The worship of Athena may be connected with the statement of Athenodorus (the famous philosopher of Tarsus) that the ancient name of the city was Parthenia (*Fr. Uist. Gr.,* iii. 487); Abydenus in Eusb., *Chron.,* p. 35, ed. Schöne) ascribes the foundation of her temple with its brazen columns and of the city itself to Sennacherib. Thus with the Baal of Tyre there was worshipped an unmarried goddess, as in so many shrines of Syria and Asia Minor. Dio Chr., n. 2, speaks also of Titans as lords of the city. The reference is to Japetus (Japhet?), grandfather of Cydnus (Athenodorus, *ut sup.).*

TARTAGLIA, Niccolò (c. 1500-1557), a self-taught mathematician, was born at Brescia about 1500. His father, Michele Fontana, was a postal messenger between Brescia and the neighbouring towns, who, dying in 1506, left two sons and a daughter to the care of their penniless mother. Niccolò’s childhood was accordingly passed under the stress of dire poverty, and was marked by a cruel misfortune. During the sack of Brescia in 1512 he was, in the cathedral where he had vainly sought a refuge, horribly mutilated by some infuriated French soldiers. His skull was laid open in three places, his palate cloven, both jawbones fractured. Yet he recovered with no further assistance than his mother’s patient care. He, however, long continued to stammer in his speech, whence the nickname, adopted by himself, of “Tartaglia.” His education remains a mystery. Save for the barest rudi­ments of reading and writing, he tells us that he had no master; yet we find him at Verona in 1521 an esteemed teacher of mathematics. In 1534 he transferred his residence to Venice, and was there met by Antonio del Fiore with a challenge to one of the intellectual duels then customary. Del Fiore relied on his possession of an undivulged formula by Scipione del Ferro for the solution of a particular case of cubic equations. But Tartaglia had attained in 1530 a similar result, which he now, in Feb­ruary 1535, greatly extended. His consequent triumph over his adversary gave him a high reputation, and his house became the resort of the learned of all grades and nations. The mystery in which he chose to shroud his method of dealing with cubic equations promised him a highly effective weapon in future contests, as well as leisure to perfect, before publishing, the coveted rules. But in 1539 Cardan enticed him to Milan, and there, by unremitting solicitations, procured from him the rude verses in which he had enshrined his discovery (see Algebra, vol. i. p. 513). The Milanese physician’s breach of his oath of secrecy gave rise to a bitter and lifelong quarrel, the most conspicuous incident in which was a public disputation at Milan, August 10, 1548, at which Cardan shrank from appearing. In 1548 Tartaglia ac­cepted a situation as professor of Euclid at Brescia, but returned to Venice at the end of eighteen months. He died at Venice December 13, 1557. Acrid and emulous in disposition, he incurred abundant enmities; yet his honesty, uprightness, and the morality of his life remain unimpeached. He was keen-witted, diligent, and ingenious, and by his discoveries in the solution of equations helped to initiate the rapid progress of modern mathematics.

Tartaglia’s first printed work, entitled *Nova Scientia* (Venice, .1537), dealt with the theory and practice of gunnery, to which his attention had been drawn in 1531 by the question of a bombardier at Verona as to the elevation giving the greatest range. He easily found it to be 45o (true only *in vacuo),* but failed to demonstrate the correctness of his intuition. Indeed, he never shook off the erroneous ideas of his time regarding the paths of projectiles, further than to see that no part of them could be a straight line. He nevertheless inaugurated the scientific treatment of the subject, and his propositions reappeared in most ballistical treatises down to Blondel’s in 1683. The publication of the *Nova Scientia* was determined by the menacing attitude of Soliman II. Unless in the interests of Christendom, Tartaglia regarded it as a crime to promote arts of destruction. Inquiries rendered lawful by necessity were, however, resumed in his *Quesiti et Invenzioni Diverse,* a col­lection of the author's replies to questions addressed to him by persons of the most varied conditions, published in 1546, with a dedication to Henry VIII. of England. Problems in artillery occupy two out of nine books ; the sixth treats of fortification ; the ninth gives several examples of the solution of equations of the third degree. His last years were full of activity. He published in 1551 *Regola Generale per sollevare ogni affondata Nave, intitolata la Travagliata Invenzione* (an allusion to his personal troubles at Brescia), setting forth a method for raising sunken ships, and describing the diving-bell, then little known in western Europe. He pursued the subject in *Ragionamenti sopra la Travagliata Invenzione* (May 1551), adding a table of specific gravities. Of his largest work, entitled *General Trattato di Numeri e Misure,* two parts appeared at Venice in 1556, the remaining four post­humously in 1560. This is a comprehensive mathematical treatise, including arithmetic, geometry, mensuration, and algebra as far as quadratic equations. He designed to embody the results of his original investigations in a separate form ; but his *Algebra Nova* remained unwritten. He published the first Italian translation of Euclid (1543) and the earliest version from the Greek of some of the principal works of Archimedes (1543). These included the tract *De Insidentibus Aquæ,* of which his Latin now holds the place of the lost Greek text. An Italian version of it is appended to his *Ragionamenti.* Tartaglia was the first Italian writer on forti­fication, and claimed the invention of the gunner’s quadrant.

Tartaglia’s own account of his early life is contained in his *Quesiti,* lib. vi. p. 74. See also Bittanti’s *Discorso di Niccolò Tartaglia,* Brescia, 1871; Buoncom­pagni, *Intorno ad un Testamento inedito di N. Tartaglia,* Milan, 1881 ; Libri, *Uist. des Sciences Mathématiques,* t. iii. p. 149; Montucla, *Hist. des Math.,* vol. i. p. 567 ; Marie, *Hist. des Sciences,* t. ii.p. 242 ; Hankel, *Zur Gesch. d. Math.,* 1874, p. 360; Rossi, *Elogi di Bresciani Illustri,* p. 386. Tartaglia’s writings on gunnery were translated into English by Lucar in 1588, and into French by Rieffel in 1845. Thos. Sainsbury published (London, 1564) an English version of his *Travagliata Invenzione,* and a selection from his writings appeared at Venice in 1606 with the title *Opere del Famosissimo Niccolò Tartaglia,* 1 vol. 8vo.

TARTAN is a worsted cloth woven with alternate stripes or bands of coloured warp and weft, so as to form a chequered pattern in which the colours alternate in “ sets ” of definite width and sequence. The weaving of particoloured and striped cloth cannot be claimed as peculiar to any special race or country, for indeed such checks are the simplest ornamental form into which dyed yarns can be combined in the loom. But the term tartan is specially applied to the variegated cloth used for the principal portions of the distinctive costume of the High­landers of Scotland. For this costume, and the tartan of which it is composed, great antiquity is claimed, and it is asserted that the numerous clans into which the Highland population were divided had each from time to time a special tartan by which it was distinguished. After the rebellion of 1745 various Acts of Parliament were passed for disarming the Scottish Highlanders and for prohibiting the use of the Highland dress in Scotland, under severe penalties. These Acts remained nominally in force till 1782, when they were formally repealed, and since that time clan tartan has, with varying fluctuations of fashion, been a highly popular article of dress, by no means con­fined in its use to Scotland alone; and many new and imaginary “sets’’have been invented by manufacturers, with the result of introducing confusion in the heraldry of tartans, and of throwing doubt on the reality of the distinctive “sets” which at one time undoubtedly were more or less recognized as the badge of various clans. The manufacture has long been carried on at Bannockburn, in the neighbourhood of Stirling, and it still continues to be a feature of the local industries there.

Undoubtedly the term tartan was known, and the material was woven, “of one or two colours for the poor and more varied for the rich,” as early as the middle of the 15th century. In the accounts of John, bishop of Glasgow, treasurer to King James III. in 1471, there occurs, with other mention of the material, the following:—“Ane eine and ane halve of blue Tartane to lyne his gowne of cloth of Gold.” It is here obvious that the term is not restricted to particoloured chequered textures.@@1 In 1538 accounts were incurred for a Highland dress for King James V. on the occasion of a hunting excursion in the Highlands, in which there are charges for “variant cullorit velvet,” for “ane schort Heland coit,” and for “Heland tartane to be hose to the kinge’s grace.” Bishop Lesley, in his *De Origine, Moribus, et Rebus Gestis Scotorum,* published in 1578, says of the ancient and still-used dress of the Highlanders and islanders, “all, both noble and common people, wore mantles of one sort (except that the nobles preferred those of several colours).” George Buchanan, in his *Rerum Scoticarum*

@@@1 Neither so is it in the French *tiretaine* or in the Spanish *tiritaña.*