Left fatherless at an early age, he was carefully educated under the care of his uncle, a Camaldolese monk, who in 1627 sent him to Rome to profit by the scientific teachings of Benedetto Castelli. The perusal of Galileo’s *Dialoghi delle Nuove Scienze* (1638) inspired his fertile mind with many fresh developments of the new mechanical principles there set forth, which he embodied in a treatise *De Motu* (printed amongst his *Opera Geometrica,* 1644). Its communication by Castelli to Galileo in 1641 led to the adoption as a disciple by the Florentine sage of one who seemed not unworthy to become his successor. Torricelli accordingly, repairing to Florence, October 10, 1641, resided with Galileo, and acted as his amanuensis during the three remaining months of his life. On its close his contemplated return to Rome was anticipated by his nomination as grand-ducal mathematician and professor of mathematics in the Florentine academy. The discovery which has perpetuated his fame was made in 1643. Galileo had failed to perceive why water refuses to rise above 33 feet in a closed tube. It occurred to Torricelli to try the experiment in a more compendious form. The anticipated result ensued that the suspended column of mercury was shorter than that of water in the proportion of its greater specific gravity. He immediately concluded both to be sustained by atmospheric pressure, and con­structed the “ siphon-barometer ” expressly for the purpose of measuring its fluctuations. By this momentous dis­covery the obscure notion of a *fuga vacui* was banished from physical science, and its progress most notably quickened. The mercurial barometer was long known as the “ Torricellian tube,” and the vacuum it includes is still designated the “ Torricellian vacuum.”

The publication amongst Torricelli’s *Opera Geometrica* (Florence, 1644) of a tract on the properties of the cycloid involved him in a controversy with Roberval, who accused him of plagiarizing his earlier solution of the problem of its quadrature. There seems, however, no room for doubt that Torricelli’s was arrived at independently, The matter was still in debate when he was seized with fever and pleurisy, and died at Florence, after twenty days’ illness, October 25, 1647, at the age of 39. He was buried in San Lorenzo, and a commemorative statue of him erected at Faenza in 1864. He was of a singularly amiable dis­position, and possessed qualities the most felicitous for the investigation of nature. Among the new truths detected by him was the valuable mechanical principle that if any number of bodies be so connected that, by their motion, their centre of gravity can neither ascend nor descend, then those bodies are in equilibrium. He also discovered the remarkable fact that the parabolas described (in a vacuum) by indefinitely numerous projectiles discharged from the same point with equal velocities, but in all directions, are situated within a paraboloid which is a tangent to all of them. His theorem that a fluid issues from a small orifice with the same velocity (friction and atmospheric resistance apart) which it would have acquired in falling through the depth from its surface is of funda­mental importance in hydraulics. He greatly improved both the telescope and microscope, and invented the simple microscope composed of a globule of melted glass. Several large object lenses, engraven with his name, are preserved at Florence. He used and developed Cavalieri’s method of indivisibles.

A selection from Torricelli’s manuscripts was published by Tommaso Bonaventura in 1715, with the title Lezioni Accademiche (Florence). They include an address of acknowledgment on his admission to the Accademia della Crusca. His essay on the inundations of the Val di Chiana was printed in Raccolta d'Autori che trattano del Moto dell' Acque (vol. iv. p. 115, Florence, 1768) and amongst Opuscoli Idraulici (vol. iii. p. 347, Bologna, 1822). For his life, see Fabroni, Vitæ Italorum, vol. i. p. 345; Ghinassi, Lettere fin qui Inedite di Evangelista Torricelli (Faenza, 1864); Tiraboschi, Storia della Lett. It., vol. viii. p. 302 (ed. 1824); Montucla, Hist. des Math., vol. ii. ; Marie, Hist. des Sciences, vol. iv. p. 133.

TORRIGIANO, Pietro (*c*. 1470-1522), a Florentine sculptor, was, according to Vasari, one of the group of talented youths who studied art under the patronage of Lorenzo the Magnificent in Florence. Ben. Cellini, report­ing a conversation with Torrigiano, relates that he and Michelangelo, while both young, were copying the frescos in the Carmine chapel, when some slighting remark made by Michelangelo so enraged the violent temper of Torri­giano that he struck him on the nose, and thus caused that disfigurement which is so conspicuous in all the portraits of Michelangelo. Soon after this Torrigiano visited Rome, and helped Pinturicchio in modelling the elaborate stucco decorations in the Appartamenti Borgia for Alexander VI. After some time spent as a hired soldier in the service of different states, Torrigiano was invited to England to execute the magnificent tomb for Henry VII. and his queen which still exists in the lady chapel of Westminster Abbey. This appears to have been begun before the death of Henry VII. in 1509, but was not finished till 1517. It consists of two colossal recum­bent effigies in gilt bronze on an altar-tomb of black marble, decorated with very graceful medallions of the patron saints of Henry and his wife, and other enrichments in bronze. The two effigies are well modelled, and have life-like but not too realistic portraits. After this Torri­giano received the commission for the altar, retable, and baldacchino which stood at the west, outside the screen of Henry VII.’s tomb. The altar had marble pilasters at the angles, two of which still exist, and below the *mensa* was a life-sized figure of the dead Christ in painted terra-cotta. The retable consisted of a large relief of the Resurrection. The baldacchino was of marble, with enrichments of gilt bronze ; part of its frieze still exists, as do also a large number of fragments of the terra-cotta angels which sur­mounted the baldacchino and parts of the large figure of Christ. The whole of this work was destroyed by the Puritans in the 17th century.@@1 Henry VIII. also com­missioned Torrigiano to make him a magnificent tomb, somewhat similar to that of Henry VII., but one-fourth larger, to be placed in a chapel at Windsor *(q.v.)·,* it was, however, never completed, and its rich bronze was melted by the Commonwealth, together with that of Wolsey’s tomb. The indentures for these various works still exist, and are printed by Neale, *Westminster Abbey,* London, 1818, vol. i. p. 54-59. These interesting documents are written in English, and in them the Florentine is called “ Peter Torrysany.” For Henry VII.’s tomb he contracted to receive £1500, for the altar and its fittings £1000, and £2000 for Henry Viii.’s tomb. Other works attributed from internal evidence to Torrigiano are the tomb of Margaret of Richmond, mother of Henry VII., in the south aisle of his chapel, and a terra-cotta effigy in the chapel of the Rolls.

While these royal works were going on, Torrigiano vis­ited Florence in order to get skilled assistants. He tried to induce Ben. Cellini to come to England to help him, but Cellini refused, partly from his dislike to the brutal and swaggering manners of Torrigiano, and also because he did not wish to live among “ such beasts as the Eng­lish.” The latter part of Torrigiano’s life was spent in Spain, especially at Seville, where some terra-cotta sculp­ture by him still exists. His violent temper got him into

@@@1 An old drawing still exists showing this elaborate work ; it is en­graved in the Hierurgia Anglicana, London, 1848, p. 267. Many hundreds of fragments of this terra-cotta sculpture were found a few years ago hidden under the floor of the triforium in the abbey ; they are unfortunately too much broken and imperfect to be fitted together.