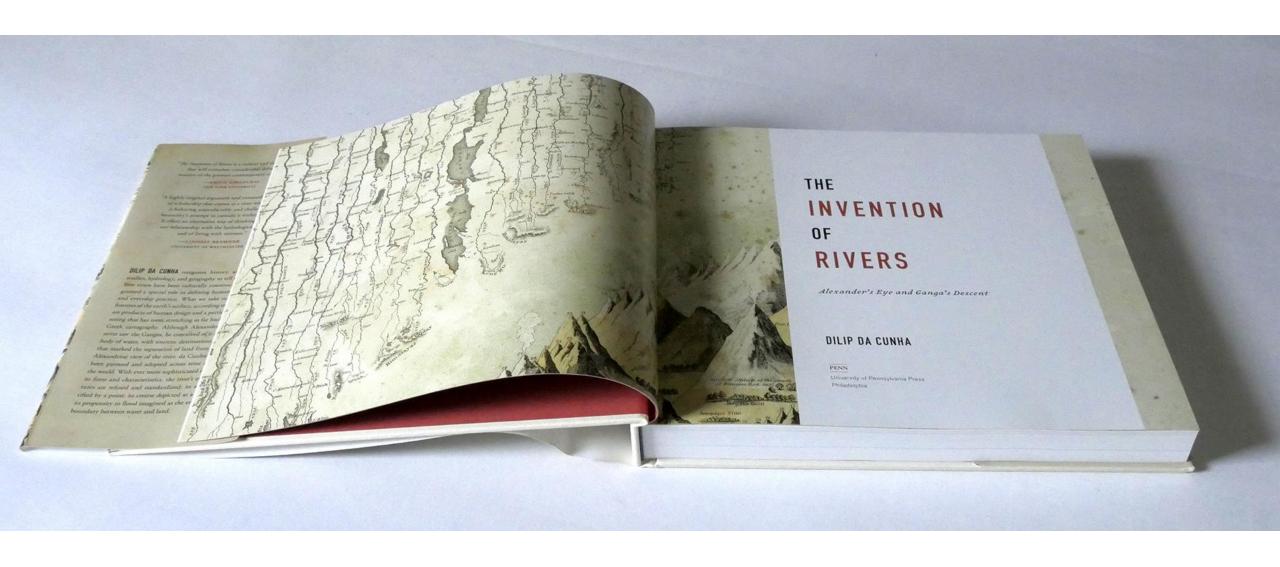
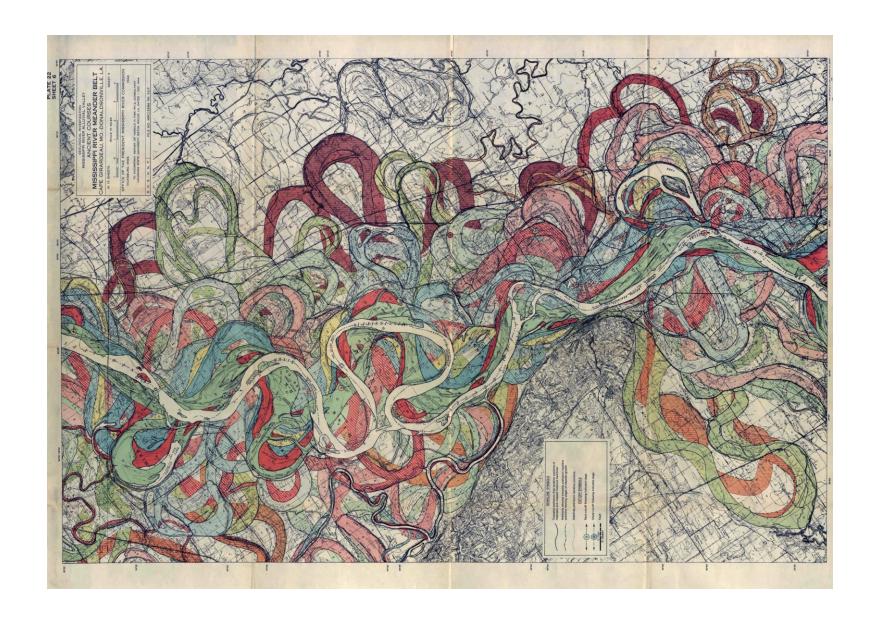


The Navona Lake and the eels of the Pantheon. Architecture and landscape for flooding

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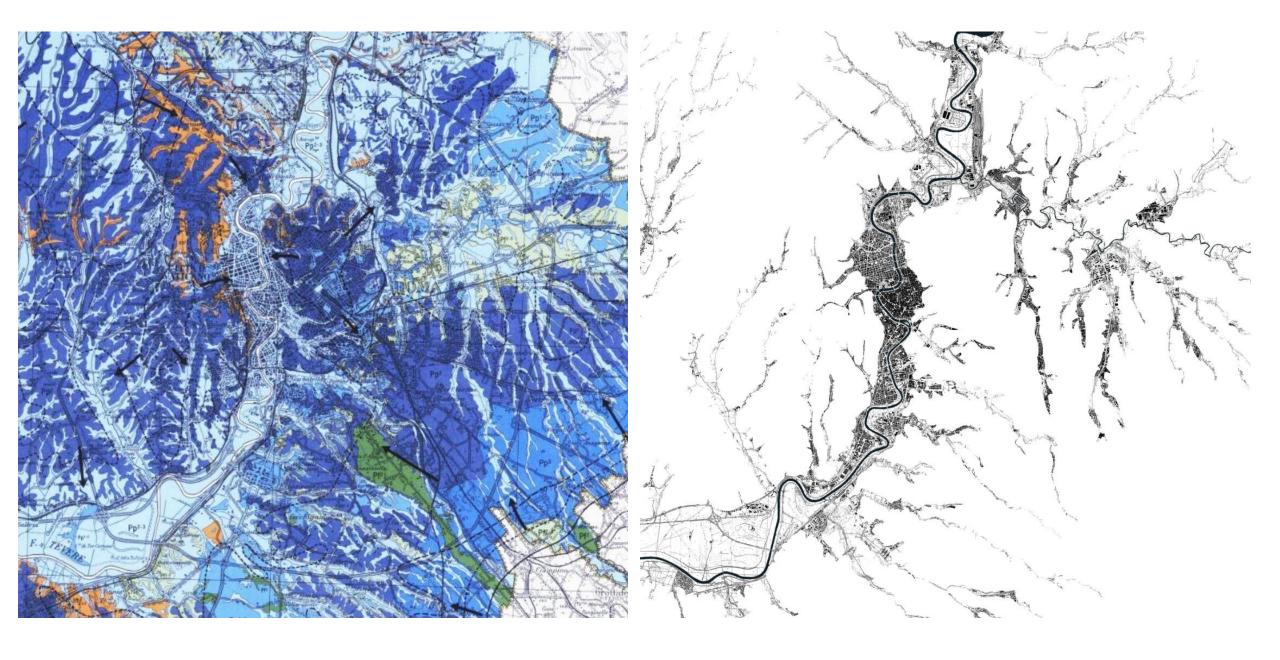




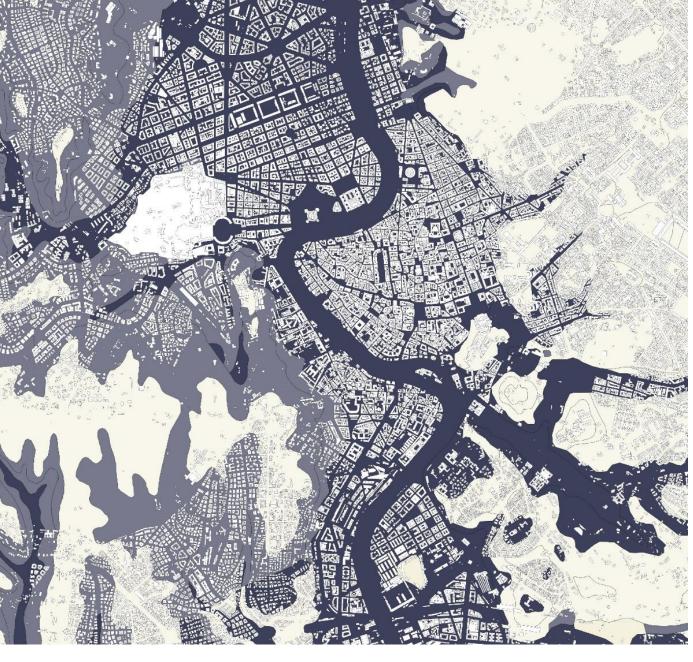


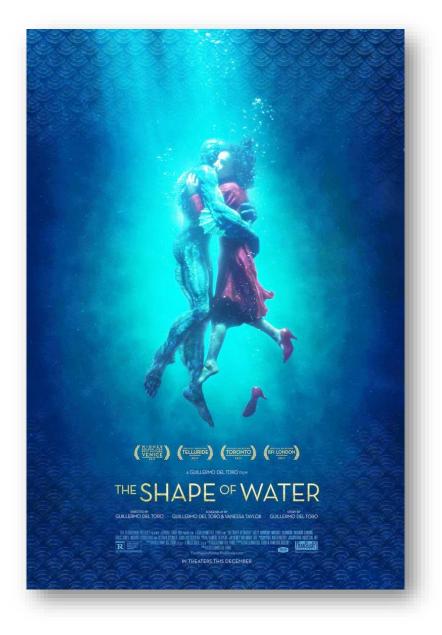
Harold Norman Fisk, Ancient courses. Mississippi River Meander Belt, 1944





Rome. Hydro-geological Map | Matteo Polci, Rome. The terrains of water, 2016

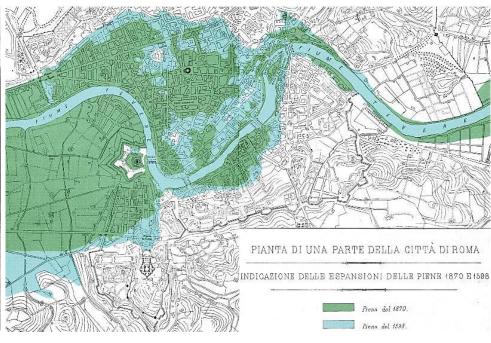


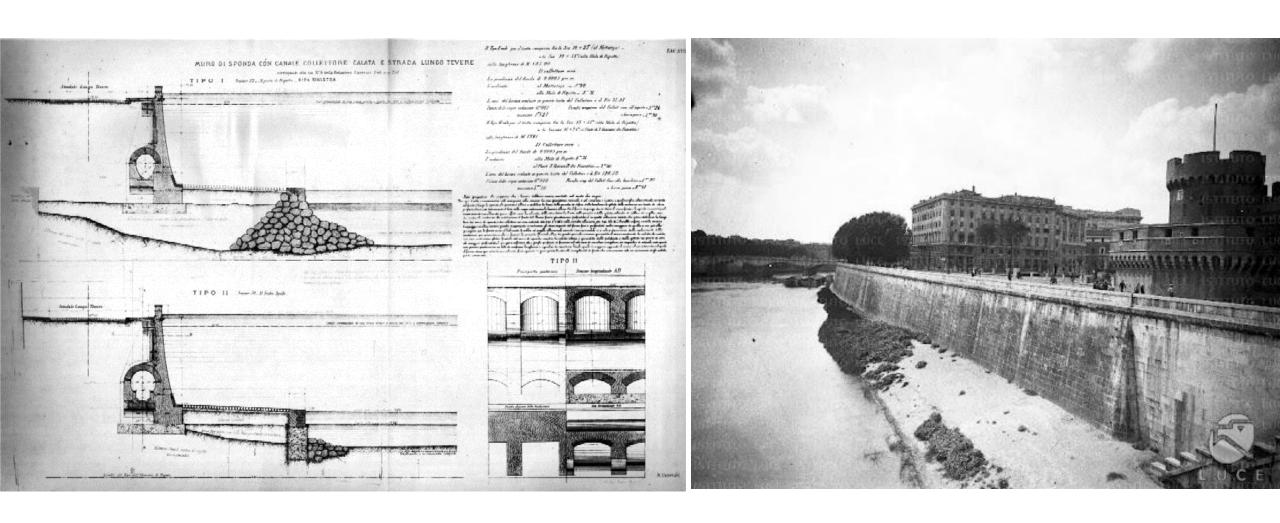


Mario Bruni & Marco Mauti, Rome. The terrains of water, 2021 | Guillermo del Toro, The Shape of Water, 2017















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able to draw an almost complete chronology of these officers from the terminal stones on which their names are engraved.

LITERATURE. — Corpus Inscr., vol. i. p. 180; vol. vi. p. 266. — Theodor Mommsen, Staatsrecht, ii³, p. 1047. — Giuseppe Gatti, Bull. comm. arch., vol. xv., 1887, p. 306. — Thédenat, Dictionn. antiq. grecques et rom. de Saglio, vol. i. p. 1623. — Luigi Cantarelli, Bull. comm. arch., vol. xvii., 1889, p. 185; vol. xxii., 1894, pp. 39 and 354. — Dante Vaglieri, Bull. comm. arch., vol. xxii., 1894, p. 254.

Two means were adopted in imperial times to protect the city from floods—an embankment on either side, and the shortening of the bed between the city and the sea.

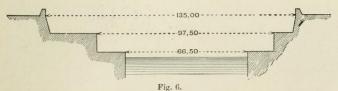
First, as to the embankment. We have seen how the Tiber is subject to differences of level, which reached to 12.86 metres in the flood of Clement VIII., increasing fourteen times the volume of its waters. To give such a capricious river a regular outlet, modern engineers have built a uniform bed 100 metres in width, which has to serve both for droughts and for floods. Their pre-

Modern embankment



decessors, on the other hand, had adopted a triple section, the narrowest to serve in time of drought, the second in moderate, the third in extraordinary floods, as shown in the following diagram:—

Ancient embankment



The advantages of the old over the modern system are obvious. With the old the river was obliged to run in every season of the year within limits well defined, and proportioned to its volume,

without raising sandbanks and depositing silt and mud. The moderate height of each of the three receding steps allowed the river to preserve its pleasing aspect, as is the case in many of the modern capitals of Europe; while the huge walls between which we have imprisoned the stream have transformed it into a deep and unsightly channel, with nothing to relieve the monotony of its banks.

Side outlets to relieve the flood and shorten its course towards the sea were first cut open by Claudius. An inscription discovered at Porto in 1836 contains the expression: Fossis ductify vrbem invidentials periodic liberavit (see Corpus Inser., vol. xiv. n. 85). Trajan changed the course of the channels. Another fragmentary inscription, now in the cloisters of S. Paul outside the Walls, says of him: Fossam fecit qua invidationes Tiberis additional virbem vexantes . . . arcerentur. This subject has been exhaustively treated by—

Pietro Ercole Visconti, Dissertazioni Accad. archeol., vol. viii. (1838), p. 213.—Luigi Canina, Ibid., p. 259.—Antonio Nibby, Dintorni di Roma, vol. ii. p. 612.—Reifferscheid, Bull. inst., 1863, p. 8.—Charles Texier, Revue gén. d'Architecture, vol. xv. p. 306, pls. 31, 32.—Rodolfo Lanciani, Ricerche sulla città di Porto (in Ann. Inst., vol. xl., 1868, p. 144.) Corpus Inscr. Lat., vol. xiv. p. 22, n. 88.

The following cut represents the mouth of the navigable arm of the river at Fiumicino, which is the modern representative of the fossa Traiana:—



Fig. 7. - The Mouth of the Tiber at Fiumicino.

The characteristics of the Tiber are, first, the supposed wholesome qualities of its water, the favorite beverage of Clement VII.,





Mario Bruni & Marco Mauti, Rome. The terrains of water, 2021



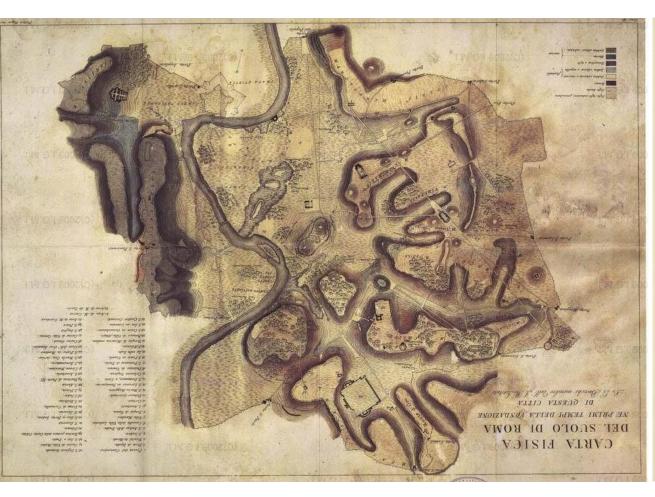


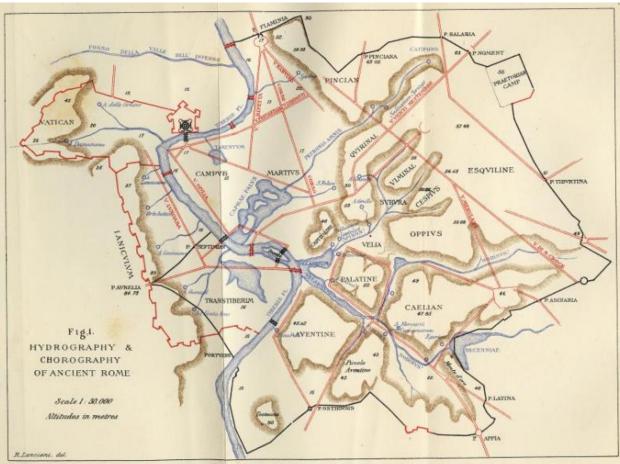






















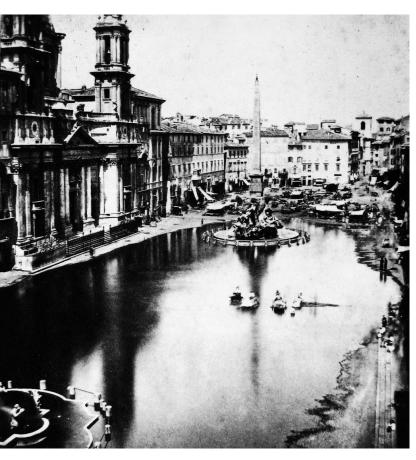




Antonio Joli, Piazza Navona Allagata, 1750 ca



Giovanni Paolo Panini, Veduta di Roma con piazza Navona inondata d'acqua e giochi di carrozze, 1756

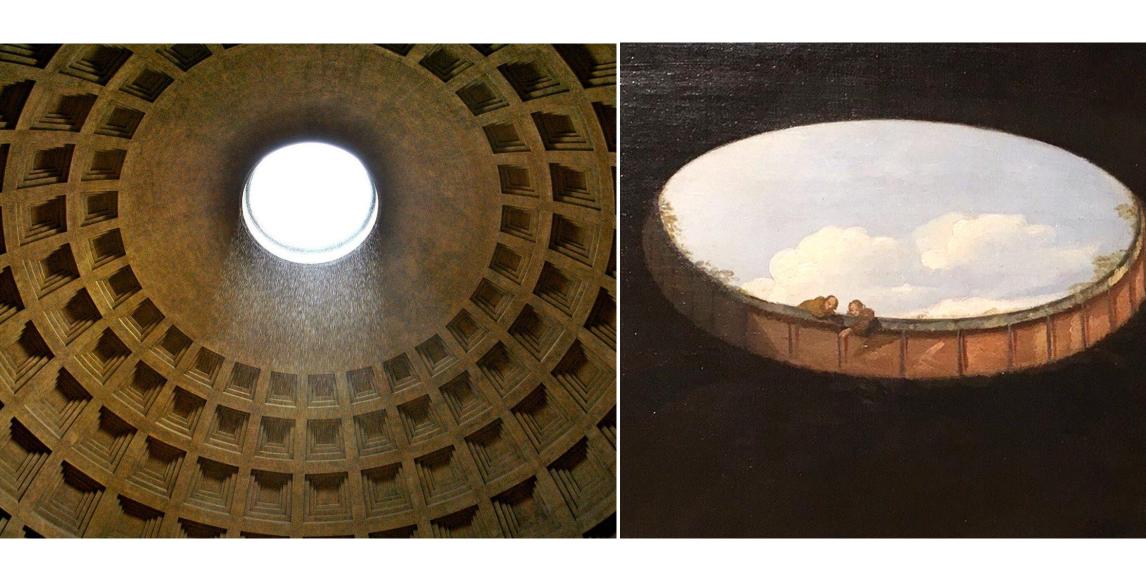




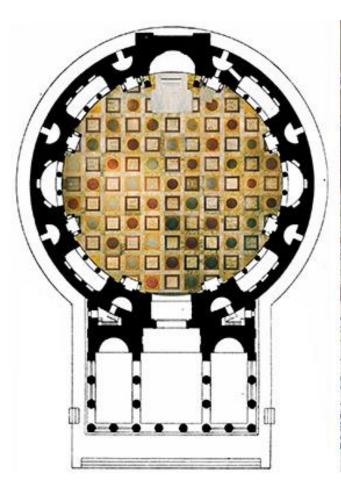








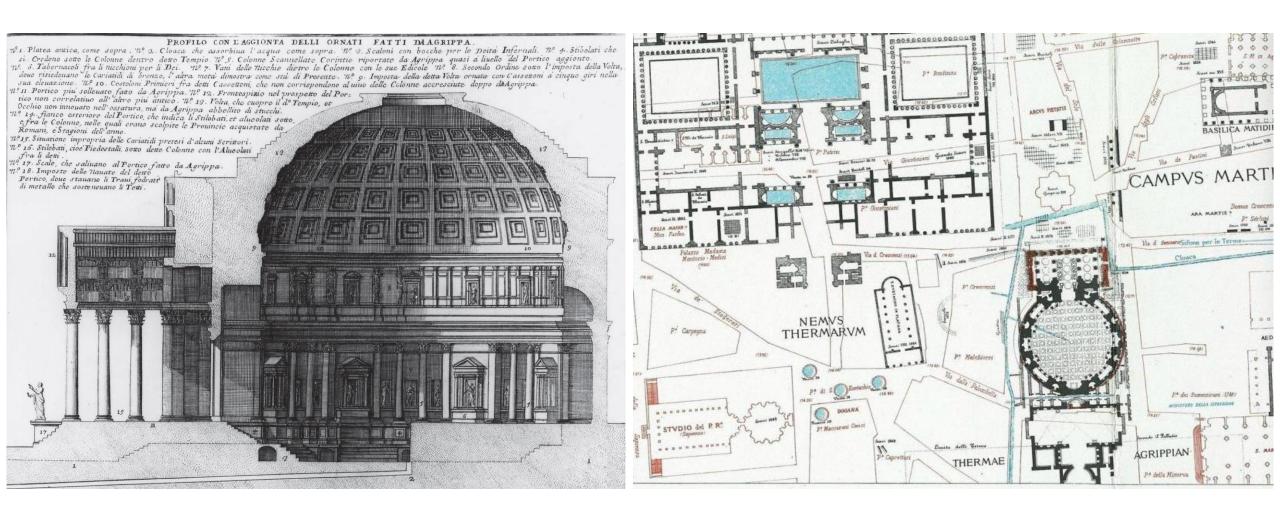
Pantheon, the rain through the ocolus | Giovanni Paolo Panini, Interno del Pantheon, Roma, dettaglio, 1754











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Summing up the information supplied to us by writers and inscriptions, we had come to the following inferences, which were hypotheses rather than conclusions: first, that the present Pan-

THE PANTHEON

it difficult, if not impossible, to wrest from the Sphinx of the Campus Martius the secret of its existence and metamorphoses. We know a great deal more now, but the difficulties remain the same.

The Thermæ were built six years after the dedication of the Pantheon and of the Lakonikon; namely, in 19 B. C. It appears also that in this second period of the great undertaking Agrippa must have changed his mind more than once. At all events, after the year 19 we hear no more of the Lakonikon, but only of the Therma. Was the Pantheon connected directly or indirectly with the baths, or did it stand by itself, alone, independent, at the northern end of the quadrangle? In other words, is it possible that the Pantheon, originally dedicated to the gods, should have been used, six years later, as a caldarium, and thus have been absorbed as an integral part of the great whole? The question must remain unanswered; so many alterations have taken place at the point of contact between the rotunda and the baths that nothing is left of the first design. No other Roman structure, except the temple of Jupiter Optimus Maximus, has been so unfortunate, and has undergone so many trials.

In the year 80, during the fire of Titus, the baths and the Pantheon were burnt down. Domitian restored both. In 110. under the rule of Trajan, a thunderbolt set the building on fire, and destroyed it to the level of the ground. How such a thing could have happened is a mystery, to be added to the many others connected with this structure. In the years 120-124 Hadrian reconstructed the rotunda and the baths, as shown by his biographer, ch. 19. Some other dreadful accident must have happened soon after, for Hadrian's successor, Antoninus Pius, is said to have restored templum Agrippa. In the year 202 Septimius Severus and Caracalla pantheym vetystate corryptym restityerynt. These words, engraved on the same entablature which is inscribed with the name of the founder, are more than enigmatic. How is it possible that a structure of immense solidity, only eighty years old if we reckon from the restoration of Hadrian, fifty or sixty if we reckon from the restoration of Antoninus, should have become in so short a time "vetustate corrupta"? It may help us to explain the fact if we assume that, while the upper part of the Pantheon was often struck by lightning and attacked by fire, the lower part was submerged by the Tiber three or four times a year. Fire and water must have increased tenfold the destructive power of time.

theon, inscribed with the name of Agrippa, was substantially his work; second, that the portico was a later addition to, or alteration of, the original plan: third, that some details of the structure, especially the inner decoration, were the work of Hadrian and of Severus and Caracalla; fourth, that the Pantheon had never been used as a caldarium. Such were the current theories at the beginning of 1892.

At that time the Department of Antiquities was raising a movable scaffolding to repair the dome in two or three places, where rain-water had filtered in and damaged the coating of stucco. A distinguished pupil of the French Academy (Villa Medici), Louis

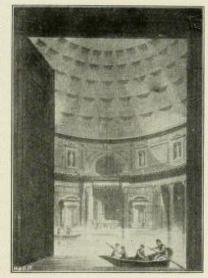


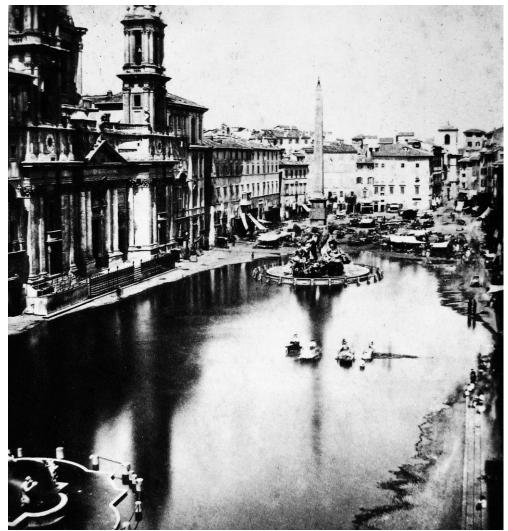
Fig. 186.—The Pantheon flooded by the Tiber, (From a water-color by Pannini, in possession of the author.)

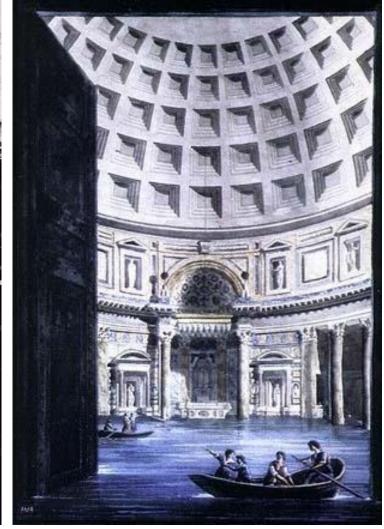
Chedanne, then engaged in the architectural study of the Pantheon, was allowed by the department to take advantage of the scaffolding and to examine the structure of the great dome. He was surprised to find it built of bricks stamped with a date (Agrippa's bricks are not dated); and the date was of the time of Hadrian. It was felt to be desirable to ascertain at once whether these bricks belonged to a local and unimportant restoration of the beginning of the second century, or whether they bore testimony to the chronology of the whole edifice.

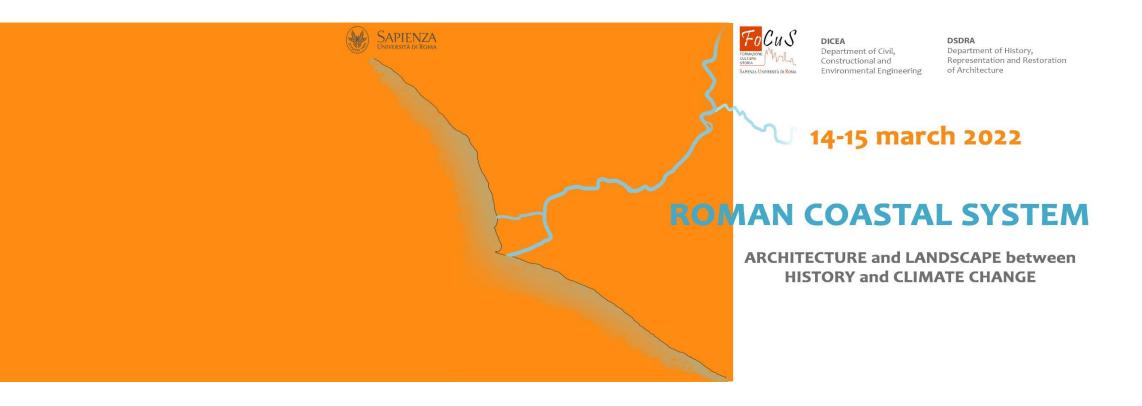
The masonry of the rotunda, like that of Hadrian's mausoleum, is faced with small triangular bricks, and with rows of tegulæ bipedales at intervals of five feet, one above the other. (See p. 47.) Since these tegulæ bipedales are dated, as a rule, holes were bored



Giovanni Paolo Pannini, Pantheon. Interno allagato con barche, ca. 1730







The Navona Lake and the eels of the Pantheon. Architecture and landscape for flooding

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