž, P., & Tugwell, D. (2004). The Sketch Engine. *Information Technology*, 105(116). <https://is.muni.cz/publication/560635/en?lang=en> (Cited on p. 27).
- King, A. H. (2007). *The Musk Trade and the Near East in the Early Medieval Period* [Doctoral dissertation, Indiana University]. (Cited on p. 8).
- Kleeman, J., & Yu, H. (Eds.). (2010). *The Oxford Chinese Dictionary: English-Chinese, Chinese-English*. New York. (Cited on pp. 41, 46, 47, 65, 66, 102, 111, 115, 116, 118, 121, 126, 127, 133, 134, 140, 142, 143).
- Klein, E. (1987). *A Comprehensive Etymological Dictionary of the Hebrew Language for Readers of English*. Carta. (Cited on pp. 26, 73, 91–93).
- Kouyoumdjian, M. G. (1970). *A Comprehensive Dictionary Armenian-English*. Atlas Press. (Cited on p. 73).
- Krishnamurti, B. (2003). *The Dravidian Languages*. Cambridge University Press. [www.cambridge.org/9780521771115](http://www.cambridge.org/9780521771115) (Cited on pp. 119, 120).
- Krondl, M. (2007). *The Taste of Conquest: The Rise and Fall of the Three Great Cities of Spice*. Ballantine Books. (Cited on pp. 8, 190).
- Kunga. (2017, March 9). *What Is Saffron and Where to Buy Authentic Tibetan Saffron in Lhasa?* Tibet Travel Blog. Retrieved July 17, 2022, from <https://www.tibettravel.org/blog/buy-authentic-tibetan-saffron-in-lhasa/> (Cited on p. 133).
- Kurlansky, M. (2002). *Salt: A World History*. Walker and Co. (Cited on p. 8).
- Lakshmi, P. (2016). *The Encyclopedia of Spices and Herbs: An Essential Guide to the Flavors of the World*. ECCO. (Cited on p. 7).
- Lane, E. W. (1863). *An Arabic-English Lexicon: Derived From the Best and the Most Copious Eastern Sources* (S. Lane-Poole, Ed.). Williams and Norgate. (Cited on pp. 52, 56, 76, 78, 110, 113, 118, 136).
- Langenheim, J. H. (2003). *Plant Resins: Chemistry, Evolution, Ecology, and Ethnobotany*. Timber Press. (Cited on p. 48).
- Lau, J. (n.d.). *Yellow Bridge*. <https://www.yellowbridge.com/chinese/dictionary.php> (Cited on pp. 41, 133).
- Laufer, B. (1919). *Sino-Iranica: Chinese Contributions to the History of Civilization in Ancient Iran, With Special Reference to the History of Cultivated Plants and Products* (Vol. 3). Field Museum of Natural History. (Cited on pp. 10, 19, 49, 50, 52, 53, 65, 88, 97, 107, 111, 133, 157).
- Lawrence, B. M. (1984). Major Tropical Spices-Ginger (*Zingiber Officinale Rosc.*) *Perfumer & Flavorist*, 9(5), 1–40 (Cited on p. 151).

- Leach, H. (2001). Rehabilitating the "Stinking Herbe": A Case Study of Culinary Prejudice. *Gastronomica*, 1(2), 10–15. <https://doi.org/10.1525/gfc.2001.1.2.10> (Cited on p. 105).
- Leslau, W. (1991). *Comparative Dictionary of Ge'ez (Classical Ethiopic): Ge'ez-English, English-Ge'ez, with an Index of the Semitic Roots*. Harrassowitz. (Cited on pp. 94, 95).
- Leslau, W. (1996). *Concise Amharic Dictionary*. University of California Press. (Cited on p. 185).
- Leung, A. K. C., & Chen, M. (2019). The Itinerary of Hing/Awei/Asafetida across Eurasia, 400–1800. In P. H. Smith (Ed.), *Entangled Itineraries: Materials, Practices, and Knowledges across Eurasia* (pp. 141–164). University of Pittsburgh Press. <https://doi.org/10.2307/j.ctvh9vzcl.10> (Cited on pp. 9, 48, 49, 52, 53).
- Lev, E., & Amar, Z. (2008). *Practical Materia Medica of the Medieval Eastern Mediterranean According to the Cairo Genizah*. Brill. (Cited on pp. 10, 73, 96).
- Lewicka, P. B. (2011). *Food and Foodways of Medieval Cairenes: Aspects of Life in an Islamic Metropolis of the Eastern Mediterranean*. Brill. (Cited on p. 9).
- Lewis, C. T., & Short, C. (1879). *A Latin Dictionary: Founded on Andrews' Edition of Freund's Latin Dictionary, Revised, Enlarged, and in Great Part Rewritten*. Clarendon Press. <http://www.perseus.tufts.edu/hopper/search> (Cited on pp. 36, 37, 44, 61, 72, 73, 91, 92, 146).
- Lewis, R. E., Schaffner, P., Latta, J., & Logarbo, M. (Eds.). (1952–2001). *Middle English Dictionary* (2nd ed. Online Edition in Frances McSparran, et al. (Eds.). (2000-2018). Middle English Compendium. University of Michigan Library.). University of Michigan Press. Retrieved April 2, 2022, from <http://quod.lib.umich.edu/m/middle-english-dictionary/> (Cited on pp. 37, 61, 131).
- Liddell, H. G., & Scott, R. (1940). *A Greek-English Lexicon: Revised and Augmented Throughout* (H. S. Jones & R. McKenzie, Eds.; 9th ed.). Clarendon Press. <http://www.perseus.tufts.edu/hopper/search> (Original work published 1843). (Cited on pp. 44, 45, 61, 72, 73, 92)
- Liu, Z., Gao, M., Mai, Y., & Youwei, S. (1985). 漢語外來詞詞典 *Hanyu Wailaici Cidian* [A dictionary of loan words and hybrid words in Chinese]. 商務印書館香港分館 [The Commercial Press Hong Kong Branch]. (Cited on p. 26).
- Löw, I. (1881). *Aramäische Pflanzennamen [Aramaic Plant Names]*. Engelmann. <https://menadoc.bibliothek.uni-halle.de/ssg/content/pageview/591571> (Cited on pp. 51, 52, 64, 66, 73).
- Löw, I. (1924). *Die Flora der Juden [The Flora of the Jews]*. R. Löwit. <https://sammlungen.ub.uni-frankfurt.de/freimann/content/titleinfo/781127> (Cited on pp. 51, 52, 64, 66, 74).
- Ma, T.-L. (1978). The Authenticity of the "Nan-Fang Ts'ao-Mu Chuang" 南方草木狀. *T'oung Pao*, 64(4/5), 218–252 (Cited on p. 77).
- Mabberley, D. J. (2017). *Mabberley's Plant-Book: A Portable Dictionary of Plants, Their Classification and Uses* (4th ed.). Cambridge University Press. <https://doi.org/10.1017/9781316335581> (Cited on pp. 32, 43, 49, 56, 62, 67, 129, 145).
- Machuca, P., Pulido-Salas, M. T., & Trabanino, F. (2020). Past and Present of Allspice (*Pimenta Dioica*) in Mexico and Guatemala: From Traditional Management to Current Large-Scale Markets. *Revue d'ethnoécologie*, 18. <https://doi.org/10.4000/ethnoecologie.6261> (Cited on p. 34).

- MacKenzie, D. N. (1986). *A Concise Pahlavi Dictionary*. Oxford University Press. (Original work published 1971). (Cited on p. 132)
- Madagascar Spices Company. (2022, January 1). *Madagascar Pepper*. Retrieved March 8, 2022, from <https://www.madagascarspices.com/pepper.html> (Cited on p. 57).
- Mair, V. H., & Hoh, E. (2009). *The True History of Tea*. Thames & Hudson. (Cited on pp. 8, 180).
- Markham, G. (1614). *Cheap and Good Husbandry for the Well-Ordering of All Beasts and Fowls and for the General Cure of Their Diseases*. Printed by E.H. for George-Sawbridge. (Cited on p. 65).
- Mathew, B. (1977). Crocus Sativus and Its Allies (Iridaceae). *Plant Systematics and Evolution*, 128(1), 89–103 (Cited on p. 129).
- Matisoff, J. A. (2003). *Handbook of Proto-Tibeto-Burman: System and Philosophy of Sino-Tibetan Reconstruction*. University of California Press. (Cited on p. 159).  
OCLC: ocm53232585.
- McCormick, S. I. (n.d.). *History of Spices*. McCormick Science Institute. Retrieved May 7, 2022, from <https://www.mccormickscienceinstitute.com/resources/history-of-spices> (Cited on p. 34).
- McGregor, R. S. (1993). *The Oxford Hindi-English Dictionary*. Oxford University Press. (Cited on p. 111).
- McKinney, W. (2011). Pandas: A Foundational Python Library for Data Analysis and Statistics. *Python for high performance and scientific computing*, 14(9), 1–9 (Cited on p. 182).
- MDBG. (n.d.). *MDBG Chinese Dictionary*. <https://www.mdbg.net> (Cited on pp. 41, 54, 65, 66, 81, 82, 108, 111, 140).
- Meghwal, M., & Goswami, T. K. (2013). Piper Nigrum and Piperine: An Update. *Phytotherapy Research*, 27(8), 1121–1130. <https://doi.org/10.1002/ptr.4972> (Cited on p. 57)  
Note: Review.
- Merriam-Webster. (n.d.). *Merriam Webster's Unabridged Dictionary*. Retrieved November 12, 2021, from <https://unabridged.merriam-webster.com/> (Cited on p. xxv).
- Michel, J.-B., Shen, Y. K., Aiden, A. P., Veres, A., Gray, M. K., Team, G. B., Pickett, J. P., Hoiberg, D., Clancy, D., & Norvig, P. (2011). Quantitative Analysis of Culture Using Millions of Digitized Books. *Science*, 331(6014), 176–182 (Cited on p. 105).
- Miller, J. I. (1969). *The Spice Trade of the Roman Empire*, 29 B.C. To A.D. 641. Oxford University Press.  
<https://archive.org/details/spicetradeofromao0000mill> (Cited on p. 60).
- Milton, G. (1999). *Nathaniel's Nutmeg: Or, the True and Incredible Adventures of the Spice Trader Who Changed the Course of History*. Hodder & Stoughton Farrar, Straus and Giroux. (Cited on p. 7).
- Mirabal, S., Cadenas, A. M., Garcia-Bertrand, R., & Herrera, R. J. (2013). Ascertaining the Role of Taiwan as a Source for the Austronesian Expansion: Taiwan as Source for Austronesian Expansion. *American Journal of Physical Anthropology*, 150(4), 551–564. <https://doi.org/10.1002/ajpa.22226> (Cited on p. 151).

- Monier-Williams, M. (1899). *A Sanskrit-English Dictionary: Etymologically and Philologically Arranged with Special Reference to Cognate Indo-European Languages* (New Edition, Greatly Enlarged and Improved with the collaboration of Professor Ernst Leumann, Professor Carl Cappeller and other scholars). Clarendon Press. <https://www.sanskrit-lexicon.uni-koeln.de/> (Cited on pp. 61, 68, 71, 74–76).
- Morton, T. (2006). *The Poetics of Spice: Romantic Consumerism and the Exotic*. Cambridge University Press. (Cited on p. 8).
- Musallam, B. (1987–2011). AVICENNA x. Medicine and Biology. In *Encyclopaedia Iranica* (online, pp. 94–99, Vol. III/1). <http://www.iranicaonline.org/articles/avicenna-x> (Cited on p. 12).
- Musselman, L. J. (2012). *A Dictionary of Bible Plants*. Cambridge University Press. (Cited on p. 93).
- Nabhan, G. P. (2014). *Cumin, Camels, and Caravans: A Spice Odyssey*. University of California Press. (Cited on p. 8).
- Nair, K. P. (2020). *Geography of Black Pepper (Piper Nigrum): The “King” of Spices – Volume 1* (Vol. 1). Springer. <https://doi.org/10.1007/978-3-030-52865-2> (Cited on p. 57).
- Nair, K. P. (2011). *Agronomy and Economy of Black Pepper and Cardamom: The "King" and" Queen" of Spices*. Elsevier. <https://doi.org/10.1016/B978-0-12-391865-9.00001-3> (Cited on pp. 60, 74).
- Namdar, D., Gilboa, A., Neumann, R., Finkelstein, I., & Weiner, S. (2013). Cinnamaldehyde in Early Iron Age Phoenician Flasks Raises the Possibility of Levantine Trade With South East Asia. *Mediterranean Archaeology & Archaeometry*, 13(2) (Cited on p. 88).
- Netchev, S., & Macquire, K. (2022, April 14). *Movement of "Tea" & "Cha" Around the Globe*. World History Encyclopedia. Retrieved May 23, 2022, from <https://www.worldhistory.org/image/14112/movement-of-tea--cha-around-the-globe/> (Cited on p. 180).
- Newman, P. (2007). *A Hausa-English Dictionary*. Yale University Press. (Cited on p. 185).
- Niehoff, J. (1989–1990). [Review of Persische Lehnwörter Im Arabischen, by A. Asbaghi]. *Die Welt des Orients*, 20/21, 315–321 (Cited on p. 132).
- Nilius, B., & Appendino, G. (2013). Spices: The Savory and Beneficial Science of Pungency. *Reviews of Physiology, Biochemistry and Pharmacology*, 164, 1–76 (Cited on p. 12).
- Nişanyan, S. (2022, June 30). *Nişanyan Sözlük - Türkçe Etimolojik Sözlük* [Turkish Etymology Dictionary]. Sevan Nişanyan. Retrieved July 3, 2022, from <https://www.nisanyansozluk.com/> (Cited on pp. 75, 132).
- Noonan, B. J. (2019). *Non-Semitic Loanwords in the Hebrew Bible: A Lexicon of Language Contact*. Eisenbrauns. (Cited on p. 93).
- Norman, J. (2015). *Herbs & Spices* (2nd ed.). DK Publishing. (Original work published 2002). (Cited on p. 8)
- Nugent-Head, J. (2014). The First Materia Medica: The Shen Nong Ben Cao Jing. *Journal of Chinese Medicine*, (104), 24–28 (Cited on p. 12).
- O’Connell, J. (2016). *The Book of Spice: From Anise to Zedoary*. Pegasus Books. (Cited on pp. 8, 105, 106).

- Oketch-Rabah, H. A., Marles, R. J., & Brinckmann, J. A. (2018). Cinnamon and Cassia Nomenclature Confusion: A Challenge to the Applicability of Clinical Data. *Clinical Pharmacology & Therapeutics*, 104(3), 435–445. <https://doi.org/10.1002/cpt.1162> (Cited on pp. 18, 87).
- Opara, E. I., & Chohan, M. (2021). *Culinary Herbs and Spices: A Global Guide*. Royal Society of Chemistry. <https://doi.org/10.1039/9781839164446> (Cited on pp. 8, 33).
- Ortutay, G. (Ed.). (1977–1982). *Magyar Néprajzi Lexikon [Hungarian Ethnographic Lexicon]*. Akadémiai Kiadó. <http://mek.niif.hu/02100/02115/html/> (Cited on p. 172).
- OUP. (n.d.). *Oxford English Dictionary*. Oxford University Press. Retrieved March 24, 2022, from <https://www.oed.com/> (Cited on pp. 35–37, 39, 41, 44, 45, 47, 49–51, 54, 61, 64, 66, 72, 73, 78, 80, 82, 91, 92, 100, 102, 107, 108, 110–116, 118–122, 127, 131, 134, 136, 137, 139, 140, 142, 143, 146, 147, 159, 193).
- Pali Text Society (Ed.). (1921–1925). *The Pali Text Society's Pali-English Dictionary*. Chipstead. <https://dsal.uchicago.edu/dictionaries/pali/> (Cited on pp. 75, 76).
- Parkinson, J. (1640). *Theatrum Botanicum: The Theater of Plantes, or An Universal and Compleate Herball*. Tho. Cotes. (Cited on p. 105).
- Parthasarathy, V. A., Chempakam, B., & Zachariah, T. J. (Eds.). (2008). *Chemistry of Spices*. CABI. (Cited on pp. 11, 33, 60).
- Pearlstine, E. V. (2022). *Scent: A Natural History of Fragrance*. Yale University Press. <https://doi.org/10.2307/j.ctv2jn91s8> (Cited on p. 99).
- Pearson, M. N. (Ed.). (1996). *Spices in the Indian Ocean World*. Variorum. (Cited on p. 10).
- Pepper. (2022, June 1). In *Wiktionary*. Retrieved July 21, 2022, from <https://en.wiktionary.org/w/index.php?title=pepper&oldid=67220820> (Cited on p. 187).  
Page Version ID: 67220820.
- Peter, K. V. (Ed.). (2006). *Handbook of Herbs and Spices, Volume 3* (1st ed.). Woodhead Publishing Limited. <https://www.sciencedirect.com/book/9781845690175/handbook-of-herbs-and-spices> (Cited on p. 22).
- Peter, K. V. (Ed.). (2012). *Handbook of Herbs and Spices* (2nd ed.). Woodhead Publishing Limited. <http://www.sciencedirect.com/science/book/9780857090409> (Cited on pp. 11, 14, 21, 22, 32, 39, 42–44, 51, 57, 87, 122, 129).
- Pliny the Elder. (1855). *Naturalis Historia* [The Natural History of Pliny] (J. Bostock & H. T. Riley, Trans.). Henry G. Bohn. <https://www.perseus.tufts.edu/hopper/text?doc=Plin.+Nat.+toc> (Original work published 77). (Cited on pp. 25, 43, 105)
- Plotly Technologies Inc. (2015). *Collaborative Data Science*. <https://plot.ly> (Cited on p. 182).
- PolyU, S. o. N. (n.d.). *Chinese Herbal Medicine Database*. Retrieved July 6, 2022, from <https://herbaltcm.sn.polyu.edu.hk/herbal/> (Cited on p. 133).
- POWO. (2022a). *Pimenta Dioica (L.) Merr.* Plants of the World Online: Facilitated by the Royal Botanic Gardens, Kew. Retrieved March 30, 2022, from <http://www.plantsoftheworldonline.org/> (Cited on p. 32).
- POWO. (2022b). *Plants of the World Online* (Botanical Database). Facilitated by the Royal Botanic Gardens, Kew. <http://www.plantsoftheworldonline.org/> (Cited on p. 152).

- Prance, G., & Nesbitt, M. (Eds.). (2005). *The Cultural History of Plants*. Routledge. (Cited on pp. 68, 104, 105).
- Prescott, J., & Stevenson, R. J. (1995). Pungency in Food Perception and Preference. *Food Reviews International*, 11(4), 665–698 (Cited on p. 11).
- Putzel, D. (2017). *The Spice of Life: Black Cardamom Cultivation, Trade Networks, and Livelihoods in Yunnan, China* [Master's thesis, McGill University]. (Cited on p. 70).
- Quattrocchi, U. (Ed.). (2014). *CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology*. CRC Press. <http://www.crcnetbase.com/isbn/9781482250640> (Cited on p. 58).
- Rafinesque, C. S. (1836). *The American Nations: Or, Outlines of Their General History, Ancient and Modern: Including the Whole History of the Earth and Mankind in the Western Hemisphere; the Philosophy of American History; the Annals, Traditions, Civilization, Languages, &c., of All the American Nations, Tribes, Empires, and States* (Vol. 1). C. S. Rafinesque. (Cited on p. 35).
- Raghavan, S. (2007). *Handbook of Spices, Seasonings, and Flavorings* (2nd ed.). CRC Press. (Cited on p. 72).
- Rain, P. (2004). *Vanilla: The Cultural History of the World's Most Popular Flavor and Fragrance*. J.P. Tarcher/Penguin. (Cited on p. 8).
- Rao, P. V., & Gan, S. H. (2014). Cinnamon: A Multifaceted Medicinal Plant. *Evidence-Based Complementary and Alternative Medicine*, 2014, 1–12. <https://doi.org/10.1155/2014/642942> (Cited on p. 86).
- Ravindran, P. N. (Ed.). (2000). *Black Pepper: Piper Nigrum*. Harwood Academic Publishers. Retrieved February 22, 2022, from <http://public.ebookcentral.proquest.com/choice/publicfullrecord.aspx?p=181553> (Cited on pp. 57–60).
- Ravindran, P. N. (Ed.). (2017a). *The Encyclopedia of Herbs & Spices*. CABI. <https://search-credoreference-com.ezproxy.lb.polyu.edu.hk/content/title/cabiherbs?tab=contents> (Cited on pp. 11, 22).
- Ravindran, P. N. (Ed.). (2017b). *Piper Nigrum*. In *The Encyclopedia of Herbs & Spices*. CABI. <https://search-credoreference-com.ezproxy.lb.polyu.edu.hk/content/title/cabiherbs?tab=contents> (Cited on pp. 57–59).
- Ravindran, P. N., & Madhusoodanan, K. J. (Eds.). (2002). *Cardamom: The Genus Elettaria*. Taylor & Francis. (Cited on pp. 67–69, 71, 72).
- Ravindran, P. N., & Nirmal Babu, K. (Eds.). (2005). *Ginger: The Genus Zingiber*. CRC Press. (Cited on p. 151).
- Ravindran, P. N., Nirmal Babu, K., & Shylaja, M. (Eds.). (2004). *Cinnamon and Cassia: The Genus Cinnamomum* (Vol. 36). CRC Press. (Cited on pp. 83, 85, 87, 97).
- Rayor, D. J., & Lardinois, A. (2014). *Sappho: A New Translation of the Complete Works*. Cambridge University Press. [www.cambridge.org/9781107023598](http://www.cambridge.org/9781107023598) (Cited on p. 90).
- Redford, D. B. (Ed.). (2001). *The Oxford Encyclopedia of Ancient Egypt*. Oxford University Press. <https://doi.org/10.1093/acref/9780195102345.001.0001> (Cited on p. 45).

- Reed, C. E. (1995). "Youyang Zazu": *Miscellaneous Morsels From Youyang* [Doctoral dissertation, University of Washington]. Ann Arbor. <http://ezproxy.lb.polyu.edu.hk/login?url=https://www.proquest.com/dissertations-theses/youyang-zazu-miscellaneous-morsels/docview/304240545/se-2?accountid=16210> (Cited on p. 123).
- Reid, A. (1988). *Southeast Asia in the Age of Commerce, 1450–1680: Volume One, The Lands Below the Winds*. Yale University Press. (Cited on p. 10).
- Riffle, R. L. (1998). *The Tropical Look: An Encyclopedia of Dramatic Landscape Plants*. Timber Press. <https://archive.org/details/tropicallookency00oriff/page/278/mode/2up?q=allspice> (Cited on p. 32).
- Roberts, E. (1837). *Embassy to the Eastern Courts of Cochinchina, Siam, and Muscat: In the U.S. Sloop-of-War Peacock, During the Years 1832-3-4*. Harper & Brothers. <https://www.wdl.org/en/item/7317/> (Cited on p. 74).
- Rosół, R. (2018). Early Semitic Loanwords in Greek. In Ł. Niesiołowski-Spanò & M. Węcowski (Eds.), *Change, Continuity, and Connectivity* (1st ed., pp. 334–344). Harrassowitz Verlag. <https://doi.org/10.2307/j.ctvckq4zg.21> (Cited on pp. 91, 92).
- Ross, A. S. C. (1952). *Ginger, a Loan-Word Study*. Basil Blackwell. (Cited on pp. 9, 119).
- Rossabi, M. (Ed.). (2013). *Eurasian Influences on Yuan China*. ISEAS.
- Roth, M. T., Biggs, R. D., Brinkman, J. A., Civil, M., Farber, W., Reiner, E., & Stolper, M. W. (Eds.). (2004). *The Assyrian Dictionary of the Oriental Institute of the University of Chicago* (4th ed.). The Oriental Institute. <https://oi.uchicago.edu/research/publications/assyrian-dictionary-oriental-institute-university-chicago-cad> (Original work published 1968). (Cited on pp. 73, 75, 132, 183)
- Sajadi, M. M., Mansouri, D., & Sajadi, M.-R. M. (2009). Ibn Sina and the Clinical Trial. *Annals of Internal Medicine*, 150(9), 640–643 (Cited on p. 12).
- Salima, I. (2005). Diet. In D. B. Redford (Ed.), *The Oxford Encyclopedia of Ancient Egypt* (pp. 390–395, Vols. 3). Oxford University Press. <https://doi.org/10.1093/acref/9780195102345.001.0001> (Original work published 2001). (Cited on p. 60)
- Schafer, E. H. (1985). *The Golden Peaches of Samarkand: A Study of Tang Exotics*. University of California Press. (Cited on pp. 19, 65, 122, 123, 133, 142).
- Schivelbusch, W. (1992). *Tastes of Paradise: A Social History of Spices, Stimulants, and Intoxicants*. Pantheon Books. <https://archive.org/details/tastesofparadiseooschi> (mode/2up) (Cited on p. 8).
- Schuessler, A. (2007). *ABC Etymological Dictionary of Old Chinese*. University of Hawai'i Press. (Cited on pp. 26, 56).
- Schwarz, H. G. (1992). *An Uyghur-English Dictionary*. Center for East Asian Studies, Western Washington University. (Cited on p. 111).
- Seitz, D. (1893). A Celestial Farm on Long Island [magazine]. *Frank Leslie's Popular Monthly*, 35, 489–496. <https://books.google.com.hk/books?id=r0rQAAAAMAAJ&pg=PA491&dq=%22chinese+parsley%22&hl=en&sa=X&ved=2ahUKEwixjOTI-cf2AhUryIsBHZaqDfUQ6AF6BAgHEAI#v=onepage&q=%22chinese%20parsley%22&f=false> (Cited on p. 106).

- Shaffer, M. (2013). *Pepper: A History of the World's Most Influential Spice*. Thomas Dunne Books. (Cited on pp. 8, 57, 61).
- Sharifi, G. (2010). Etymology, History and Application of Saffron (*Crocus Sativus L.*) in Ancient Iran. *Acta Horticulturae*, (850), 309–314. <https://doi.org/10.17660/ActaHortic.2010.850.53> (Cited on p. 132).
- Sherman, P. W., & Billing, J. (1999). Darwinian Gastronomy: Why We Use Spices. *BioScience*, 49(6), 453–463. <https://doi.org/10.2307/1313553> (Cited on p. 11).
- Sheth, H. D. T. (1923–1928). *Paia-Sadda-Mahannavo: A Comprehensive Prakrit Hindi Dictionary, with Sanskrit Equivalents, Quotations and Complete References* (1st ed.). [Published by the author]. <https://dsal.uchicago.edu/dictionaries/sheth/> (Cited on p. 61).
- Sidebotham, S. E. (2011). *Berenike and the Ancient Maritime Spice Route*. University of California Press. (Cited on pp. 10, 60).
- Simons, C., & Carstens, E. (2008). Oral Chemesthesia and Taste. In *The Senses: A Comprehensive Reference* (pp. 345–369). Elsevier. <https://doi.org/10.1016/B978-012370880-9.00090-6> (Cited on p. 192).
- Small, E. (1996). Confusion of Common Names for Toxic and Edible "Star Anise" (*Illicium*) Species. *Economic Botany*, 50(3), 337–339 (Cited on p. 18).
- Smith, R. D. (1980). Avicenna and the Canon of Medicine: A Millennial Tribute. *Western Journal of Medicine*, 133(4), 367–370 (Cited on p. 12).
- Snoj, M. (1997). *Slovenski Etimološki Slovar [Slovenian Etymological Dictionary]*. Založba Mladinska Knjiga. (Cited on p. 184).
- Sokoloff, M. (2002). *A Dictionary of Jewish Babylonian Aramaic of the Talmudic and Geonic Periods*. Bar Ilan University Press ; Johns Hopkins University Press. (Cited on pp. 64, 66).
- Sonnad, N. (2018, January 11). *Tea If by Sea, Cha If by Land: Why the World Only Has Two Words for Tea*. Quartz. Retrieved May 23, 2022, from <https://qz.com/1176962/map-how-the-word-tea-spread-over-land-and-sea-to-conquer-the-world/> (Cited on p. 180).
- Spence, C. (2018). Why Is Piquant/Spicy Food so Popular? *International Journal of Gastronomy and Food Science*, 12, 16–21. <https://doi.org/10.1016/j.ijgfs.2018.04.002> (Cited on pp. 11, 38).
- Spengler, R. N. (2019a). *Fruit From the Sands: The Silk Road Origins of the Foods We Eat*. University of California Press. (Cited on p. 7).
- Spengler, R. N. (2019b). Spices, Oils, and Tea. In *Fruit from the Sands* (1st ed., pp. 247–270). University of California Press. (Cited on p. 10).
- Srinivasan, K. (2007). Black Pepper and Its Pungent Principle-Piperine: A Review of Diverse Physiological Effects. *Critical Reviews in Food Science and Nutrition*, 47(8), 735–748. <https://doi.org/10.1080/10408390601062054> (Cited on p. 57).
- Steingass, F. J. (1892). *A Comprehensive Persian-English Dictionary: Including the Arabic Words and Phrases to Be Met With in Persian Literature*. Routledge & K. Paul. <https://dsal.uchicago.edu/dictionaries/steingass/> (Cited on pp. 49, 52, 74, 111, 139, 178).
- Stubbe, H. (1662). *The Indian Nectar: Or a Discourse Concerning Chocolata*. Andrew Crook at the Sign of the Green Dragon. (Cited on p. 145).

- Sturgeon, D. (2021). Chinese Text Project: A Dynamic Digital Library of Premodern Chinese. *Digital Scholarship in the Humanities*, 36(S1), 101–112. <https://doi.org/10.1093/llc/fqzo46> (Cited on p. 27).
- Sturgeon, D. (n.d.). *Chinese Text Project*. Retrieved August 7, 2022, from <https://ctext.org/> (Cited on p. 27).
- Sulaiman, E. (2020). Uyghur Loanwords in a Historical and Socio-Cultural Perspective. *Uluslararası Uygur Araştırmaları Dergisi*. <https://doi.org/10.46400/uygur.712733> (Cited on p. 11).
- Sultan Qaboos University. (1985). *Sultan Qaboos Encyclopedia of Arab Names*. <http://arabiclexicon.hawramani.com/sultan-qaboos-encyclopedia-of-arab-names/> (Cited on p. 56).
- Szemerényi, O. (1971). [Review of the Book Dictionnaire Étymologique de La Langue Grecque - Histoire Des Mots, by Pierre Chantraine]. *Gnomon*, 43(7), 641–675 (Cited on p. 106).
- Tavernier, J. B. (1678). *The Six Voyages of John Baptista Tavernier: A Noble Man of France Now Living, through Turky into Persia and the East-Indies* (J. Phillips, Trans.). Printed for R.L. and M.P. <https://archive.org/details/sixvoyagesJohnBooTave> (Cited on p. 94).
- Tewksbury, J. J., Reagan, K. M., Machnicki, N. J., Carlo, T. A., Haak, D. C., Penalosa, A. L. C., & Levey, D. J. (2008). Evolutionary Ecology of Pungency in Wild Chilies. *Proceedings of the National Academy of Sciences*, 105(33), 11808–11811. <https://doi.org/10.1073/pnas.0802691105> (Cited on p. 192).
- Theophrastus. (1916). *Enquiry Into Plants* (A. Hort, Trans.). W. Heinemann; G.P. Putnam's Sons. (Cited on pp. 68, 90).
- TLFi. (2012). *Trésor de La Langue Française Informatisé* [Digitized Treasury of the French Language]. Analyse et traitement informatique de la langue française (ATILF). Retrieved June 22, 2022, from <https://www.cnrtl.fr/etymologie/> (Cited on pp. 35, 44, 64, 72, 91, 131, 139).
- Törnwall, O., Silventoinen, K., Kaprio, J., & Tuorila, H. (2012). Why Do Some Like It Hot? Genetic and Environmental Contributions to the Pleasantness of Oral Pungency. *Physiology & Behavior*, 107(3), 381–389. <https://doi.org/10.1016/j.physbeh.2012.09.010> (Cited on p. 38).
- Toussaint-Samat, M. (2009). *A History of Food* (2nd ed.). Wiley-Blackwell. (Cited on pp. 9, 13, 189).
- Tremblay, X. (2005). Irano-Tocharica et Tocharo-Iranica. *Bulletin of the School of Oriental and African Studies*, 68(3), 421–449. <https://doi.org/10.1017/S0041977X05000248> (Cited on pp. 51, 52).
- Trenckner, V. (1879). *Pali Miscellany*. Liams and Norgate. (Cited on p. 76).
- Turner, J. (2004). *Spice: The History of a Temptation*. Vintage Books. (Cited on pp. 4, 8, 11, 34, 60, 61).
- Turner, R. L., Sir. (1962–1966). *A Comparative Dictionary of the Indo-Aryan Languages*. Oxford University Press. <https://dsal.uchicago.edu/dictionaries/soas/> (Cited on p. 50).
- Ulanowska, M., & Olas, B. (2021). Biological Properties and Prospects for the Application of Eugenol—A Review. *International Journal of Molecular Sciences*, 22(7), 3671. <https://doi.org/10.3390/ijms22073671> (Cited on p. 33).

- Ulbricht, C., Seamon, E., Windsor, R. C., Armbruester, N., Bryan, J. K., Costa, D., Giese, N., Gruenwald, J., Iovin, R., Isaac, R., Grimes Serrano, J. M., Tanguay-Colucci, S., Weissner, W., Yoon, H., & Zhang, J. (2011). An Evidence-Based Systematic Review of Cinnamon (*Cinnamomum Spp.*) by the Natural Standard Research Collaboration. *Journal of Dietary Supplements*, 8(4), 378–454. <https://doi.org/10.3109/19390211.2011.627783> (Cited on pp. 87, 88).
- Ullmann, M. (1997). *Zur Geschichte des Wortes barīd "Post"*. Bayerischen Akademie der Wissenschaften. (Cited on p. 132).
- Unschuld, P. U. (2022, February 16). *On The First English Translation of the Classic Chinese Encyclopedia, Ben Cao Gang Mu*. UC Press Blog. Retrieved August 5, 2022, from <https://www.ucpress.edu/blog/58295/on-the-first-english-translation-of-the-classic-chinese-encyclopedia-ben-cao-gang-mu/> (Cited on p. 12).
- van der Veen, M. (2018). Archaeobotany: The Archeology of Human-plant Interactions. In W. Scheidel (Ed.), *The Science of Roman History* (pp. 53–94). Princeton University Press. <https://doi.org/10.2307/j.ctvc772w1.9> (Cited on p. 10).
- van der Veen, M., & Morales, J. (2015). The Roman and Islamic Spice Trade: New Archaeological Evidence. *Journal of Ethnopharmacology*, 167, 54–63. <https://doi.org/10.1016/j.jep.2014.09.036> (Cited on p. 10).
- van Wyk, B.-E. (2014). *Culinary Herbs and Spices of the World*. University of Chicago Press, joint publication with the Royal Botanic Gardens, Kew. <https://doi.org/10.7208/chicago/9780226091839.001.0001> (Cited on pp. 4, 8, 21, 31, 32, 38, 39, 42–44, 48, 49, 51, 59, 64, 67–72, 80, 85, 86, 94, 102, 107, 110, 113, 115, 118, 120, 126, 129, 131, 132, 136, 137, 139, 142, 144–146).
- Wang, G. (1958). The Nanhai Trade: A Study of the Early History of Chinese Trade in the South China Sea. *Journal of the Malayan Branch of the Royal Asiatic Society*, 31/2(182), 1–135 (Cited on p. 185).
- Wang, Q. J., Keller, S., & Spence, C. (2017). Sounds Spicy: Enhancing the Evaluation of Piquancy by Means of a Customised Crossmodally Congruent Soundtrack. *Food Quality and Preference*, 58, 1–9. <https://doi.org/10.1016/j.foodqual.2016.12.014> (Cited on p. 14).
- Wehr, H. (1976). *A Dictionary of Modern Written Arabic* (J. M. Cowan, Ed.; 3rd ed.). Spoken Language Services, Inc. (Cited on pp. 45–47, 52, 54, 65, 66, 74, 76, 78, 80, 82, 94–96, 98, 100, 102, 107, 108, 110, 111, 115, 116, 120, 121, 127, 131–134, 143).
- Welles, C. B. (1934). *Royal Correspondence in the Hellenistic Period: A Study in Greek Epigraphy*. Yale University Press. <http://catalog.hathitrust.org/Record/001248055%20http://hdl.handle.net/2027/mdp.39015010575713> (Cited on p. 93).
- Wernick, R. (2014). *Pepper: A History*. New Word City, Inc. Retrieved March 28, 2022, from <https://www.overdrive.com/search?q=DC2DC794-E09B-420C-943E-A262210C9498> (Cited on p. 57).
- Wheatley, P. (1961). *The Golden Khersonese: Studies in the Historical Geography of the Malay Peninsula Before A.D. 1500*. University of Malaya Press. (Cited on p. 76).

- Wijesekera, R., & Chichester, C. O. (1978). The Chemistry and Technology of Cinnamon. *CRC Critical Reviews in Food Science and Nutrition*, 10(1), 1–30. <https://doi.org/10.1080/10408397809527243> (Cited on pp. 18, 86).
- Wikipedia, E. O. T. (n.d.). Wikipedia: The Free Encyclopedia. [www.wikipedia.org](http://www.wikipedia.org) (Cited on pp. 46, 64, 77, 80, 98, 107, 136, 139, 142, 146).
- Wiktionary. (n.d.). Cinnamon. In Wiktionary. Retrieved May 26, 2022, from <https://en.wiktionary.org/w/index.php?title=cinnamon&oldid=66914125> (Cited on p. 181).  
note: Page Version ID: 66914125.
- Wiktionary, E. O. T. (n.d.). Wiktionary: The Free Dictionary. [www.wiktionary.org](http://www.wiktionary.org) (Cited on p. 40).
- Wilson, C. (2005). Wedding Cake: A Slice of History. *Gastronomica*, 5(2), 69–72. <https://doi.org/10.1525/gfc.2005.5.2.69> (Cited on p. 44).
- Wood, C., Siebert, T. E., Parker, M., Capone, D. L., Elsey, G. M., Pollnitz, A. P., Eggers, M., Meier, M., Vössing, T., Widder, S., Krammer, G., Sefton, M. A., & Herderich, M. J. (2008). From Wine to Pepper: Rotundone, an Obscure Sesquiterpene, Is a Potent Spicy Aroma Compound. *Journal of Agricultural and Food Chemistry*, 56(10), 3738–3744. <https://doi.org/10.1021/jf800183k> (Cited on p. 60).
- Wood, S. (Ed.). (2000–2022). *Online Nahuatl Dictionary*. Wired Humanities Projects, College of Education, University of Oregon. <https://nahualt.uoregon.edu/> (Cited on p. 34).
- Wright, C. A. (2007). The Medieval Spice Trade and the Diffusion of the Chile. *Gastronomica*, 7(2), 35–43. <https://doi.org/10.1525/gfc.2007.7.2.35> (Cited on p. 9).
- Wu, J.-N. (2005). *An Illustrated Chinese Materia Medica*. Oxford University Press. (Cited on p. 12).
- Wu, Y., Schuster, M., Chen, Z., Le, Q. V., Norouzi, M., Macherey, W., Krikun, M., Cao, Y., Gao, Q., Macherey, K., Klingner, J., Shah, A., Johnson, M., Liu, X., Kaiser, L., Gouws, S., Kato, Y., Kudo, T., Kazawa, H., ... Dean, J. (2016, October 8). Google’s Neural Machine Translation System: Bridging the Gap between Human and Machine Translation. <https://doi.org/10.48550/arXiv.1609.08144> (Cited on p. 181).
- Yang, S.-z. (1998). *The Divine Farmer’s Materia Medica: A Translation of the Shen Nong Ben Cao Jing*. Blue Poppy Press, Inc. (Original work published ca. 206 B.C.E.–220). (Cited on p. 12)
- Yao, Y., & Su, Q. (2019). Chinese, Food and Menus. In C.-R. Huang, Z. Jing-Schmidt, & B. Meister-ernst (Eds.), *The Routledge Handbook of Chinese Applied Linguistics* (pp. 81–91). Routledge. (Cited on p. 13).
- Yashin, A., Yashin, Y., Xia, X., & Nemzer, B. (2017). Antioxidant Activity of Spices and Their Impact on Human Health: A Review. *Antioxidants*, 6(70), 1–18. <https://doi.org/10.3390/antiox6030070> (Cited on p. 12).
- Yule, H., Burnell, A., & Crooke, W. (1903). *Hobson-Jobson: A Glossary of Colloquial Anglo-Indian Words and Phrases, and of Kindred Terms, Etymological, Historical, Geographical and Discursive*. J. Murray. <https://www.gutenberg.org/files/58529/58529-h/58529-h.htm> (Cited on p. 50).
- Zaicz, G. (2006). *Etimológiai Szótár: Magyar Szavak és Toldalékok Erede* [Etymological Dictionary: The Origin of Hungarian Words and Affixes]. Tinta Könyvkiadó. (Cited on pp. 152, 186, 189).

- Zaouali, L. (2007). *Medieval Cuisine of the Islamic World: A Concise History With 174 Recipes* (M. B. DeBevoise, Trans.). University of California Press. (Cited on p. 9).
- Zhang, Z., & Unschuld, P. U. (Eds.). (2015). *Dictionary of the Ben Cao Gang Mu Volume 1: Chinese Historical Illness Terminology*. University of California Press. (Cited on pp. 77, 97, 99).
- Zhao, Q., Huang, C.-R., & Ahrens, K. (2019). Directionality of Linguistic Synesthesia in Mandarin: A Corpus-based Study. *Lingua*, 232, 102744. <https://doi.org/10.1016/j.lingua.2019.102744> (Cited on p. 13).
- Zhao, Z., Guo, P., & Brand, E. (2018). A Concise Classification of Bencao (Materia Medica). *Chinese Medicine*, 13(18). <https://doi.org/10.1186/s13020-018-0176-y> (Cited on pp. xxv, 12).
- Zhong, Y., & Huang, C.-R. (2020). Sweetness or Mouthfeel: A Corpus-Based Study of the Conceptualization of Taste. *언어연구 [Language Study]*, 37(3), 359–387. <https://doi.org/10.17250/khisli.37.3.202012.001> (Cited on p. 14).
- Zimmern, H. (1915). *Akkadische Fremdwörter Als Beweis Für Babylonischen Kultureinfluss [Akkadian Foreign Words as Evidence of Babylonian Cultural Influence]* [Doctoral dissertation]. Lipsiae [Liepzig]. (Cited on p. 74).
- Zohary, D., Hopf, M., & Weiss, E. (2012). *Domestication of Plants in the Old World: The Origin and Spread of Cultivated Plants in West Asia, Europe and the Nile Valley* (4th ed.). Oxford University Press. (Original work published 1988). (Cited on pp. 10, 104)
- Zohary, M. (1982). *Plants of the Bible: A Complete Handbook*. Cambridge University Press. (Cited on p. 88).