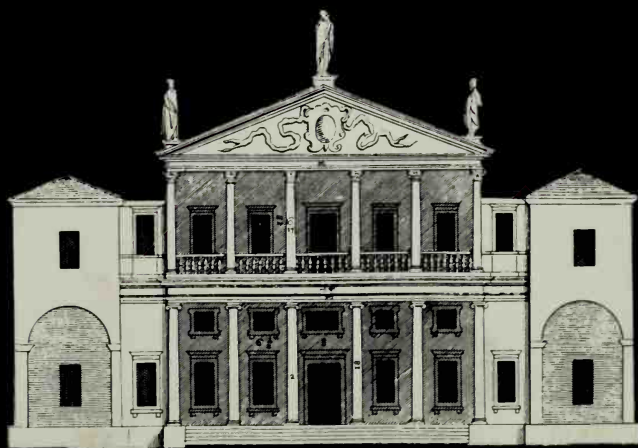


Andrea Palladio
THE
FOUR BOOKS
OF
ARCHITECTURE



With a new Introduction by Adolf K. Placzek

ANDREA PALLADIO
The Four Books of Architecture

with a new introduction by
ADOLF K. PLACZEK
Avery Library, Columbia University

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Introduction to Dover Edition

It can be safely said that Andrea Palladio ranks not only among the most famous, but also among the most influential architects of all time. However, when we turn to his life and to his person, we find that very little of either the man or of his life is known. He was born in Padua in 1508, of humble family, but grew up in Vicenza. He was originally trained as a sculptor (a not unusual thing for Renaissance architects) and as a stone mason. In Count Giangiorgio Trissino he found a generous patron, who took him to Rome in 1541. It was there that his eyes were opened to the full glory of classic architecture and that he turned to the study of ancient buildings. He traveled widely in Italy, but—with the possible exception of Nîmes—never outside. He returned to Rome several times, but he did not become connected with the greatest architectural task of his age, the rebuilding of Saint Peter's. Most of his life he spent in Vicenza, where he died in 1580. Palladio was a superb architect, but he was not an innovator like Brunelleschi or Michelangelo. He built churches, town and country houses, public buildings and bridges in Venice and on the Venetian mainland and in and around Vicenza. Many of these buildings were built of cheap material (brick faced with stucco instead of stone for which the designs would have called) and are therefore now in rather poor condition. Among his main works are the churches of S. Giorgio Maggiore and of Il Redentore in Venice, the Villa Capra near Vicenza, the Palazzi Valmarana, Chiericati and Thiene, and the exterior of the Basilica (Town Hall), all in Vicenza. His last great work was the Teatro Olimpico in Vicenza, which his pupil Vincenzo Scamozzi finished after his death. It contains a permanent stage built in perspective—a most remarkable creation.

The question immediately arises: why this enormous fame and influence? For it was not only his buildings that were imitated again and again, both in their pure plans and elevations and in their details; also his writings, above all the *Four Books of Architecture*, have had the most profound and widespread impact. This book has been translated into every major European language, issued and reissued time after time and has remained a basic book for every architectural library. Why this fame and influence? The answer, in all likelihood, lies in the fact that Andrea Palladio was more than an interpreter of a particular style or a skillful publicist for his own works; that he was—and remains—the spokesman for the belief in valid rules, in immutable canons, for the belief that there is a correct, a right way to design. One can go even further and call him a spokesman for absolute standards. He is the only architect after whom an architectural idiom is named: Palladianism. Nobody speaks of Brunelleschism, Bramantism, or, in more recent examples, of Wright-ism or Le Corbusier-ism. "Miesian" would be a possible term, and in a way for the same reason—because of the striving for a perfect, a valid form inherent in it. In this sense, Mies van der Rohe himself could be labeled a Neo-Palladian.

Palladianism is the conviction, first of all, that a universally applicable vocabulary of architectural forms is both desirable and possible; secondly, that such a vocabulary had been developed by the ancient Romans (Palladio's knowledge of Greek architecture was scant); and thirdly, that a careful study and judicious use of these forms will result in Beauty. This Beauty, according to the Palladians, is therefore not only derived from ideal forms and their harmony; it is also rooted in

historical correctness; and it includes the most practical, reasonable solution of the specific problem on hand. Much of Palladio's thought is based on Leon Battista Alberti's *De Re Aedificatoria*, the first of the great architectural treatises of the Renaissance (published in 1485), but even more closely on the writings of a Roman architect of the Augustan age, Vitruvius, which were issued in print for the first time in 1486. This is the only architectural book preserved from the Roman and Greek world, and was, as such, for Palladio and his contemporaries the authoritative voice of Antiquity. Of course Palladio was deeply impressed by the Roman remains themselves. He studied them thoroughly and even published the first scholarly guide book to classical Rome (*Le Antichità di Roma*, 1554), a little volume much used in the next two centuries.

Palladio's main work, however, and the one on which much of his fame and of the durability of Palladianism rests, is *I Quattro Libri dell'Architettura*, as the *Four Books of Architecture* are called in the original. It was first published in Venice in 1570, and proved immediately to be a book of the greatest importance. A second edition followed in 1581, a year after the author's death, another in 1601, and so on in remarkable succession. The effect of this book on the major European countries—France, the Netherlands and Germany above all—where the Renaissance developed more slowly, was equally profound. In England it was the great Inigo Jones (1573–1652) who first imported Palladianism. During his visit to Italy in 1614 he not only acquired a number of original drawings by Palladio from the latter's pupil Scamozzi, but also a copy of the *Quattro Libri*, which he studied most carefully and richly annotated. This annotated copy is preserved at Worcester College, Oxford, and it can be called a book in which literally two civilizations meet. The Banqueting House at Whitehall (1619–1622), the Queen's House in Greenwich (1616–1635) and other buildings are the result of this meeting; with them the Italian High Renaissance finally reached England.

The first complete English translation of *I Quattro Libri* was not published until 1715, by an enterprising Venetian architect, Giacomo Leoni, who had settled in London. In the following years Palladianism became the ruling style in England. The hegemony of one style or taste at a given time is of course the result of concurring factors; but if a single individual can be credited (or blamed, as the position may be), then Richard Boyle, third Earl of Burlington (1695–1733) is the man to whom England owes the long rule of strict Palladianism in the eighteenth century—and, more indirectly, America its own brand of the same style. An art patron of vast influence and wealth, he was also an architect in his own right, and a precise and demanding scholar. The engravings in Leoni's edition of Palladio had not been faithful to the original: there had been decorative embellishments in the Baroque spirit, additions, and even misinterpretations of the original design intent. This, most probably on Burlington's suggestion, was to be remedied by a faithful and accurate reproduction of the original plates, and an exact translation of the text. The man to accomplish this was Isaac Ware (birthdate unknown, d. 1766), who was himself an architectural writer, a fairly prominent architect of his day, and a follower of Burlington. The edition came out in 1738 and can certainly be considered a successful accomplishment. Indeed the accuracy of the reproductions is amazing. In spite of this, it has remained the less accessible of the two variants, partly because Leoni was first on the scene, was more ambitious in his publishing ventures and persisted through two more English editions. In fact, Ware's faithful edition became somewhat of a rarity; and it is for this reason, too, that the present reissue is of the greatest value. It will make a work available to the general public which has long been elusive and inaccessible, yet can still be considered essential to the study of architectural forms. And while the short and factual text is obviously of less importance than the plates, the good English translation deserves a special mention. To those who do not read Italian, it will convey something of the clarity and restraint of Palladio's own style, besides containing the necessary key to the structures and forms he chose to illustrate.

The work, as is evident from the title, is divided into four parts ("books"):

The *First Book* is concerned with building materials, building techniques, and most of all with that great preoccupation of the Renaissance architect, the five orders of architecture (Tuscan, Doric, Ionic, Corinthian, Composite), as they are expressed in columns, pilasters and the architraves resting on them. Palladio then turns briefly to the other parts of a classic building (stairs, chimneys, roofs, etc.).

The *Second Book* treats of private houses on a grand scale. Apart from a few Roman reconstructions, this book shows Palladio's own designs—the many villas on the Venetian mainland and in and around Vicenza, among them the most famous of all, the Villa Capra ("La Rotonda" as it is sometimes called; plate 13).

The *Third Book* deals with streets, piazzas, bridges and basilicas (a basilica was originally not a religious building, but a Roman hall of justice). Again, Palladio reproduces Roman works,

including a reconstruction of Julius Caesar's Rhine bridge, and then turns to his own designs. Plate 19 shows the famous arcades of the Basilica in Vicenza, from which the much imitated "Palladian motif" derives.

The *Fourth Book* deals with Roman temples; particularly noteworthy are the beautiful drawings of the Pantheon (plates 51-60). Plates 44-45 show Bramante's Tempietto in S. Pietro Montorio. This is the only building in the book which is not either by Palladio himself or of Roman origin. The remarks on p. 97 (chapter xvii) throw a bright light on Palladio's position towards his Renaissance precursors and contemporaries.

A modern biography of Palladio in English is still lacking. For the most illuminating analysis of Palladio's design ideas, particularly his use of mathematical proportions, the reader is referred to *Architectural Principles in the Age of Humanism* (3rd rev. ed., 1962) by Rudolf Wittkower, to whom we are indebted for much of our present knowledge of sixteenth-century as well as eighteenth-century Palladianism.

1964

ADOLF K. PLACZEK

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REGINA VIR-TUS

THE FOUR BOOKS
OF
ANDREA PALLADIO'S
ARCHITECTURE:

WHEREIN,
After a short Treatise of the Five ORDERS,
Those Observations that are most necessary in
BUILDING,
PRIVATE HOUSES, STREETS, BRIDGES, PLAZZAS,
XISTI, and TEMPLES are treated of.

LONDON,

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ISAAC WARE,
Anno MDCCXXXVIII.



To the Right Honourable

R I C H A R D
Earl of BURLINGTON, &c.

MY LORD,



OUR giving me free access to Your study, wherein many of the original drawings of PALLADIO, besides those which compose this work, are preserved, and taking upon You the trouble of revising the translation, and correcting it with Your own hands, are such instances of Your love to arts, and of Your friendship to me, that I cannot too publicly return YOUR LORDSHIP thanks for favours that surpass all acknowledgment.

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REFERENCES to such Places of the AUTHOR, where his Terms of Art are by himself best explained, alphabetically disposed.

A

A BACO, page 14. plate 10.
Aeroteria, p. 93. pl. 30.
Alato a torno, v. Peripteros.
Amphiprotilos, pl. 83.
Anti, p. 45.
Antis, p. 82.
Anelli, Annulets, or Gradetti, p. 18. pl. 15.
Architrave, p. 15. pl. 11. and p. 18. pl. 15.
Areostilos, p. 84.
Astragal, or Tondino, p. 14. pl. 10.
Atrio, or Porch, p. 42. pl. 18.

B

Bafe, p. 17. pl. 14.
Basilica, p. 73. pl. 13. and p. 75. pl. 17.
Bastoncino, p. 93.
Bastone, or Torus, p. 14. pl. 10.
Benda, or Tenia, p. 18. pl. 15.
Bronze, bellmetal, pl. 5.

C

Campana, the body of the Corinthian capital.
Cancellarie, libraries, p. 44 and 45. pl. 29.
Cartelli, or Cartocci, a kind of scroll, p. 26.
Cavetto, p. 15. pl. 11.
Cauriola, p. 88. pl. 10.
Caulicola, stem of the leaf in the Corinthian capital.
Cimacio of capital, p. 15. pl. 11.
Cimacia of pedestal, p. 17. p. 14.
Cima recta, or Gola dritta, p. 15. pl. 11.
Cima or Gola reverfa, p. 18. pl. 15.
Cimbria, Fillet, or Cincture, p. 14. pl. 10.
Ciziceni, p. 45. pl. 29.
Colonelli, p. 63. pl. 3.
Collarino, p. 14. pl. 10.
Correnti, p. 67. pl. 6.
Corridors, balconies, p. 40. pl. 7.
Cortile, little court, p. 44. p. 24.
Corona, or Gocciolatoio, the drip, p. 15. pl. 11.
Curia, p. 73. pl. 30.

D

Dado, the dye of a pedestal, p. 17. pl. 14.
Dentelli, or Dentels, p. 22. pl. 24.
Diaftilos, p. 84.
Dipteros, double winged with columns, p. 83.

E

Eustilos, columns placed at reasonable and convenient intervals, p. 84.

F

Fascia, p. 18. pl. 15.
Fluting or Flutes, the chanellings of a column.

Fregio or Frize, p. 15. pl. 11.
Fularolo, p. 24.
Fust, shaft of a column.

G

Goccie, p. 18. pl. 15.
Gocciolatoio, or Corona, p. 15. pl. 11. and p. 18. pl. 15.
Gola dritta, or Cima recta, p. 15. pl. 11.
Gola, or Cima reverfa, p. 18. pl. 15.
Gradetto, Gradetti, or Annuli, p. 18. pl. 15.
Gronda, or Drip, p. 14.
Guttæ, or Drops, p. 18.

I

Imposts, p. 17. pl. 14.
Intaglia's, carved ornaments of the frize and architrave.
Intavolato, or Cima, or Gola reverfa, p. 22.
Intercolumniation, the space between columns.

L

Liftello, fillet.
Loggia, or Vestibulo, p. 27. and p. 42. pl. 18.

M

Metopa, p. 18. pl. 15.
Mezato, a half story, p. 40. pl. 8.
Modeno, p. 70. pl. 8.
Modiglioni, p. 20. pl. 20.
Module, p. 13.
Mutule, p. 29.

O

Oeci, small balls, p. 43, 44.
Orlo, Zocco, or Plinth, p. 14. pl. 10.
Ovolo, p. 14. pl. 10.

P

Palefra, p. 77. pl. 21.
Pedestal, p. 14. pl. 10.
Peridromis, p. 21.
Peripteros, winged round with columns, p. 83.
Peristilio, p. 44. pl. 23.
Picrostilos, thick of columns, p. 83.
Piano, p. 32. pl. 30.
Plinth, Orlo, or Zocco, p. 17. pl. 14.
Poggio, or Pedestal, p. 42.
Portico, p. 42. pl. 18.
Profile, side view.
Protilos, fronted with columns, p. 21.
Pseudodipteros, false-winged round with columns, p. 83.

R

Regolo, or Orlo, p. 31.
Remenati, p. 84.

b

Reticula,

EXPLANATORY INDEX.

Reiculata, p. 7. pl. 1.
Riempiuta, *coffer-work*, p. 9. pl. 6.

S

Sacoma, or Profile, p. 92. pl. 23. and p. 101. pl. 56.
Sacrifty, *vestry*, p. 86.
Salotte, *balls*, p. 44. pl. 23.
a Schiffo, p. 44. pl. 26, 27.
Sifilos, of two diameters, p. 84, 105.
Soffit, p. 18. pl. 15.

T

Tablino, p. 42. pl. 18.
Tenia, or Benda, p. 18. pl. 15.
Terrazzo, *plaisier*.
Testudine, covering of porch, p. 43.
Tetrafilii, of four columns, p. 44. pl. 25.
Tondino, or Afragalo, p. 14. pl. 10.

Torus, or Baftone, p. 14. pl. 10.
Tribuna, or Cupola, p. 85.
Triclini, *eating parlours*, p. 44. pl. 29.
Triglyph, p. 18. pl. 15.

V

Vestibulo, or Loggia, p. 42.
Voluta, the horn of a capital.

X

Xifti, p. 77. pl. 21.

Z

Zocco, Orlo, or Plinth, p. 17. pl. 14.

ERRATA.

Besides a few literal Mistakes, the Reader will be pleased to take notice of the following :

Page 14. line 14. read *besides the being*. P. 15. l. 11. r. *Gocciolatoio*. P. 19. l. 10. r. *Eufilos*. Ibid. l. 17. r. *fourth and an eighth*. P. 21. l. 6. r. *nine modules and an half*. Ibid. l. 21. r. *Sifilos*. P. 24. l. 10. r. *Picnofilos*. P. 25. l. 45. r. *thinner at the top*. P. 32. l. 10. r. *two parts in three*. P. 52. l. ult. r. *delight*. Every where read *mezato* and *mezati*. P. 55. l. 21. r. *as there are*. P. 85. l. 30. r. *Aercofilos*. P. 96. l. 44. r. *Fufarolo*. P. 97. l. 19. r. *elegance*. P. 97. l. 42. r. *Martirin*.

Plate 10. first Book, for 8 minutes in Cavetto of impost, read 5 minutes.



ADVERTISEMENT.

THE works of the famous ANDREA PALLADIO, published by himself at *Venice* in the year 1570. have been universally esteemed the best standard of architecture hitherto extant. The original work written in Italian being very scarce, several have attempted to translate the same into English, and to copy his excellent and most accurate wooden prints on copper plates.

IN particular, two persons have published what they honour with the title of PALLADIO's works: The first, and in all respects the best of the two, was done in the year 1721. by Mr. LEONI; who has thought fit not only to vary from the scale of the originals, but also in many places to alter even the graceful proportions prescribed by this great master, by diminishing some of his measures, enlarging others, and putting in fanciful decorations of his own: and indeed his drawings are likewise very incorrect; which makes this performance, according to his own account in the preface, seem rather to be itself an original, than an improvement on PALLADIO.

THE other work (published in the year 1735.) is done with so little understanding, and so much negligence, that it cannot but give great offence to the judicious, and be of very bad consequence in misleading the unskilful, into whose hands it may happen to fall.

TO do justice therefore to PALLADIO, and to perpetuate his most valuable remains amongst us, are the principal inducements to my undertaking so great and laborious a work; in executing of which, I have strictly kept to his proportions and measures, by exactly tracing all the plates from his originals, and engraved them with my own hands: So that the reader may depend upon having an exact copy of what our author published, without diminution or increase; nor have I taken upon me to alter, much less to correct, any thing that came from the hands of that excellent artist.

FROM the same motive I have chosen to give a strict and literal translation, that the sense of our author might be delivered from his own words.

Scotland-Yard,
June, 1737.

THE AUTHOR'S P R E F A C E TO THE READER.

GUIDED by a natural inclination, I gave myself up in my most early years to the study of architecture: and as it was always my opinion, that the antient Romans, as in many other things, so in building well, vastly excelled all those who have been since their time, I proposed to myself VITRUVIUS for my master and guide, who is the only antient writer of this art, and set myself to search into the reliques of all the antient edifices, that, in spite of time and the cruelty of the Barbarians, yet remain; and finding them much more worthy of observation, than at first I had imagined, I began very minutely with the utmost diligence to measure every one of their parts; of which I grew at last so solicitous an examiner, (not finding any thing which was not done with reason and beautiful proportion) that I have very frequently not only travelled in different parts of Italy, but also out of it, that I might intirely, from them, comprehend what the whole had been, and reduce it into design.

Whereupon perceiving how much this common use of building was different from the observations I had made upon the said edifices, and from what I had read in VITRUVIUS, LEON BATTISTA ALBERTI, and in other excellent writers who have been since VITRUVIUS, and from those also which by me have lately been practised with the utmost satisfaction and applause of those who have made use of my works; it seemed to me a thing worthy of a man, who ought not to be born for himself only, but also for the utility of others, to publish the designs of those edifices, (in collecting which, I have employed so much time, and exposed myself to so many dangers) and concisely to set down whatever in them appeared to me more worthy of consideration; and moreover, those rules which I have observed, and now observe, in building; that they who shall read these my books, may be able to make use of whatever will be good therein, and supply those things in which (as many perhaps there may be) I shall have failed; that one may learn, by little and little, to lay aside the strange abuses, the barbarous inventions, the superfluous expence, and (what is of greater consequence) avoid the various and continual ruins that have been seen in many fabricks.

I applied myself the more willingly to this undertaking, as I see great numbers of persons at this time applying themselves to the study of this profession, many of which are worthily and honourably mentioned in the books of Messer GIORGIO VASARI ARETINO, a painter and rare architect.

I therefore hope, that the manner of building may with universal utility be reduced, and soon brought to that pitch of perfection, which in all the arts is greatly desired, and to which it seems that this part of Italy is very nearly arrived; since that not only in Venice, where all the good arts flourish, and
which

P R E F A C E.

which only remains as an example of the grandeur and magnificence of the Romans, one begins to see fabricks that have something good in them, since Messer GIACOMO SANSOVINO, a celebrated sculptor and architect, first began to make known the beautiful manner, as is seen (not to mention many other beautiful works of his) in the new Procuratia, which is the richest and most adorned edifice, that perhaps has been made since the antients; but also in many other places of less fame, particularly in Vicenza, a city of no very large circumference, but full of most noble intellects, and abounding sufficiently with riches; and where I had first an opportunity to practise what I now publish for common utility, where a great number of very beautiful fabricks are to be seen, and where there have been many gentlemen very studious in this art, who, for their nobility and excellent learning, are not unworthy to be numbered among the most illustrious; as Signor GIOVAN GIORGIO TRISSINO, the splendor of our times; the Counts MARC' ANTONIO and ADRIANO DE THIENI, brothers; Signor ANTENORE PAGELLO, Knight; and besides these, who are passed to a better life, having eternized their memory in their beautiful and most adorned fabricks, there is now Signor FABIO MONZA, intelligent in a great many things; Signor ELIO DE BELLI, son of Signor VALERIO, famous for the artifice of camei's and engraving in crystal; Signor ANTONIO FRANCESCO OLIVIERA, who, besides the knowledge of many sciences, is an architect, and an excellent poet, as he has shewn in his *Alemana*, a poem in heroic verse, and in a fabrick of his at Bolchi di Nanto, a place in the Vicentine; and lastly, (to omit many more, who might very deservedly be placed in the same rank) Signor VALERIO BARBARANO, a most diligent observer of all that belongs to this profession.

But to return to our subject: As I am to publish those labours that I have from my youth hitherto undergone, in searching and measuring (with the greatest care and diligence I could) all those antient edifices that came to my knowledge; and upon this occasion, in a few words, to treat of architecture, as orderly and distinctly as was possible for me; I thought it would be very convenient to begin with private houses, because one ought to believe, that those first gave rise to publick edifices; it being very probable, that man formerly lived by himself; but afterwards, seeing he required the assistance of other men, to obtain those things that might make him happy, (if any happiness is to be found here below) naturally sought and loved the company of other men: whereupon of several houses, villages were formed, and then of many villages, cities, and in these publick places and edifices were made.

And also because of all the parts of architecture there is none so necessary to mankind, nor that is oftener used than this, I shall therefore first treat of private houses, and afterwards of publick edifices; and shall briefly treat of streets, bridges, piazze, prisons, basiliche (which are places of justice) xisti, palestre (which are places where men exercised themselves) of temples, theatres, amphitheatres, arches, baths, aqueducts; and lastly, of the manner of fortifying cities and sea-ports.

And in all these books I shall avoid the superfluity of words, and simply give those directions that seem to me most necessary, and shall make use of those terms which at this time are most commonly in use among artificers.

And

P R E F A C E.

And because I cannot promise any more myself, (save the long fatigue, great diligence, and the love that I have bestowed to understand and practise what I now offer,) if it pleases GOD that I may not have laboured in vain, I shall heartily thank his goodness; acknowledging withal, myself obliged to those, that from their beautiful inventions, and from the experience they had, have left the precepts of such an art, because they have opened a more easy and expeditious way to the discovery of new things, and that by their means we have attained to the knowledge of many things, which perhaps had otherwise been hid.

The first part shall be divided into two books; in the first shall be treated of the preparation of the materials, and when prepared, how, and in what manner, they ought to be put to use, from the foundation up to the roof: where those precepts shall be, that are universal, and ought to be observed in all edifices, as well private as publick.

In the second I shall treat of the quality of the fabricks that are suitable to the different ranks of men: first of those of a city; and then of the most convenient situation for villa's, and in what manner they are to be disposed.

And as we have but very few examples from the antients, of which we can make use, I shall insert the plans and elevations of many fabricks I have erected, for different gentlemen, and the designs of the antients houses, and of those parts which are most remarkable in them, in the manner that VITRUVIUS shews us they were made.

E R R A T A.

PAGE 5, line 24. read *Giovanni*. l. 29. r. *Damiano*. l. 30. r. *St. Agnes*, now called *Santa Agnesa*. l. 31. r. *Numantina*. p. 6. l. ult. r. *Tefa*. p. 10. l. 18. r. *modiglious*. p. 22. l. 6. r. *dentelli* only. p. 25. l. 5. *dela may*. p. 27. l. 38. r. *Paduan*. p. 31. l. 44. r. *regolo*. p. 32. l. 1. r. *triangle*.

THE FIRST BOOK

OF

Andrea Palladio's ARCHITECTURE.

CHAPTER I.

Of the several particulars that ought to be consider'd and prepar'd before we begin to build.

GREAT care ought to be taken, before a building is begun, of the several parts of the plan and elevation of the whole edifice intended to be rais'd: For three things, according to VITRUVIUS, ought to be considered in every fabrick, without which no edifice will deserve to be commended; and these are utility or convenience, duration and beauty. That work therefore cannot be called perfect, which should be useful and not durable, or durable and not useful, or having both these should be without beauty.

AN edifice may be esteem'd commodious, when every part or member stands in its due place and fit situation, neither above or below its dignity and use; or when the *loggias*, halls, chambers, cellars and granaries are conveniently dispos'd, and in their proper places.

THE strength, or duration, depends upon the walls being carried directly upright, thicker below than above, and their foundations strong and solid: observing to place the upper columns directly perpendicular over those that are underneath, and the openings of the doors and windows exactly over one another; so that the solid be upon the solid, and the void over the void.

BEAUTY will result from the form and correspondence of the whole, with respect to the several parts, of the parts with regard to each other, and of these again to the whole; that the structure may appear an entire and compleat body, wherein each member agrees with the other, and all necessary to compose what you intend to form.

WHEN those several particulars have been duly examined upon the model or draught, then an exact calculation ought to be made of the whole expence, and a timely provision made of the money, and of those materials that shall seem most necessary, to the end that nothing may be wanting, or prevent the completing of the work. In so doing, the builder will not only be commended; but it will also be of the utmost advantage to the whole structure, if the walls are equally and expeditiously carried up: for being thus dispatch'd, they will settle proportionably, every where alike, and not be subject to those clefts so commonly found in buildings that have been finish'd at divers times.

THEREFORE, having made choice of the most skilful artists that can be had, by whose advice the work may the more judiciously be carried on, you must then provide a sufficient quantity of timber, stone, sand, lime and metals; concerning which provision I intend to lay down some very useful directions. There must also be a sufficient number of joists, to frame the floors of the halls and chambers; which ought to be dispos'd and placed in such a manner, that the distance betwixt each joist may be the width of one joist and an half when they are framed together.

YOU must likewise observe, that when the jambs of doors and windows are to be made, not to chuse stones bigger than a fifth, or less than a sixth part of the void or opening. And if you intend to adorn the building with columns or pilasters, make the bases, capitals, and architraves of stone, and the other parts of brick.

WITH respect to the walls, care must be taken, as they are raised, that they may proportionably be diminished in the thickness. Which observation, if rightly applied, may be of singular service, and enable you to make a truer estimate of the charge, and avoid great part of the expence.

BUT as I shall treat more distinctly of these several particulars under their respective heads, this general hint may suffice at present, and may serve as a sketch of the whole fabrick.

THE same regard is likewise to be had to the quality and goodness of those materials, that the best may be chosen. The experience gained from the buildings of others, will very much help to determine what is fit and expedient to be done.

AND although VITRUVIUS, LEON BAPTISTA ALBERTI, and other excellent writers, have laid down very useful rules with respect to the choice of the materials, I shall nevertheless take notice of such as are most essential, that nothing may appear to be wanting in this treatise.

CH A P. II.

OF TIMBER.

VITRUVIUS tells us, in the ninth chapter of his second book, that timber ought to be felled in autumn, or during the winter season, in the wane of the moon; for then the trees recover the vigour and solidity that in spring and summer was dispersed among their leaves and fruit. It will, moreover, be free from a certain moisture, very apt to engender worms, and rot it, which at that time will be consumed and dried up. It ought likewise to be cut but to the middle of the pith, and so left until it is thoroughly dry, that the moisture, the cause of putrefaction, may gradually distil and drop away.

WHEN fell'd, it must be laid in a proper place, where it may be shelter'd from the south sun, high winds, and rain. That of a spontaneous growth especially ought to be fully dried, and daubed over with cow-dung, to prevent its splitting. It should not be drawn through the dew, but removed rather in the afternoon; nor wrought when wet and damp, or very dry: the one being apt to cause rottenness, and the other to make clumsy work. Neither will it in less than three years be dry enough to be made use of in planks for the floors, windows, and doors.

THOSE therefore who are about to build, ought to be inform'd from men thoroughly acquainted with the nature of timber, that they may know which is fit for such and such uses, and which not.

IN the above-mention'd chapter VITRUVIUS gives many other useful directions, besides what other learned men have written upon that subject.

CH A P. III.

OF STONES.

STONES are either natural, or artificially made by the industry of men. The former are taken out of quarries, and serve to make lime (of which more hereafter) and also to raise walls. Those of which walls are commonly made, are marble and hard stone, also called live stone; or soft, and tender.

MARBLE and live stone ought to be wrought as soon as they are taken out of the quarry, which then may be done with much more ease than after they have continued some
time

time expos'd to the air. But the softer kind must be dug in summer, and placed under a proper shelter for the space of two years before they are us'd, that they may more gradually harden, being thus defended from high winds, rain, and frosts (especially when the nature of the stone is not well known, or if it be dug out of a place that never was open'd before) by which means they will be made much fitter to resist the inclemencies of the weather.

THE reason for keeping them so long is, that being sort'd, those which have receiv'd damage, may be placed in the foundations; and the others, which have not been injured, should be us'd above ground: and thus they will last a long time.

THE stones artificially made are commonly called *quadrelli*, or bricks, from their shape. These ought to be made of a chalky, whitish, and soft earth, dug up in autumn, and temper'd in winter, that, in the spring following, it may the more conveniently be work'd up into bricks; always avoiding that earth that is over fat or sandy. But if necessity obliges to make them in the winter or summer time, they must carefully be cover'd during the former season with dry sand, and in the latter with straw. When made, they require a long time to dry; for which reason a good shelter is the most proper place, to cause the outside and inside to dry or harden equally, which can't be accomplished in less than two years.

AND as bricks are made either larger or smaller, according to the quality of the building, and their intended use; so the antients made them larger for publick and great buildings than for small and private ones; and therefore holes ought to be made here and there through the larger, that they may dry and burn the better.

CH A P. IV.

OF SAND.

THERE are three sorts of sand commonly found; pit, river, and sea sand. The best of all is pit sand, and is either black, white, red, or ash-colour'd; which last is a kind of earth calcined by subterraneous fires pent up in the mountains, and taken out of pits in *Tuscany*.

THEY also dig out of the earth in *Terra di Lavoro*, in the territories of *Baia* and *Cuma*, a sort of sand, called *Pozzolana* by *VITRUVIUS*, which immediately cements in the water, and makes buildings very strong. But long experience has shewn, that of all the several kinds of pit sand, the white is the worst. The best river sand is that which is found in rapid streams, and under water-falls, because it is most purged. Sea sand, although the worst, ought to be of a blackish colour, and shine like glass: that which is large grained, and nearest to the shore, is best. Pit sand, being fattest, makes, for that reason, the most tenacious cement, and is therefore employ'd in walls and long vaults; but it is apt to crack.

RIVER sand is very fit for covering and rough-casting of walls. Sea sand soon wets and soon dries, and wastes by reason of its salt, which makes it very unfit to sustain any considerable weight.

EVERY kind of sand will be good that feels crisp when handled, and, if laid upon white clothes, will neither stain or leave earth behind it. But that sand is bad, which, being mix'd with water, makes it turbid and dirty: As also such as has remain'd a long while expos'd to the weather; for then it will contain so much earth and corrupt moisture, that it will be apt to produce shrubs and wild fig-trees, which are very prejudicial to buildings.

CH A P. V.

Of LIME, and of the method of working it into mortar.

THE stones of which lime is made, are either dug out of hills, or taken out of rivers. All those taken out of hills are good where dry, brittle, free from moisture, or the mixture of any substance, which being consumed by the fire, diminishes the stone. That lime will therefore

therefore be best which is made of the most hard, solid, white stone, and which, being burnt, is left a third part lighter than the stone of which it was made.

THERE is also a spongy sort of stone, the lime of which is very good for covering and rough-casting of walls; likewise a scaly rugged stone, taken out of the hills of *Padua*, that makes an excellent lime for such buildings as are most exposed to the weather, or stand under water, because it immediately sets, grows hard, and is very lasting.

ALL stones taken out of the earth are much better to make lime of, than those which are collected; and rather taken from a shady moist pit, than from a dry one. The white are better than the brown, as being the most easily work'd. The pebbles found in rivers and rapid streams, are excellent for lime, and make very white neat work; therefore it is chiefly used in the rough-casting of walls. All stones, either dug out of the hills or rivers, burn quicker or slower, in proportion to the fire given them, but are generally calcined in sixty hours. When calcined, they must be wetted, in order to slack them; observing not to pour on the water all at once, but at several times, to prevent its burning before it be well-tempered, and afterwards must be laid in a moist shady place, only covering it lightly with sand, taking care not to mix any thing with it; and when used, the more it is work'd up with the sand, the better it will cement; except that made of a scaly stone, like that from *Padua*, because that must be used as soon as it is slacked, to prevent its burning and consuming away; it will otherwise be useless.

To make mortar, lime should be mix'd with sand in this proportion; three parts of pit sand to one of lime, and but two of sea or river sand to one of lime.

C H A P. VI.

O F M E T A L S.

THE metals commonly employ'd in buildings, are iron, lead, and copper. Iron serves to make nails, hinges, bars, gates, bolts for fastenings, and such like works.

THERE is no iron any where found pure; nor any, when taken out of the earth, but must first be melted, and then purged of its dross by the fire, to make it fit for use. For then it will easily be made red-hot, will be soft enough to be wrought, and spread under the hammer; but cannot so easily be melted again, except it is put into a furnace made for that purpose: And if not well hammer'd when red-hot, it will burn and waste away.

IT is a sign the iron is good, if, when reduced into bars, you see the veins run streight and uninterrupted, and that the ends of the bars be clean and without dross: For these veins will shew that the iron is free from lumps and flaws; by the ends we may know the goodness of the middle; and, when wrought into square plates, or any other shape, if its sides are streight and even, we may conclude it is equally good in all its parts, as it has equally in every part endured the hammer.

MAGNIFICENT palaces, churches, towers, and other publick edifices, are generally covered with lead. The pipes and gutters to convey the water, are also made of the same. It likewise serves to fasten the hinges and iron-work in the jambs of doors and windows. The three sorts of lead usually found, are the white, black, and that of a colour between both, by some called ash-colour'd. The black is so called, not because it is really such, but because it is intermix'd with some blackness; therefore the antients, to distinguish it from the white, gave it very properly that name. The white is much more perfect, and of greater value than the black. And the ash-colour'd holds the middle rank betwixt both.

LEAD is either taken out of the earth in a great mass, without any mixture, or in small, shining, blackish lumps; and is sometimes found sticking in small flakes to the rocks, to marble, and to stones. All the different sorts melt very easily, because the heat of the fire liquifies it before it can be made red-hot; and if thrown into an extreme hot furnace, it will not preserve its substance, but be converted into litharge and dross. Of the three sorts the black is the softest and most weighty, and therefore will easily spread under the hammer. The white is harder and lighter. The ash-colour'd is much harder than the white, and is of a middle weight between both.

PUBLIC buildings are sometimes cover'd with copper; and the antients also made nails and cramps thereof, which were fix'd in the stone below, and to that above, to unite and tie them together, and prevent them from being pushed out of their place. And by means of these nails and cramps, a building, which can't possibly be made without a great number of pieces of stone, is so join'd and fix'd together, that it appears to be one entire piece, and for the same reason is much stronger and more durable.

THESE nails and cramps were likewise made of iron; but the antients most commonly made them of copper, because it is less subject to rust, and consequently will last much longer. The Letters for inscriptions, that were placed in the frizes of buildings without, were made of copper; and history informs us, that the hundred famous gates of *Babylon*, and *HERCULES'* two pillars, eight cubits high, in the island of *Gades*, were also made of that metal.

THE best and most excellent copper is that which is extracted and purged from the ore by fire. If it is of a red colour, inclining to yellow, well-grained, and full of pores, we may then be pretty certain it is freed from dross.

COPPER will heat red-hot in the fire, like iron, and so liquify that it may be cast. If thrown into an extreme hot furnace, it will not endure the flames, but totally consume and waste away. Although it be hard, it will nevertheless bear the hammer, and may be wrought into very thin plates. The best method to preserve it is to dip it into tar; for tho' it does not rust like iron, yet it has a peculiar rust, called verdigrease, especially if it be touched with any sharp liquor.

THIS metal mix'd with tin, lead and brass (which last is only copper coloured with *lapis calaminaris*) makes bronze, or bell-metal, which is often used by architects in making bases, columns, capitals, statues, and such-like ornaments. There are to be seen in the church of *St. Giovanni Laterano* in *Rome* four brass columns (one of which only has its capital) made by the order of *AUGUSTUS* of the metal that was found in the prows of those ships he had taken in *Egypt* from *MARK ANTHONY*.

THERE also remains in *Rome* to this day four antient gates; *viz.* the *Rotunda*, formerly the *Pantheon*; that of *St. Adriano*, formerly the temple of *SATURN*; that of *St. Cosmo* and *St. Domiano*, formerly the temple of *CASTOR* and *POLLUX*, or rather of *ROMULUS* and *REMUS*; and that of *St. Agnas*, now called *St. Agnese*, without the gate *Viminalis sive la via Numentana*.

THE most beautiful of these is that of *Santa Maria Rotunda*; wherein the antients endeavoured to imitate by art that sort of *Corinthian* metal in which the natural colour of gold did mostly predominate: For we read, that when *Corinth*, now called *Coranto*, was burnt and destroy'd, the gold, silver, and copper were melted and united into one mass, which was so temper'd and mix'd together, that it compos'd the three sorts of brass afterwards called *Corinthian*. In the first, silver prevailed, of which it retained the whiteness and lustre; the second, as it partook more of the gold, retained mostly its yellow colour; the third was that in which all the three metals were pretty equally mix'd. All these have afterwards been imitated by various workmen.

HAVING sufficiently explained the several particulars and materials most necessary to be consider'd and prepared before we begin to build; it is proper, in the next place, to say something of the foundations, since it is from them the whole work must be rais'd.

CH A P. VII.

Of the qualities of the ground where foundations ought to be laid.

THE foundations are properly called the basis of the fabrick, *viz.* that part of it under ground which sustains the whole edifice above; and therefore of all the errors that can be committed in building, those made in the foundation are most pernicious, because they at once occasion the ruin of the whole fabrick, nor can they be rectified without the utmost difficulty.

difficulty. For which reason the architect should apply his utmost diligence in this point; inasmuch as in some places there are natural foundations, and in other places art is required.

WE have natural foundations when we build on a chalky soil, which in some degree resembles stone*; for these, without digging or any other assistance from art, are of themselves very strong and sufficient foundations, and capable to sustain any great edifice, either on land or in water.

BUT when nature does not furnish foundations, then art must be made use of; because the places to build on are sometimes either solid ground, gravel, sand, or a moist and marshy soil. Where it is solid, the foundation need be no deeper than what the quality of the building, and the solidity of the ground shall require (according as the judicious architect shall think proper) and must not exceed the sixth part of the height of the whole edifice, if there are no cellars or subterraneous offices wanted.

OBSERVATIONS made in digging of wells, cisterns, and such like, are of great use, and very much help us to know the solidity of the ground; as do also the herbs that spontaneously grow thereon, especially if they are such as spring up only in a hard and firm soil. The solidity may likewise be known by throwing a great weight upon the earth, provided it neither shakes or rebounds (which may easily be observed by the help of a drum set upon the ground, if the percussion only gently moves it, without making it sound, or without moving the water in a vessel set near it:) It may also be judged of by the adjacent places.

BUT when the place is either sandy or gravelly, regard must be had whether it be on land or in the water. If it be on land, that only is to be observed which has before been said concerning dry ground. But if buildings are to be in rivers, the sand and gravel will be altogether useless; because the water, by its continual current and flood, is always shifting their bed: We must therefore dig until a firm and solid bottom be found. If that cannot easily be done, let some of the sand and gravel be taken out, and then piles, made of oak, must be driven in, until their ends reach the solid ground, upon which one may build.

BUT if a building is to be raised upon a boggy soil, then it must be dug out, until firm ground be come at, and so deep therein as is in proportion to the thickness of the walls, and the largeness of the fabrick.

SOUND and firm soils, fit to sustain buildings, are of various kinds: For, as ALBERTI well observes, in some places the soil is so hard, that iron can scarce cut its way into it, and sometimes still harder; in others blackish or whitish, which is esteem'd the weakest; some are like chalk, or otherwise soft: But the best is that which is cut with the most labour, and when wet does not dissolve into mud.

No buildings should be erected on ruins before their depth is first known, and whether they are sufficient to sustain the edifice.

WHEN the ground is soft, and sinks very much, as it commonly does in bogs, then piles are to be used, whose length ought to be the eighth part of the height of the walls, and their thickness the twelfth part of their length. The piles are to be driven so close to one another, as not to leave space for others to come in between. Care must also be taken to drive them rather with blows frequently repeated, than such as are violent; that so the earth may bind the better to fasten them.

THE pilings are to be not only under the outside walls, which are placed upon the canals; but also under those which are placed on the earth, and divide the fabrick: For if the foundations of the middle walls are made different from those on the outside, it will often happen, that when the beams are placed by each other in length, and the others over them crossways, the inside walls will sink, and the outside ones, by being piled, will remain unmov'd; which, besides its being very disagreeable to the sight, will occasion all the walls to open, and ruin the whole edifice. This danger therefore is to be avoided by a trifling expence in piling; for according to the proportion of the walls, the piles in the middle will be smaller than those for the outside.

* There are strictly no proper words in *English* for *Tufa* or *Scaranto*.

CHAP. VIII.

Of foundations.

FOUNDATIONS ought to be twice as thick as the wall to be built on them; and regard in this should be had to the quality of the ground, and the largeness of the edifice; making them greater in soft soils, and very solid where they are to sustain a considerable weight.

THE bottom of the trench must be level, that the weight may press equally, and not sink more on one side than on the other, by which the walls would open. It was for this reason the antients paved the said bottom with *Tivertine*, and we usually put beams or planks, and build on them.

THE foundations must be made sloping, that is, diminished in proportion as they rise; but in such a manner, that there may be just as much set off on one side as on the other, that the middle of the wall above may fall plumb upon the middle of that below: Which also must be observed in the setting off of the wall above ground; because the building is by this method made much stronger than if the diminutions were done any other way.

SOMETIMES (especially in fenny places, and where columns intervene) to lessen the expence, the foundations are not made continued, but with arches, over which the building is to be.

IT is very commendable in great fabricks, to make some cavities in the thicknes of the wall from the foundation to the roof, because they give vent to the winds and vapours, and cause them to do less damage to the building. They save expence, and are of no little use if there are to be circular stairs from the foundation to the top of the edifice.

CHAP. IX.

Of the several sorts of walls.

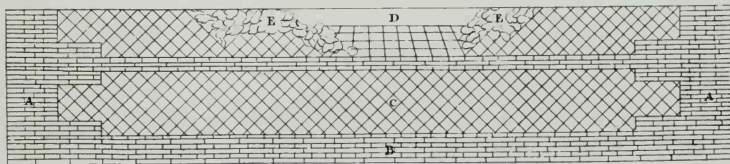
THE foundations being laid, we are next to treat of the upright wall above ground.

THE antients had six sorts of walls: The first called *reticulata*; the second of baked earth, or square bricks; the third of rough stones, either from mountains or rivers; the fourth of irregular stones; the fifth of squared stones; the sixth called *riempiuta*.

THE first, called *reticulata*, is not in use in our time; but because VITRUVIUS mentions its being commonly used in his, I have given a draught of it.

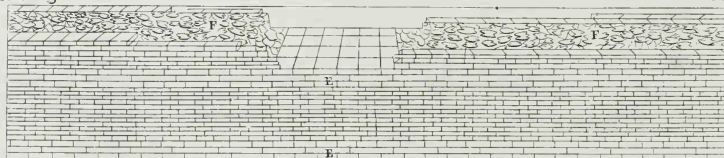
THEY made the corners or angles of the building of bricks; and between every two foot and a half, three courses of square bricks were laid, which bound the thicknes of the wall together.

Plate I



- A, the angles made of brick.
- B, courses of bricks that bind the whole wall.
- C, the net-work.
- D, courses of bricks through the thicknes of the wall.
- E, the inner part of the wall, made of cement.

THE brick walls of a city, or any other great building, should be made with square bricks on both sides, and the middle filled up with cement and pounded bricks. To every three foot in height there must be three courses of larger bricks than the others, which take the whole thickness of the wall. The first course must be with headers, that is, the smallest end of the brick outwards; the second longway, or stretchers; and the third headers again. After this manner are the walls of the *Rotunda*, the baths of *Dioclesian*, and all the antient buildings that are at *Rome*.

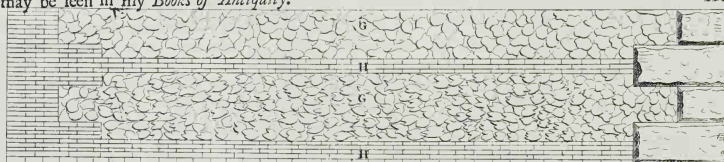


E, the courses of bricks that bind the whole wall.

F, the middle part of the wall, made of cement, between the several courses and the outward bricks.

THE walls built of cement must be so made, that to every two foot, at least, there may be three courses of bricks, placed according to the method above-mentioned. Thus in *Piedmont* are the walls of *Turin*, which are built with large river-pebbles, split in the middle, and placed in the wall with the split-side outwards, making the work very upright and even.

THE walls of the *arena*, or amphitheatre, in *Verona*, are also of cement, and at every three feet distance are three courses of bricks. In like manner are other antient fabricks made, as may be seen in my *Books of Antiquity*.



G, cement, or river-pebbles.

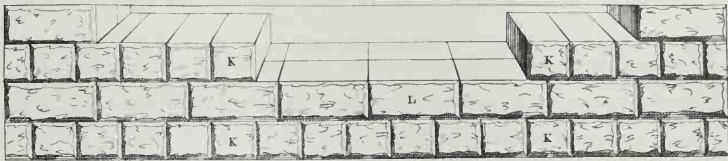
H, courses of bricks, that bind the whole wall.

THOSE walls were said to be uncertain, which were made of stones of unequal angles and sides. To make those walls they used a squaring rule of lead, which being bent where the stone was to be placed, served them in squaring it. This they did that the stones should join well together, and that they might not be obliged to make frequent tryals whether the stone was rightly placed. There are seen at *Prænestæ* walls after this manner; and the antient roads and streets were thus paved.



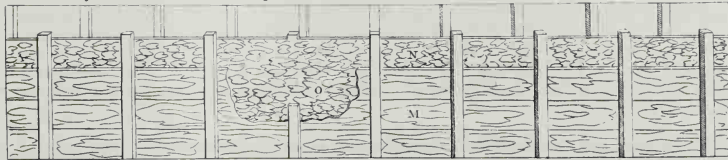
I, irregular or rough stones.

WALLS may be seen, built with squared stones, at *Rome*, where stood the piazza and the temple of *AUGUSTUS*, in which the lesser stones are key'd in with some courses of the larger.



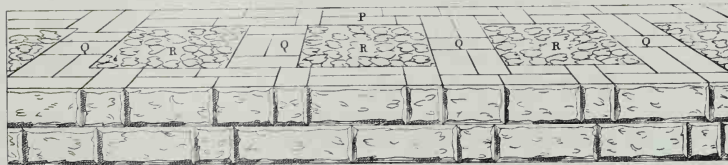
K, courses of the lesser stones.
L, courses of the larger stones.

THE method the antients made use of to build the walls called *riempiuta*, or coffer-work, was by placing two rows of planks edgeway, distant the one from the other according to the thickness they intended to give the walls, and then filled the void with cement, mix'd with all kinds of stones, and continued it in this manner from course to course. Walls of this kind may be seen at *Sirmion*, upon the lake of *Garda*.



M, planks laid edgeway.
N, inward part of the wall.
O, face of the wall, the planks being taken away.

THE walls of *Naples*, that is, the antient ones, may be said to be after this manner; which have two walls of squared stones, four foot thick, and six foot distant the one from the other, bound together with others that run cross them. The coffers that remain between the traverse and out-walls are six foot square, which are filled up with stones and earth.



P, the outward stone walls.
Q, the transverse stone walls to bind them together.
R, the coffers, filled with stones and earth.

THESE, in fine, are the different sorts of walls the antients made use of, footsteps of which still remain: From which we may conclude, that all walls, let them be of what kind soever, ought to have some cross courses, as so many ligaments to bind all the other parts together. This must particularly be observed in brick walls, that, should the middle of the walls, through length of time, sink or decay, the rest may not be subject to ruin; as we see happens in many walls, particularly on the side facing the north.

C H A P. X.

Of the method observed by the antients in erecting stone edifices.

AS it sometimes happens that an edifice is either to be in part or entirely built with marble or with large pieces of other stone, it seems reasonable that I should in this place mention what method the antients observed on such occasions; because it appears in their works, such exact care was taken in the joining of their stones, that the junctures in many places are scarce to be discerned, to which every one ought to be very attentive, who, besides beauty, desires the solidity and duration of the fabrick.

BUT as far as I could ever comprehend, they first wrought and squared those sides of the stones that were to be laid upon one another, leaving the other sides rough, and thus employ'd them in the building: For as the edges were then thicker and stronger, they could the more conveniently manage and move them backwards and forwards, until they were placed and well united together, with less danger of breaking them than if all the sides had been squared and polished, which would have made them too thin, and consequently more apt to be spoiled.

AND in this manner they built rough or rustick edifices; and when thus finished, they then polished all those sides of the stones that were exposed to view. As the roses between the modillions, and the other ornaments carved in the cornice, could not however be so conveniently made after the stones were fix'd, these were work'd whilst they lay upon the ground. This is manifest by the many stones found unwrought and unpolished in a great many antient buildings.

THE arch near the old castle in *Verona*, and all the other arches and antient edifices in that place, are made after the same manner; which is very perceptible to any one that will take notice of the marks the tools have made upon the stones, which plainly shew how they were wrought. The *Trajan* column in *Rome* and the *Antonine* were made in this manner; it would have been otherwise impossible to fix the stones so exactly as to make the joints meet so close together athwart the heads and other parts of the figures. The same may also be said of the other arches that are seen there.

WHEN the antients had any very large fabrick to build, such as the *Arena* in *Verona*, the amphitheatre of *Pola*, or any other of that kind, to save time and expence, they only wrought the imposts of the arches, the capitals and cornices, leaving all the rest rustick, having a regard only to the beautiful form of the whole edifice.

BUT in temples, and other structures that require more delicacy, they were not sparing of their labour in working of them; but smoothed and polished, even to the very flutes of the columns, with the utmost care and accuracy.

BUT it is my opinion, that brick walls ought never to be made rustick; nor the mantles of chimneys, which require to be wrought very neat: For, besides being there misapplied, it would follow, that a work, which naturally ought to be one entire piece, would appear to be divided into several parts. But, according to the largeness and quality of the building, it may either be made rustick or very neat; for what the antients judiciously practised (being thereto compelled by the largeness of their structures) must not be imitated by us in buildings in which neatness is particularly required.

C H A P. XI.

Of the diminution of walls, and of their several parts.

IT ought to be observed, that walls should diminish in proportion as they rise; therefore those which appear above ground must be but half as thick as the walls in the foundations; those of the second story half a brick thinner than the walls of the first; and in this manner to the top of the building; but with discretion, that the upper part be not too thin.

THE middle of the upper walls ought to fall directly upon the middle of the lower, which will give the whole wall a pyramidal form. But when you are willing to make the superficies or face of the upper walls to fall directly upon the lower, it must be done towards the inside of the building; because that the floors, beams or rafters, vaults, and other supports of the fabrick, will keep them from falling or giving way.

THE discharged part, or set-off, which is on the outside, may be covered with a fascia and a cornice; which, surrounding all the building, will be both an ornament, and a kind of bond to the whole. And because the angles partake of the two sides, in order to keep them upright, and united together, they ought to be made very strong and solid with long hard stones, holding them as it were with arms.

THE windows, and other openings, ought to be as far distant from the angles as possible; or at least so much space must be left between the aperture and the angles as the width of the opening or void.

HAVING thus treated of plain walls, we shall next consider their ornaments; among which none are more considerable than columns, when they are properly placed, and in a just proportion to the whole edifice.

C H A P. XII.

Of the five orders made use of by the antients.

THE Tuscan, Dorick, Ionick, Corinthian, and Composite, are the five orders made use of by the antients. These ought to be so disposed in a building, that the most solid may be placed undermost, as being the most proper to sustain the weight, and to give the whole edifice a more firm foundation: Therefore the Dorick must always be placed under the Ionick; the Ionick under the Corinthian; and the Corinthian under the Composite.

THE Tuscan being a plain rude order, is therefore very seldom used above ground, except in villas, where one order only is employ'd. In very large buildings, as amphitheatres, and such like, where many orders are required, this, instead of the Dorick, may be placed under the Ionick.

BUT if you are desirous to leave out any of these orders, as, for instance, to place the Corinthian immediately over the Dorick, you may, provided you always observe to place the most strong and solid undermost, for the reasons above-mention'd.

THE measures and proportions of each of these orders I shall separately set down; not so much according to VITRUVIUS, as to the observations I have made on several antient edifices. But I shall first mention such particulars as relate to all of them in general.

C H A P. XIII.

Of the swelling and diminution of columns, and of the intercolumniations and pilasters.

THE columns in each order ought to be form'd in such a manner, that the diameter of the upper part of the column may be smaller than at the bottom, with a kind of a swelling in the middle.

IT is to be observed in the diminutions, that the higher the columns are, the less they must diminish; because the height, by reason of the distance, has that effect.

THEREFORE, if the column be fifteen foot high, the thickness at the bottom must be divided into six parts and a half, five and a half of which will be the thickness for the top. If from fifteen to twenty foot high, divide the diameter at the bottom into seven parts, and six and a half will be the diameter above. The same must also be observed in those from twenty to thirty foot high; the lower diameter of which must be divided into eight parts, and seven given to the upper. And so in proportion, columns of a greater altitude ought in the same manner to be diminished, as VITRUVIUS tells us in the second chapter of his third book.

As to the manner of making the swelling in the middle, we have no more to shew from VITRUVIUS but his bare promise; which is the reason that most writers differ from one another upon that subject.

THE method I use in making the profile of the swellings is this; I divide the fust of the column into three equal parts, and leave the lower part perpendicular; to the side of the extremity of which I apply the edge of a thin rule, of the same length, or a little longer than the column, and bend that part which reaches from the third part upwards, until the end touches the point of the diminution of the upper part of the column under the *collarino*. I then mark as that curve directs, which gives the column a kind of swelling in the middle, and makes it project very gracefully.

AND although I never could imagine a more expeditious and successful method than this, I am nevertheless confirmed in my opinion, since Signor PIETRO CATANEO was so well pleased when I told him of it, that he gave it a place in his Treatise of Architecture, with which he has not a little illustrated this profession.

A B, the third part of the column, which is left directly perpendicular.

B C, the two thirds that are diminished.

C, the point of diminution under the collarino.

THE intercolumniations, or the spaces between the columns, may be of one diameter and a half of the column (the diameter being taken at the lowest part of the column.) They also may be of two, two and a quarter, three, or more diameters; but the ancients never allow'd more to these spaces than three times the diameter of the column, except in the Tuscan order, where the architrave was made of timber, the intercolumniations were then very large. Neither did they ever allow less than one diameter and a half, which was the distance they usually observ'd, especially when the columns were very high.

BUT, above all other, they approved of those intercolumniations that were of two diameters and a quarter; and they reckon'd this a beautiful

beautiful and elegant manner of intercolumniation. And it ought to be observed, that there should be a proportion and correspondence between the intercolumniations or spaces, and the columns; because if small columns are placed in the larger spaces, the greatest part of their beauty will be taken away, by the quantity of air, or the vacuity between the spaces, which will diminish much of their thicknes. On the contrary, if large columns are placed in small intercolumniations, the straitness or narrowness of the spaces will make them appear clumsy, and without grace. Therefore if the spaces exceed three diameters, the thicknes of the columns ought to be a seventh part of their height; as I have observed in the following Tuscan order.

BUT if the spaces are three diameters, the columns ought to be seven and a half or eight diameters high; as in the Dorick order: If two and a quarter, the height of the columns must be nine diameters; as in the Ionick: If but two, the height of the columns should be nine diameters and a half; as in the Corinthian: And, lastly, if of one diameter and a half, the height of the columns must be ten; as in the Composite. In which orders I have taken this care, that they may serve as an example for the different intercolumniations mention'd by VITRUVIUS in the aforesaid chapter.

AN even number of columns ought always to be placed in the fronts of edifices, that an intercolumniation may be made in the middle somewhat larger than the others, that the doors and entries, usually placed in the middle, may be the better seen. And this is sufficient as to simple colonades.

BUT if loggia's are made with pilasters, they ought to be so disposed, that the thicknes of the pilasters be not less than one third of the void or space between pilaster and pilaster; and the thicknes of those placed in the corners to be two thirds of the said space, that so the angles of the fabrick may be both strong and solid.

AND when they are to sustain an exceeding great weight, as in very large buildings, they ought then to be made as thick as half the void, like those of the theatre of *Vicenza*, and the amphitheatre at *Capua*; otherwise their thicknes may be two thirds of the said space, as those of the theatre of *Marcellus* at *Rome*, and that of *Ogubio*, now in possession of Signor LUDOVICO DE GABRIELLI, a gentleman of that city.

THE antients sometimes made them as thick as the whole void, as those are in that part of the theatre of *Verona* which is not upon the Mountain. But in private buildings they must not be less in thicknes than the third part of the void, nor more than the two thirds, and ought to be square. But to lessen the expence, and to make the place to walk in larger, they may be made less thick in the flank than front, to adorn which, half columns and pilasters may be placed in the middle, to support the cornice over the arches of the loggia's, whose thicknes must be proportionable to their height, according to each order; as may be seen in the following chapters and designs.

FOR the better understanding of which, and to avoid my repeating the same thing often, it is to be observed, that in the dividing and measuring the said orders, I would not make use of any certain and determinate measure peculiar to any city, as a cubit, foot, or palm, knowing that these several measures differ as much as the cities and countries; but imitating VITRUVIUS, who divides the Dorick order with a measure taken from the thicknes or diameter of the columns, common to all, and by him called a module, I shall therefore make use of the same measure in all the orders.

THE module shall be the diameter of the column at bottom, divided into sixty minutes; except in the Dorick Order, where the module is but half the diameter of the column, divided into thirty minutes, because it is thus more commodious in the divisions of the said order.

FROM whence every one may, by either making the module greater or less, according to the quality of the building, make use of the proportions and profiles belonging to each order.

CHAPTER. XIV.

Of the TUSCAN ORDER.

THE Tuscan order, according to VITRUVIUS, and as in effect it appears, is the most simple and plain of all the orders in architecture; because it retains something of the former antiquity, and is deprived of those ornaments that make the others so slightly and beautiful.

IT was first invented in *Tuscany*, a most noble part of *Italy*, from whence its name is derived.

THE columns, with their base and capital, ought to be seven modules in height, and to be diminished at top a fourth part of their thickness.

IF simple colonades are made of this order, the spaces or intercolumniations may be very wide, because the architraves are made of wood, which will therefore be very commodious for villa's, because it admits of passage for carts, and other country implements, besides being of little expence.

BUT if gates or loggia's with arches are to be made, then the measures marked in the design are to be used in which the stones are bonded, as I think they ought to be. I have also been mindful of this in the designs of the other four orders. And this way of disposing and bonding the stones I have taken from many ancient arches; as will be seen in my *Book of arches*; and in this I have used great diligence.

A, the architrave of wood.

B, the joists which form the corona or drip.

THE pedestals placed under the columns of this order are to be made plain, and one module in height. The height of the base is half the diameter of the column; and this height is to be divided into two equal parts, one to be given to the plinth, which is made with the compass, and the other divided into four parts, one to be given to the fillet, also called the *cimbria*, which may sometimes be made less, and in this order only is part of the base, which in all the other is part of the column; the other three parts are for the *torus* or *baftone*. The projection of this base is the sixth part of the diameter of the column.

THE height of the capital is half the diameter of the lower part of the column, and is divided into three equal parts; one is given to the *abaco*, (which from its form is usually called the *dado*) the other to the *ovolo*, and the third is divided into seven parts; of one the fillet under the *ovolo* is made, and the remaining six are for the *collarino*. The height of the astragal is double that of the listello or fillet under the *listello*, and its center is made upon the line that falls perpendicularly upon the said listello, upon which also falls the projection of the *cimbria*, which is as thick as the listello.

THE projection of this capital answers to the shaft of the column below; the architrave is made of wood, equal in height as in width, and not to exceed in width the shaft of the column at top. The projection of the joists that form the *gronda* or drip, is a fourth part of the length of the column.

THESE are the measures of the Tuscan order, according to VITRUVIUS.

A, *Abaco*.

B, *Ovolo*.

C, *Collarino*.

D, *Astragal*.

E, the shaft of the column at top.

F, the shaft of the column below.

G, *Cimbria* or *Cincture*.

H, *Toro* or *Baftone*.

I, *Orlo*.

K, *Pedestal*.

THE profiles placed near the plan of the base and capital are the imposts of the arches.

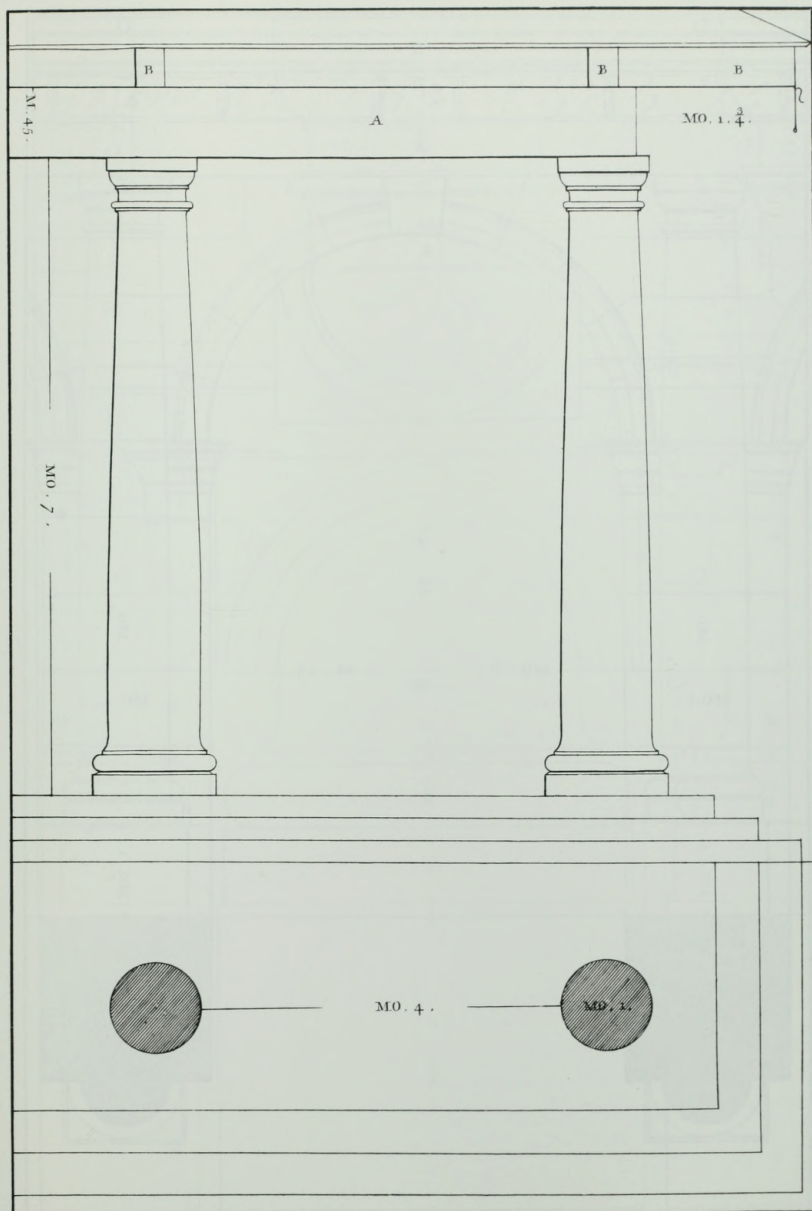
BUT

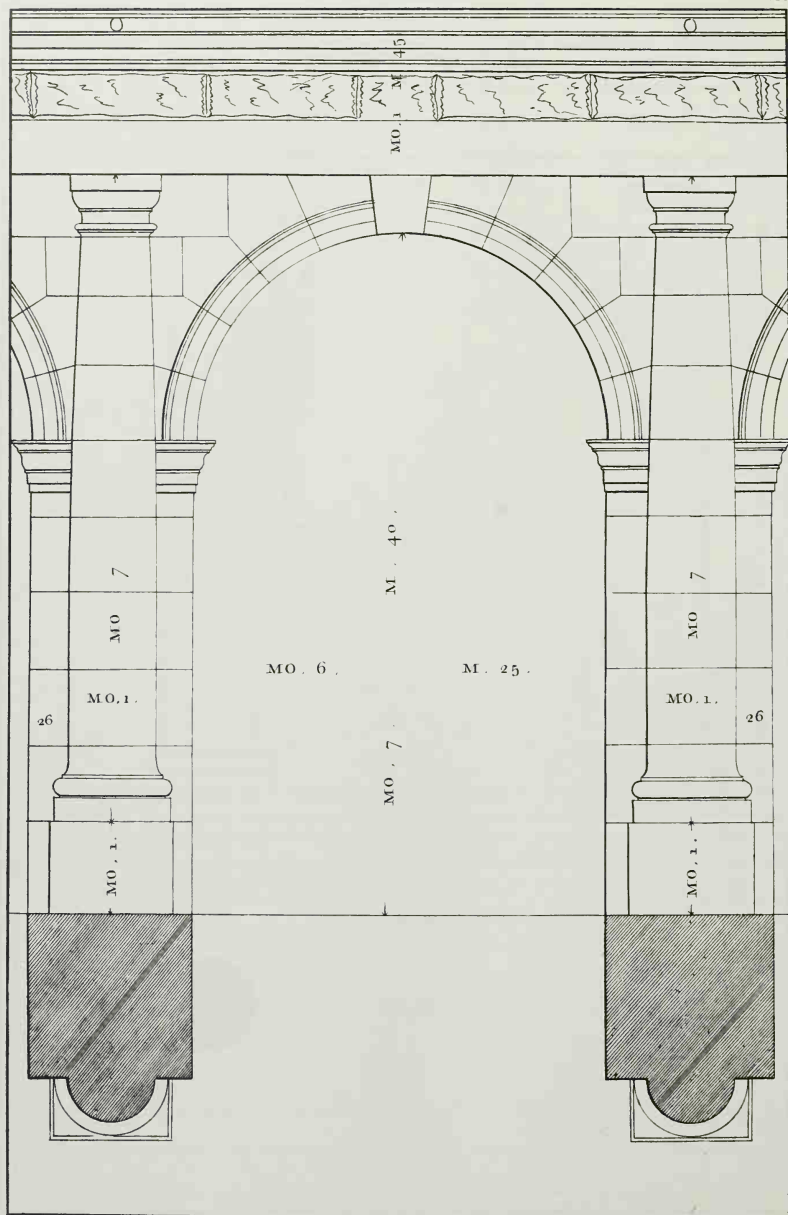
BUT when the architraves are to be made of stone, then what has been said before, with respect to the intercolumniations, must be observed.

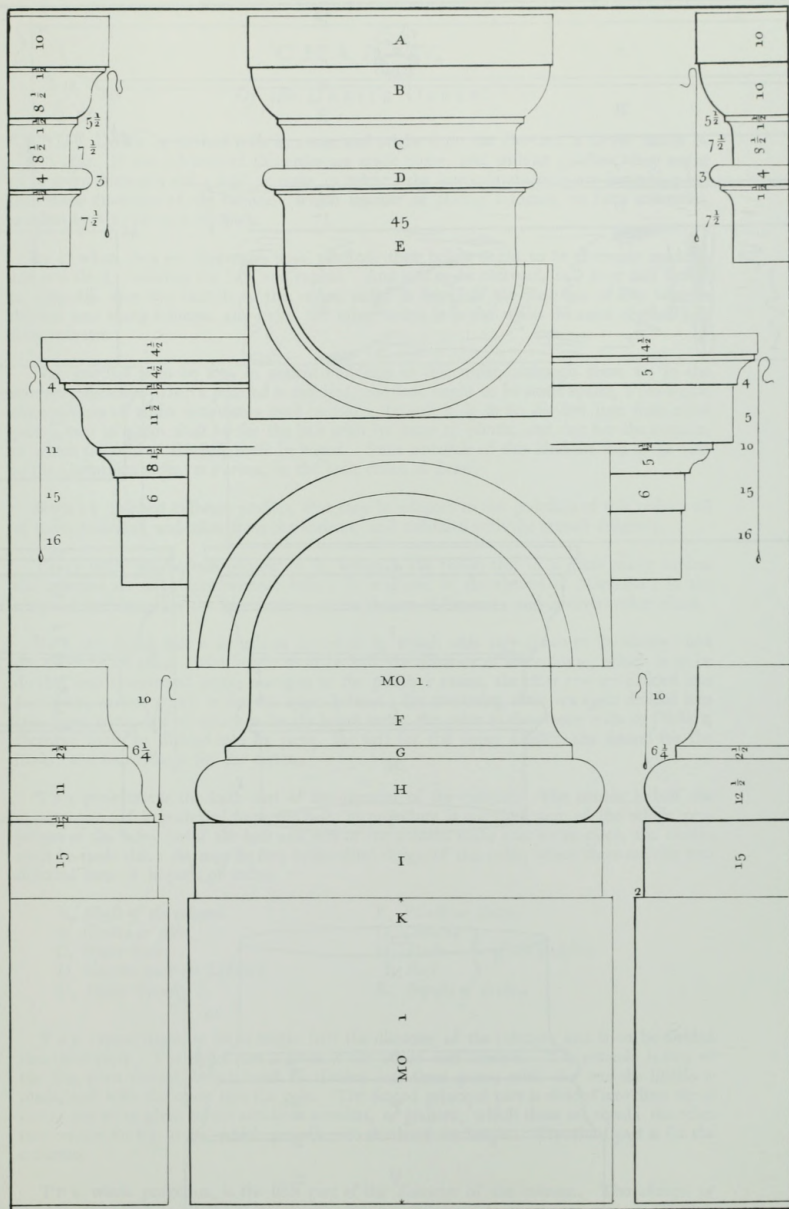
THERE are antient buildings still to be seen, which, as they partly retain the same measures, may be said to have been formed of this order, like the arena of *Verona*, the arena and theatre of *Pola*, and many others; from which I have taken the profiles of the base, capital, architrave, frieze, and cornices, placed upon the last plate of this chapter, as also those of the impost of arches, and shall insert the designs of all these several edifices in my *books of antiquity*.

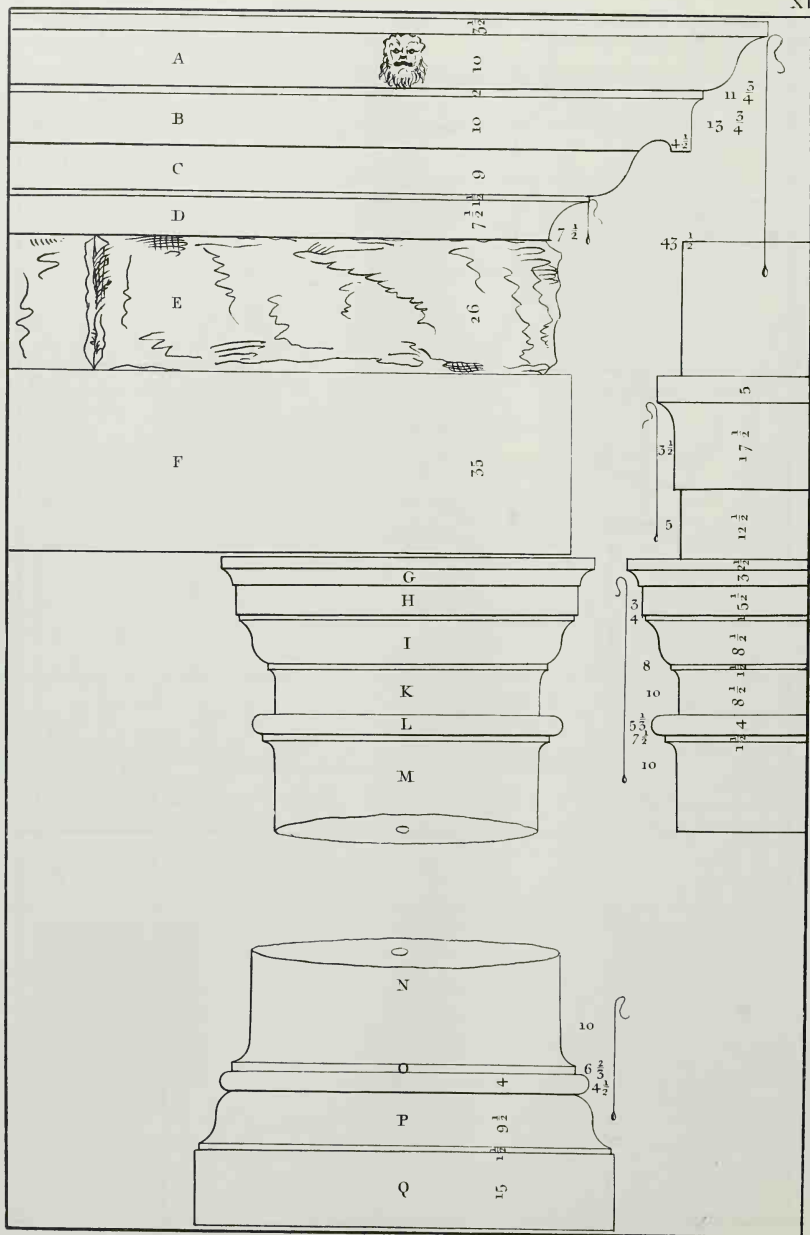
A, <i>Gola diritta.</i>	L, <i>Astragal.</i>
B, <i>Corona.</i>	M, <i>Shaft of the column under the capital.</i>
C, <i>Gocciolatrio e Gola diritta.</i>	N, <i>Shaft of the column at bottom.</i>
D, <i>Cavetto.</i>	O, <i>Cimbia of the column.</i>
E, <i>Fregio, or frieze.</i>	P, <i>Bastone and Gola,</i>
F, <i>Architrave.</i>	<i>or Torus</i>
G, <i>Cimacio</i>	} <i>of the base.</i>
H, <i>Abaco</i>	
I, <i>Gola diritta</i>	Q, <i>Orlo</i>
K, <i>Collarino.</i>	

DIRECTLY opposite to the architrave marked F, there is the profile of an architrave formed with more delicacy.









CHAP. XV.

Of the DORICK ORDER.

THE Dorick order had both its name and origin from the *Dorians*, a *Greek* nation in *Asia*. If the columns of this order are made alone, and without pilasters, they ought to be seven diameters and a half or eight in height: the intercolumniations are something less than three diameters of the column; which manner of placing columns, to form colonades, is called by *VITRUVIUS* *diastilo's*.

BUT when they are supported with pilasters, their height ought to be seventeen modules and one third, including the base and capital. And it is to be observed, as I have said before in *chap. xiii.* that the module in this order, only, is but half the diameter of the column divided into thirty minutes, and in all the other orders it is the whole diameter divided into sixty minutes.

NO pedestal is to be seen in antient buildings to this order, although there are in the modern; therefore when a pedestal is required, the dado ought to be made square, from which the measures of all its ornaments must be taken, because it is to be divided into four equal parts; two of them shall be for the base with its *zocco* or plinth, and one for the cimacia, to which the orlo of the base must be joined. Some pedestals of this kind are still to be seen in the Corinthian order, at *Verona*, in the arch called *de Leoni*.

I HAVE inserted different profiles, that may be adapted to the pedestals of this order; all of them beautiful, and taken from the antients, and measured with the utmost diligence.

THIS order has no base peculiar to it, which is the reason that in a great many edifices the columns are to be seen without bases: As at *Rome*, in the theatre of *Marcellus*; in the temple of *la Pietà*, near the said theatre; in the theatre of *Vicenza*; and in divers other places.

BUT the Attick base is sometimes joined to it, which adds very much to its beauty; and the measures are thus. The height must be half the diameter of the column, which is to be divided into three equal parts; one goes to the plinth or *zocco*, the other two are divided into four parts, one of which is for the upper bastone; the remaining three are again divided into two equal parts, one of which is for the lower torus, the other to the cavetto with its listello's, therefore must be divided into six parts, the first for the upper listello, the second for the lower, and four remain for the cavetto.

THE projecture is the sixth part of the diameter of the column. The cimbia is half the upper torus. If it is divided from the base, its projecture is one third part of the whole projecture of the base; but if the base and part of the column make one entire piece, the cimbia must be made thin: As may be seen in the third design of this order, where there are also two different sorts of imposts of arches.

A, *Shaft of the column.*

B, *Cimbia or fillet.*

C, *Upper Torus.*

D, *Cavetto with its Listello's.*

E, *Lower Torus.*

F, *Plinth or Zocco.*

G, *Cimacia*

H, *Dado*

I, *Base*

K, *Imposts of arches.*

} of the pedestals.

THE capital ought to be in height half the diameter of the column, and is to be divided into three parts. The upper part is given to the abaco and cimacio. The cimacio is two of the five parts thereof, which must be divided into three parts; with the one the listello is made, and with the other two the gola. The second principal part is divided into three equal parts; one to be given to the annelli or annulets, or gradetti, which three are equal; the other two remain for the ovolo, which projects two thirds of its height. The third part is for the collarino.

THE whole projecture is the fifth part of the diameter of the column. The astragal or tondino is as high as all the three annelli, and projects equal to the lower part of the shaft of the column. The cimbia is half the height of the astragal or tondino, and its projecture is directly plumb with the centre of the said astragal.

THE architrave is placed upon the capital, the height of which must be half the diameter of the column, that is, a module. It is divided into seven parts. With one the *tenia* or *benda* is made, whose projecture must be equal to its height; then the whole is again divided into six parts, one is given to the *goccie*, which ought to be six, and to the listello under the *tenia*, which is a third part of the said *goccie*.

FROM the *tenia* downwards the remainder is again divided into seven parts; three are to be given to the first fascia, and four to the second. The frieze is a module and a half in height. The breadth of the triglyph is one module, and its capital the sixth part of a module. The triglyph is to be divided into six parts; two of which are for the two channels in the middle, one for the two half channels at the ends, and the other three for the spaces between the said channels.

THE *metopa*, or space between triglyph and triglyph, ought to be as broad as it is high. The cornice must be a module and one sixth in height, and divided into five parts and a half, two of which are given to the cavetto and ovolo. The cavetto is less than the ovolo by the width of its listello. The remaining three parts and a half are to be given to the corona or cornice, which is vulgarly called *gocciolatoio*, and to the gola or cima recta and reversa.

THE corona ought to project four parts in six of the module, and have on its soffit, that looks downwards, and projects forward, six drops, or *guttæ*, in length, and three in breadth, with their listelli over the triglyphs, and some roses over the *metopæ*. The *guttæ* are round, shaped like bells, and answer to those under the *tenia*.

THE gola must be an eighth part thicker than the corona, and divided into eight parts; two are to be given to the orlo, and six remain for the gola, whose projecture is seven parts and a half.

THEREFORE the height of the architrave, frieze and cornice is a fourth part of the altitude of the column.

THESE are the dimensions of the cornice, according to VITRUVIUS; from which I have deviated in altering some of the members, and making them somewhat larger.

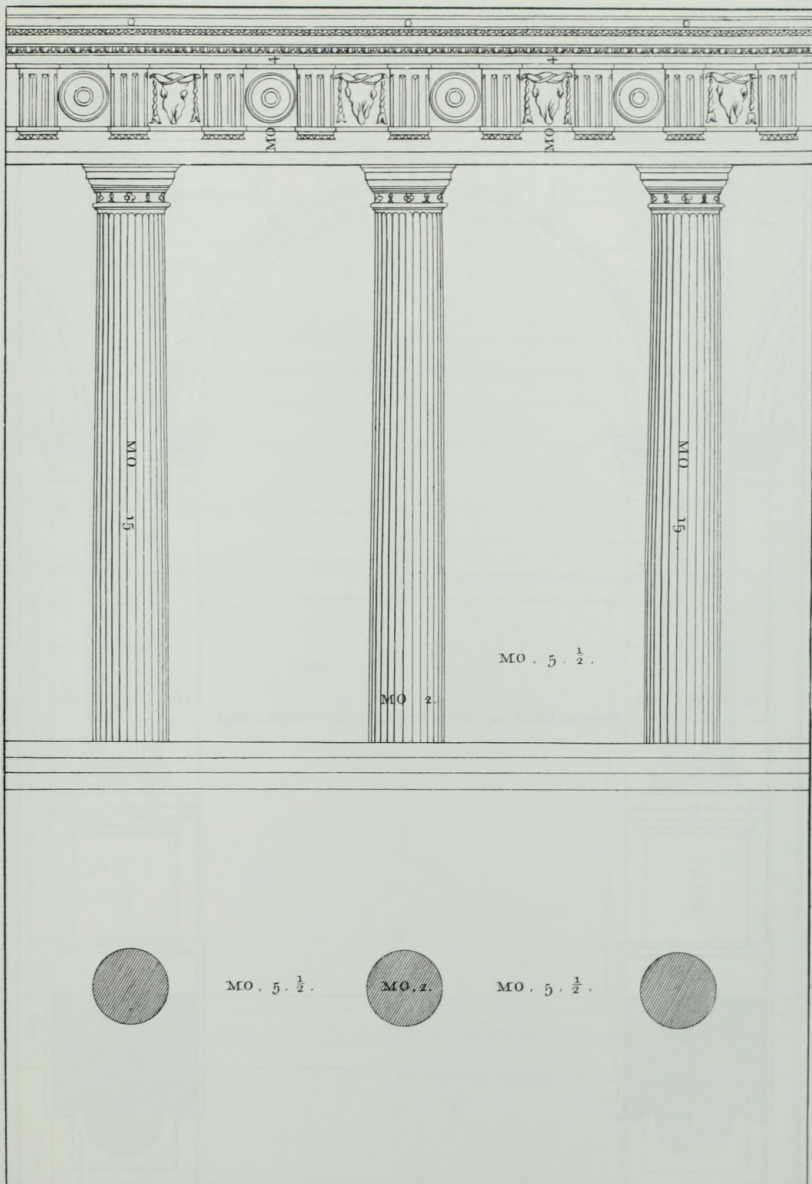
A, *Gola recta*.
B, *Gola reversa*.
C, *Gocciolatoio* or *Corona*.
D, *Ovolo*.
E, *Cavetto*.
F, *Capital of the Triglyph*.
G, *Triglyph*.

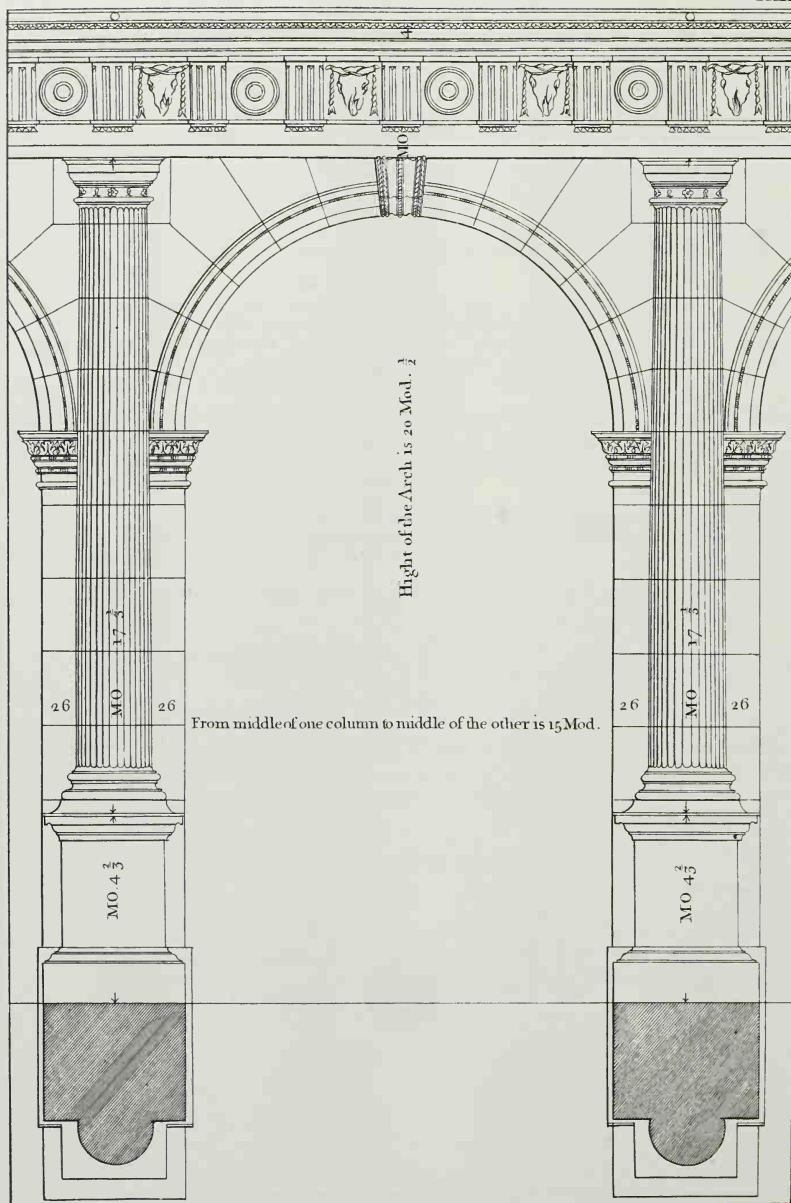
H, *Metopa*.
I, *Tenia*.
K, *Goccie*.
L, *First Fascia*.
M, *Second Fascia*.
Y, *Soffit of the Gocciolatoio*.

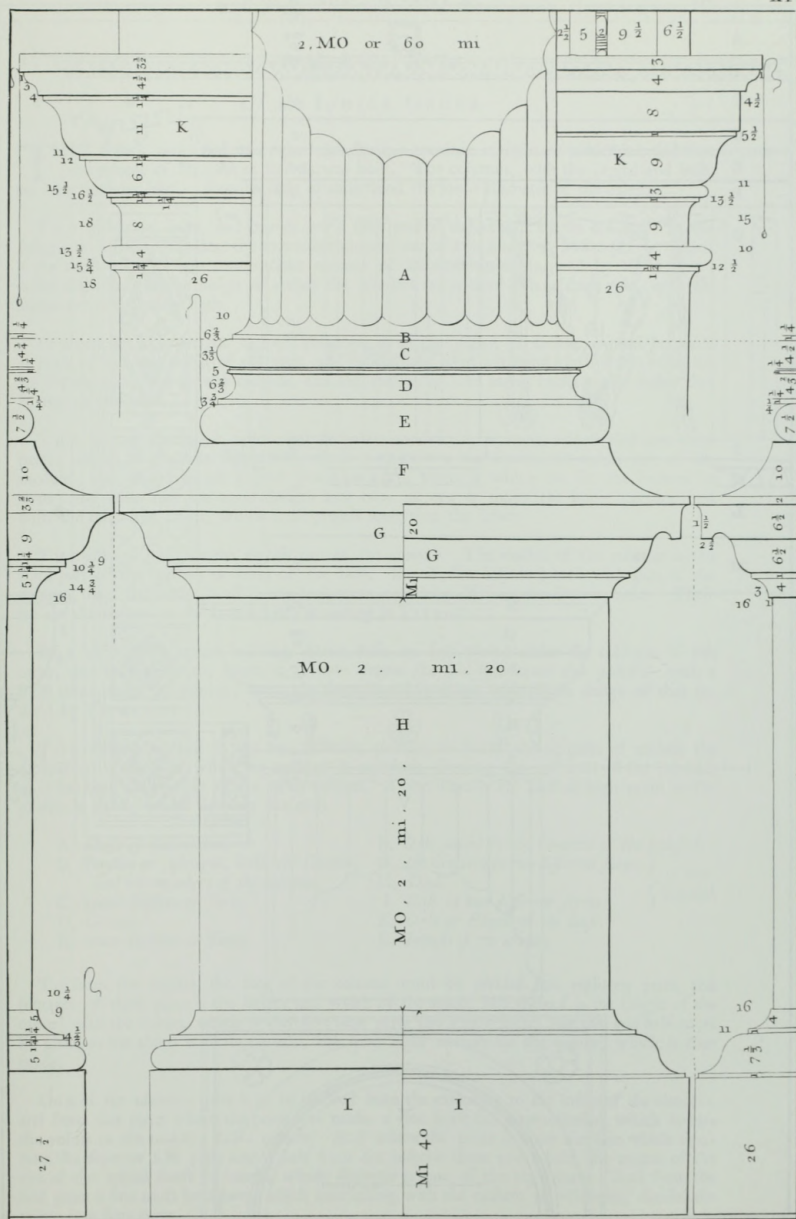
Parts of the capital.

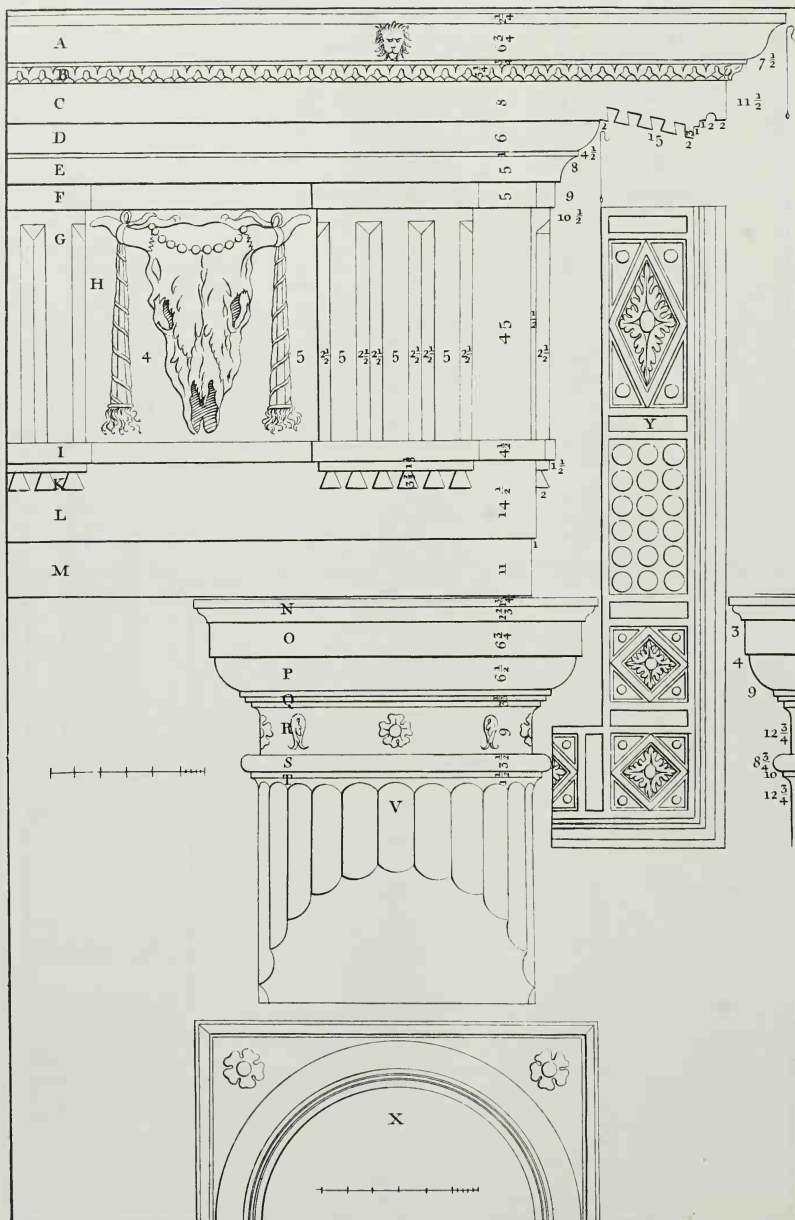
N, *Cimacio*.
O, *Abaco*.
P, *Ovolo*.
Q, *Gradetti* or *Annulets*.
R, *Collarino*.

S, *Astragal*.
T, *Cimbria*.
V, *Shaft of the column*.
X, *Plan of the capital, and the module divided into thirty minutes*.









CHAP. XVI.

Of the IONICK ORDER.

THE Ionick order had its origin from *Ionia*, a province in *Asia*, of which it is said that the temple of *DIANA* at *Ephesus* was built. The columns, with the capital and base, are nine modules high. By a module is understood the lower diameter of the column.

THE architrave, frize, and cornice are a fifth part of the altitude of the column. In the designs of simple colonades, the intercolumniations are of two diameters and a quarter, which is the most beautiful and commodious manner of intercolumniations, and by *VITRUVIUS* called *Eustilo's*. In the design of arches the pilasters are a third part of the void, and the arches are two squares high.

IF a pedestal is to be put to Ionic columns, as in the design of arches, it must be made as high as half the width of the arch, and divided into seven parts and a half; two of which are for the base, one for the cimacia, and the remaining four and a half for the dado, that is, the middle plain.

THE base of the Ionick order must be half a module in thickness, and divided into three parts; one to be given to the plinth, whose projecture is the fourth and eighth part of the module; the other two are divided into seven parts, three of which are for the bastone or torus; the other four are again divided into two, of one is made the upper cavetto, and with the other the lower, which must project more than the other.

THE astragal must be the eighth part of the cavetto. The cimbia of the column is the third part of the bastone or torus of the base. But if the base is joined with part of the column, then the cimbia must be made thinner, as I have said in the Dorick order. These are the dimensions of the Ionick base, according to *VITRUVIUS*.

BUT as in many antient buildings Attick bases are seen placed under the columns of this order, and they please me better so, I have drawn the said base upon the pedestal, with a little torus under the cimbia; but at the same time I have not omitted the design of that order'd by *VITRUVIUS*.

THE designs marked L are two different profiles, to make the imposts of arches, the dimensions of each of which are marked in numbers, shewing the minutes of the module, as it has been observed in all the other designs. These imposts are half as high again as the pilaster is thick, which supports the arch.

A, *Shaft of the column.*

B, *Tondino or Astragal, with the Cimbia, and are members of the column.*

C, *upper Bastone or Torus.*

D, *Cavetto.*

E, *lower Bastone or Torus.*

F, *Orlo joined to the Cimacia of the pedestal.*

G, *the Cimacia in two different forms*

H, *Dado*

I, *Base in two different forms*

K, *Orlo or Plinth of the Base.*

L, *Imposts of the arches.*

} *of the pedestal.*

TO form the capital, the foot of the column must be divided into eighteen parts, and nineteen of these parts is the height and width of the abaco, half thereof is the height of the capital with the volute, which is therefore nine parts and a half high; one part and half must be given to the abaco with its cimacio, the other eight remain for the volutæ, which is thus made.

ONE of the nineteen parts is to be allowed from the extremity to the inside of the cimacio, and from that place where the point was made, a line must fall perpendicular, which divides the voluta in the middle, called *catheto*. And where the point is upon the line which separates the superior four parts and a half from the inferior three and a half, the centre of the eye of the voluta must be made, whose diameter is one of the eight parts. And from the said point a line must be drawn, which intersecting with the catheto at rectangles, divides the voluta into four parts.

THEN

THE *n* square ought to be formed in the eye of the voluta, half the diameter of the said eye in bigness, and diagonal lines drawn. Upon which lines the points are marked whereon the fixed foot of the compasses must be placed in forming the voluta. These are thirteen in number, including the centre of the eye of the said voluta. The order that ought to be observed in them will plainly appear by the numbers placed in the design.

THE astragal of the column is in a direct line with the eye of the voluta. The thickness of the voluta in the middle must be equal to the projecture of the ovolo, which projects beyond the abaco just as much as the eye of the voluta is. The channel of the voluta is even with the shaft of the column.

THE astragal of the column goes quite round under the voluta, and is always seen, as appears by the plan: For it is natural, that a thing so tender as the voluta is supposed to be, should give way to a hard one, such as the astragal, from which it must always be equally distant.

CAPITALS are generally made in the angles of colonades and portico's of this order, with volutæ not only in front, but also in that part which, if the capital was made as usual, would be the flank; by which means they have the fronts on two sides, and are called angular capitals. I shall shew how these are made in my book of temples.

- | | |
|--|------------------------------------|
| A, <i>Abaco.</i> | E, <i>Cimbia.</i> |
| B, <i>Channel or hollow of the Voluta.</i> | F, <i>Shaft of the column.</i> |
| C, <i>Ovolo.</i> | G, <i>The line called Catheto.</i> |
| D, <i>Tondino or Astragal under the Ovolo.</i> | |

IN the plan of the capital the said members are countermarked with the same letters.

- S, *The eye of the Voluta in a larger form.*

MEMBERS of the base, according to VITRUVIUS.

- | | |
|--------------------------------|-----------------------------------|
| K, <i>Shaft of the column.</i> | O, <i>Tondini or Astragals.</i> |
| L, <i>Cimbia.</i> | P, <i>Second Cavetto.</i> |
| M, <i>Base or Torus.</i> | Q, <i>Orlo or Plinth.</i> |
| N, <i>First Cavetto.</i> | R, <i>Projecture of the base.</i> |

THE architrave, frize and cornice are, as I have said, a fifth part of the height of the column, the whole to be divided into twelve parts, of which the architrave is four parts, the frize three, and the cornice five.

THE architrave is to be divided into five parts; of one its cimacio is made, and the remaining four divided into twelve parts, three of which are given to the first fascia and its astragal; four to the second and its astragal, and five to the third.

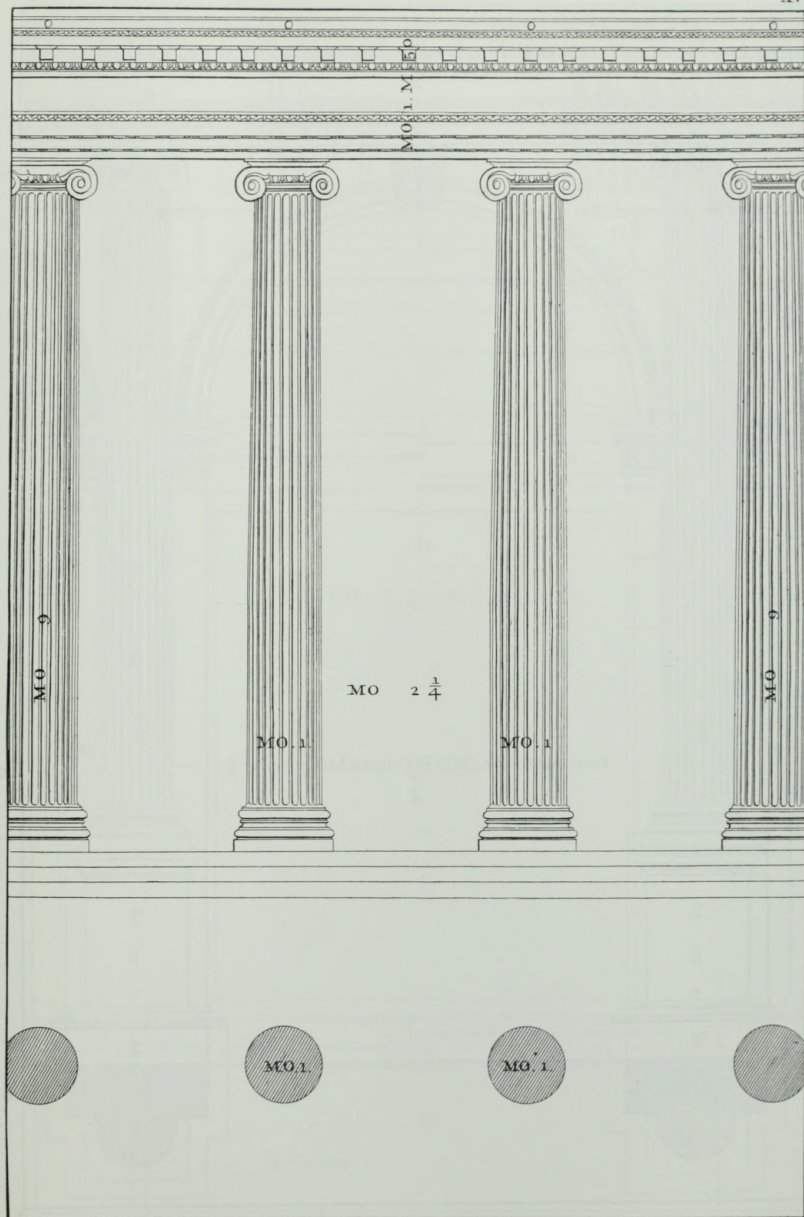
THE cornice is to be divided into seven parts and three fourths; two must be given to the cavetto and ovolo, two to the modiglion, and three and three fourths to the corona and gola or cima. Its projecture is equal to its height. I have designed the front, flank, and plan of the capital; as also the architrave, frize, and cornice, with their proper ornaments.

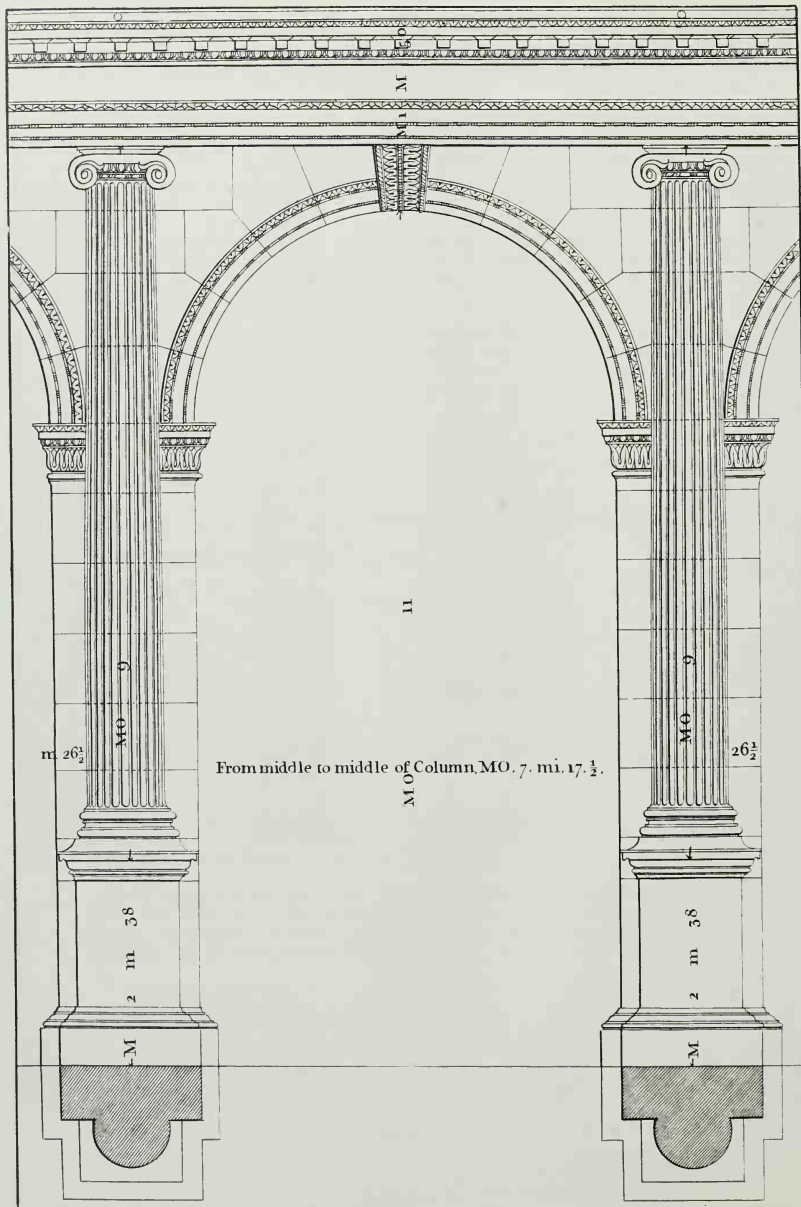
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|--------------------------------------|--------------------------------------|
| A, <i>Gola or Cima recta.</i> | G, <i>Cavetto.</i> |
| B, <i>Gola, or Cima reversa.</i> | H, <i>Fregio or frize.</i> |
| C, <i>Gocciolatoio or Corona.</i> | I, <i>Cimacio of the architrave.</i> |
| D, <i>Cimacio of the Modiglions.</i> | K, <i>First Fascia.</i> |
| E, <i>Modiglions.</i> | L, <i>Second Fascia.</i> |
| F, <i>Ovolo.</i> | M, <i>Third Fascia.</i> |

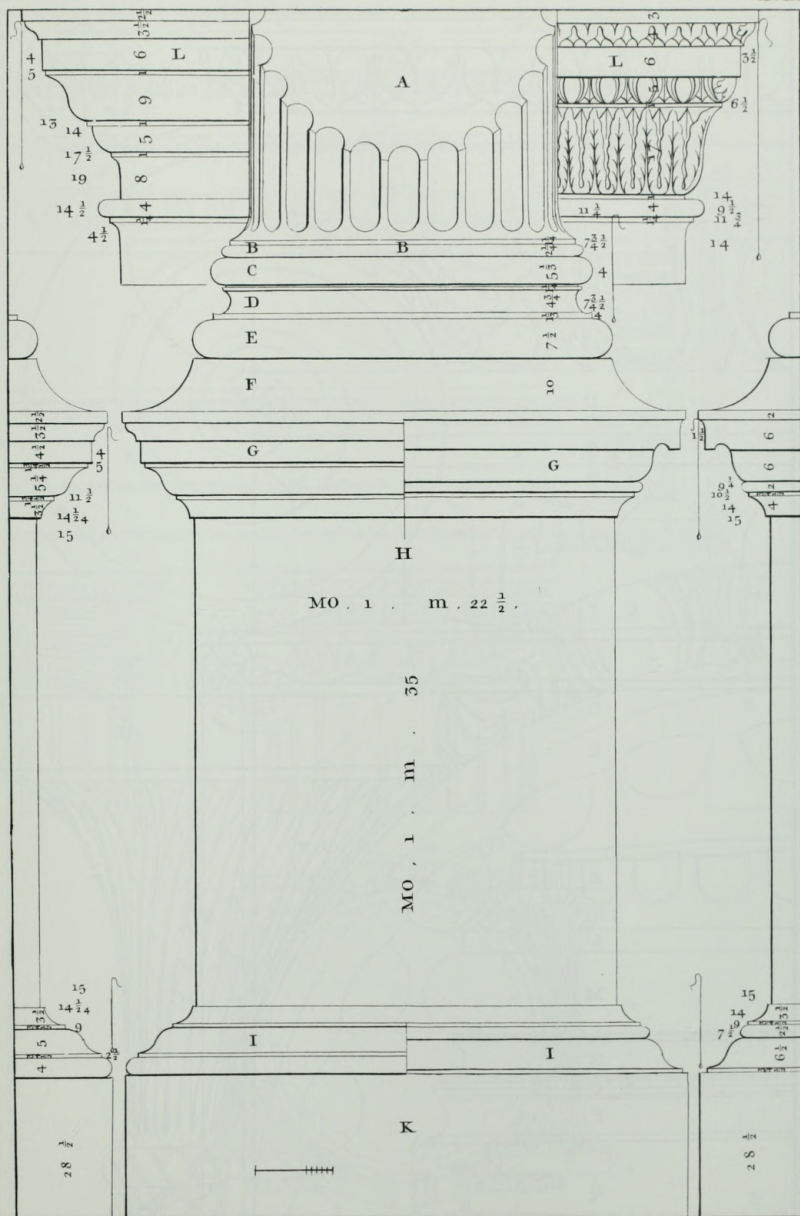
MEMBERS of the capital.

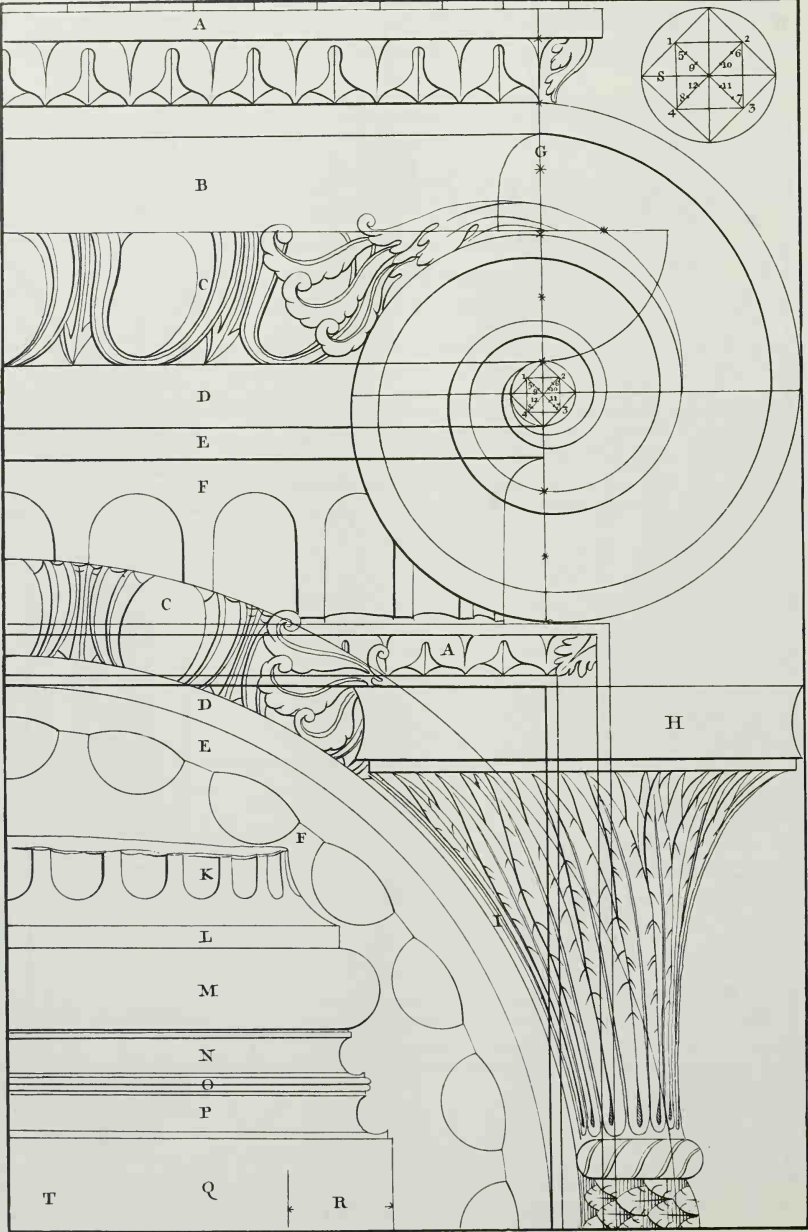
- | | |
|---------------------------------|--|
| N, <i>Abaco.</i> | Q, <i>Tondino of the column or Astragal.</i> |
| O, <i>Hollow of the Voluta.</i> | R, <i>Shaft of the column.</i> |
| P, <i>Ovolo.</i> | |

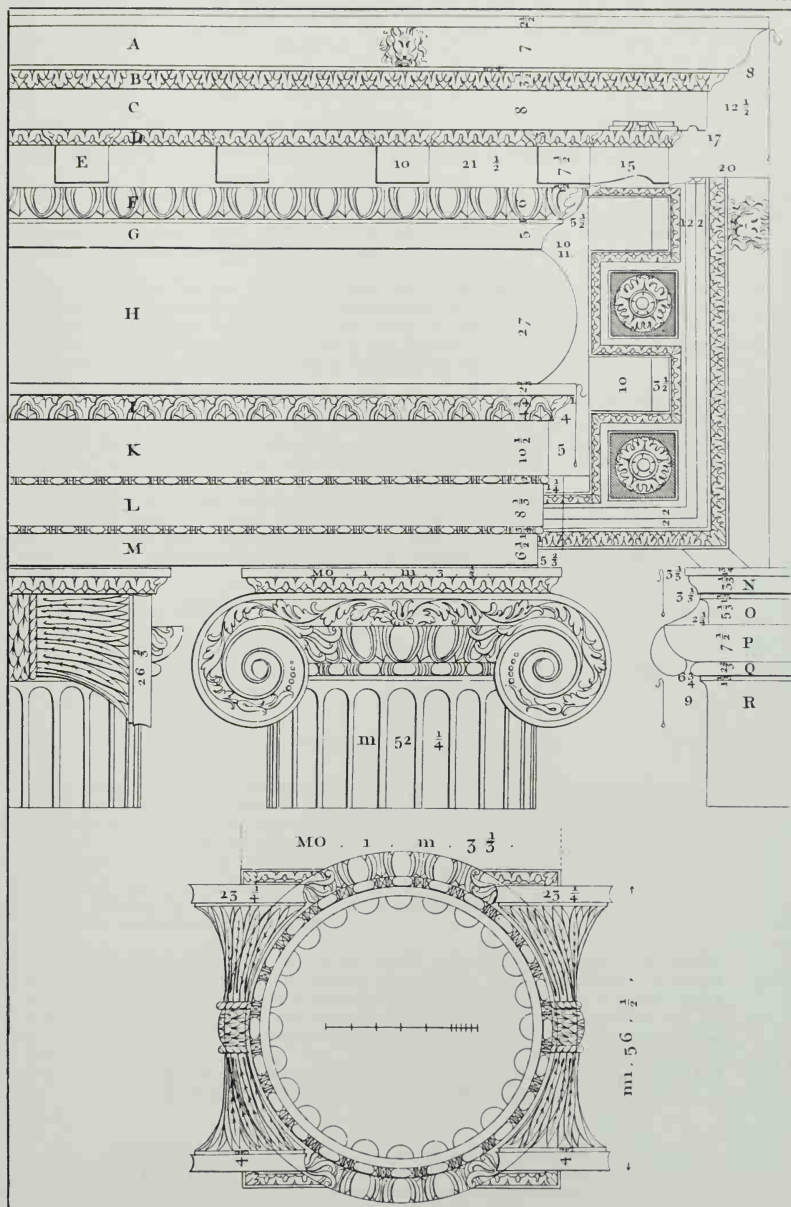
THE soffit of the cornice is where the roses are between one modiglion and the other.











CHAP. XVII.

Of the CORINTHIAN ORDER.

THE Corinthian order, which is more beautiful and elegant than any of the foregoing orders, was first invented in *Corinth*, a most noble city in *Peloponnesus*.

THE columns are like those of the Ionic order, being five modules and a half in height, including their base and capital. When they are to be fluted, they ought to have twenty four channels or flutes, whose depth must be half of their width. The spaces between two flutes must be one third of the width of the said flutes.

THE architrave, frize and cornice are a fifth part of the height of the whole column. In the design of a simple colonade the intercolumniations are of two diameters, as they are in the portico of *St. Maria la Rotunda* at *Rome*; which manner of placing columns is by *VITRUVIUS* called *Sistilo's*. In that of arches the pilasters are two fifths of the void, which void is two squares and a half, including the thickness of the arch.

THE pedestals to be placed under Corinthian columns ought to be one fourth of the height of the columns, and divided into eight parts; one to be given to the cimacia, two to its base, and the remaining five for the dado. The base must be divided into three parts; two to be given to the zocco or plinth, and one to the cornice or molding.

THE Attick is the base to these columns, but differs from that which is placed under the Dorick order, its projecture being but one fifth part of the diameter of the column. It may also vary in some other parts; as is seen in the design, where the impost of the arches are also profiled, whose height is half as much again as the thickness of the members or pilasters that support the arch.

A, the shaft of the column.	F, Orlo of the base joined to the Cimacia of the pedestal.
B, the Cimbria or Cincture, and Tondino	G, Cimacia
or Astragal of the column.	H, Dado
C, the upper Bassone or Torus.	I, Cornice of the base
D, Cavetto with its Astragal.	K, Orlo of the base.
E, lower Bassone or Torus.	

} of the pedestal.

The impost of the arches is by the side of the column.

THE height of the Corinthian capital ought to be the diameter of the column below, and a sixth part more, which is allowed to the abaco. The remainder is divided into three equal parts; the first is given to the first leaf, the second to the second, and the third is again divided into two parts. In that part nearest to the abaco must be made the *caulicoli* or stems, with their leaves, that seem to be supported by them, and from which they arise; therefore the shaft or stem from whence they spring should be thick, and diminish gradually in their foldings, imitating thereby the plants, which are thicker in the part from whence they sprout, than at the extremities of their branches.

THE *campana*, which is the body of the capital under the leaves, ought to fall directly perpendicular with the bottom of the flutes of the columns. To form the abaco, and to give it a suitable projecture, a square is to be made, every side whereof must be a module and a half, within which let diagonal lines be drawn, and in the middle or centre where they intersect, the fix'd point of the compasses ought to be placed, and towards every angle of the square a module is to be marked; then, where the points are, lines that intersect the said diagonals at rectangles must be drawn, so as to touch the sides of the square, and these will be the bounds of the projecture, the length of which will also give the width of the horns of the abaco.

THE curvature, or diminution, is made by drawing a thread from one horn to the other, and taking the point where the triangle is formed whose base is the diminution, then a line is to be drawn from the extremities of the said horn to the extremity of the astragal or tondino of the column, which line the tip of the leaves is to touch, or they may come out a little more,

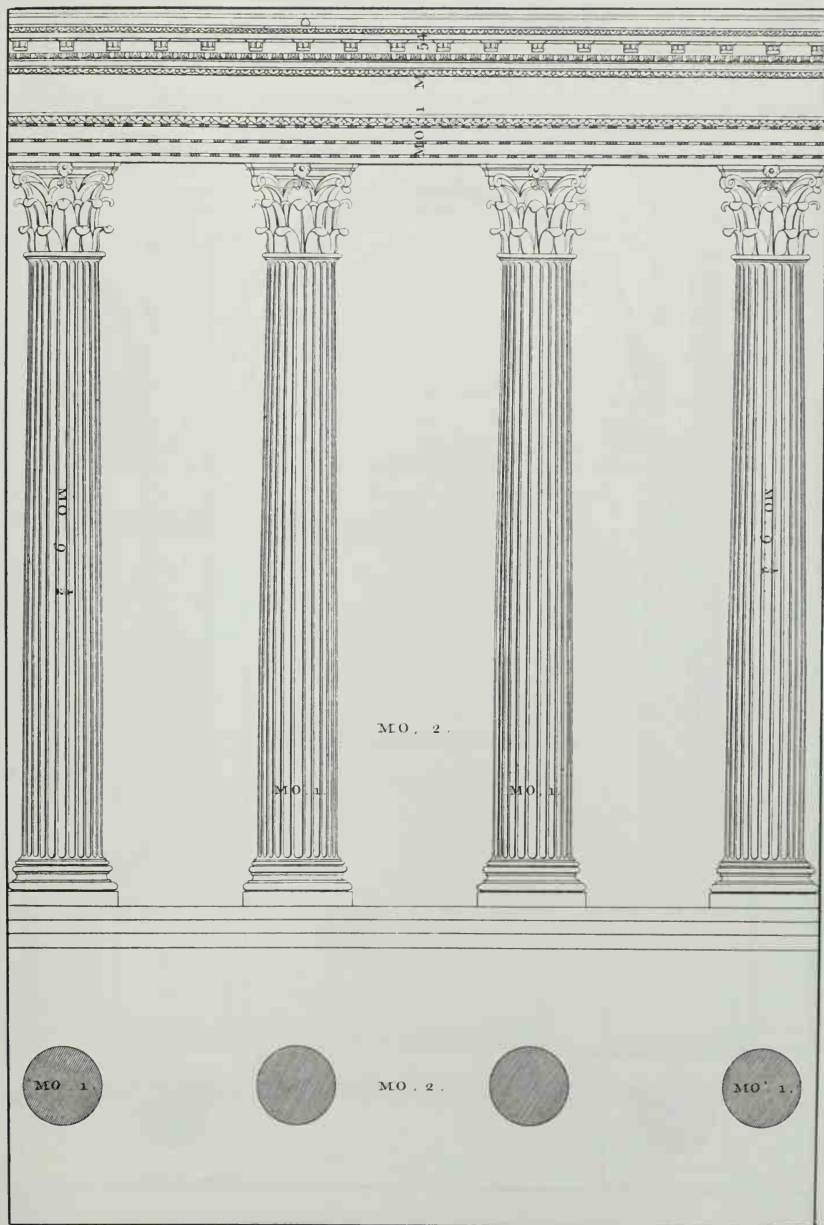
and this is their projecture. The width of the rose ought to be a fourth part of the lower diameter of the column.

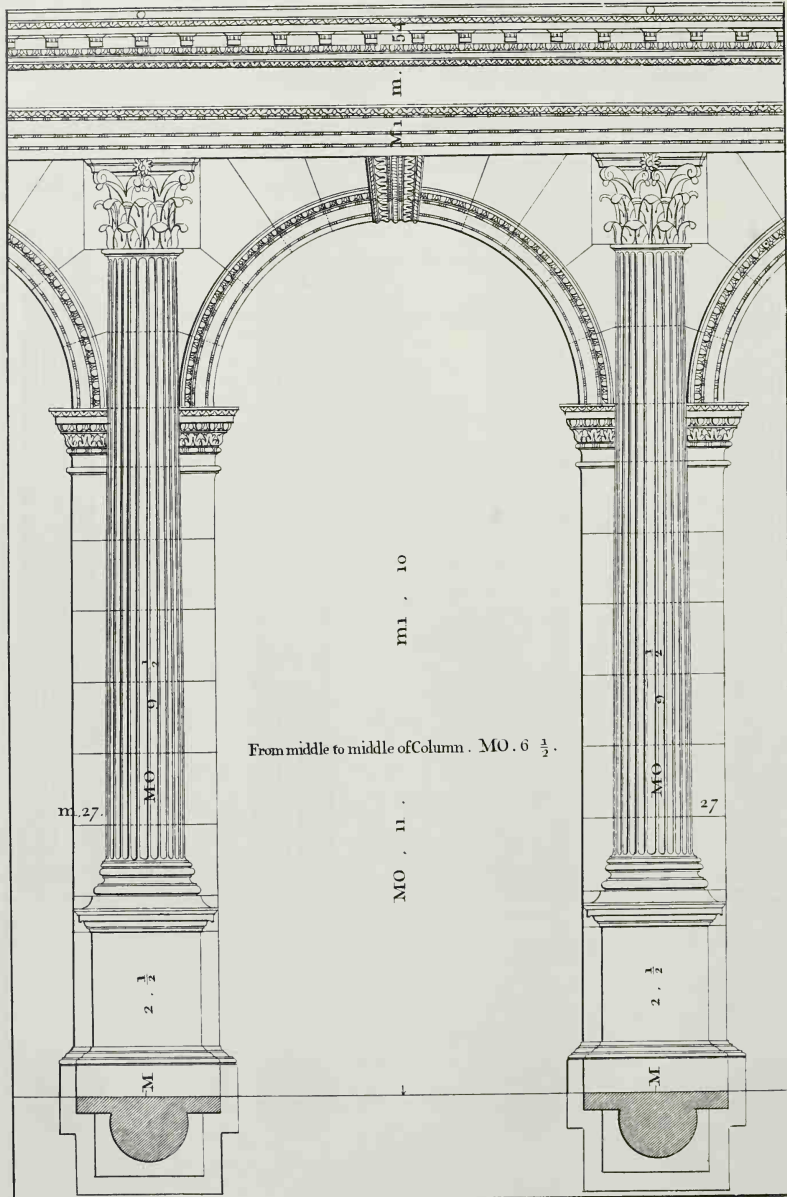
THE architrave, frize, and cornice, as I have said, are one fifth of the height of the column, and the whole to be divided into twelve parts, as in the Ionick; but with this difference, that in this the cornice is to be divided into eight parts and a half, one of which is given to the *intavolato* or cima reverfa, another to the *dentello* or dentels, the third to the ovolo, the fourth and fifth to the modiglion, and the remaining three and a half to the corona and gola.

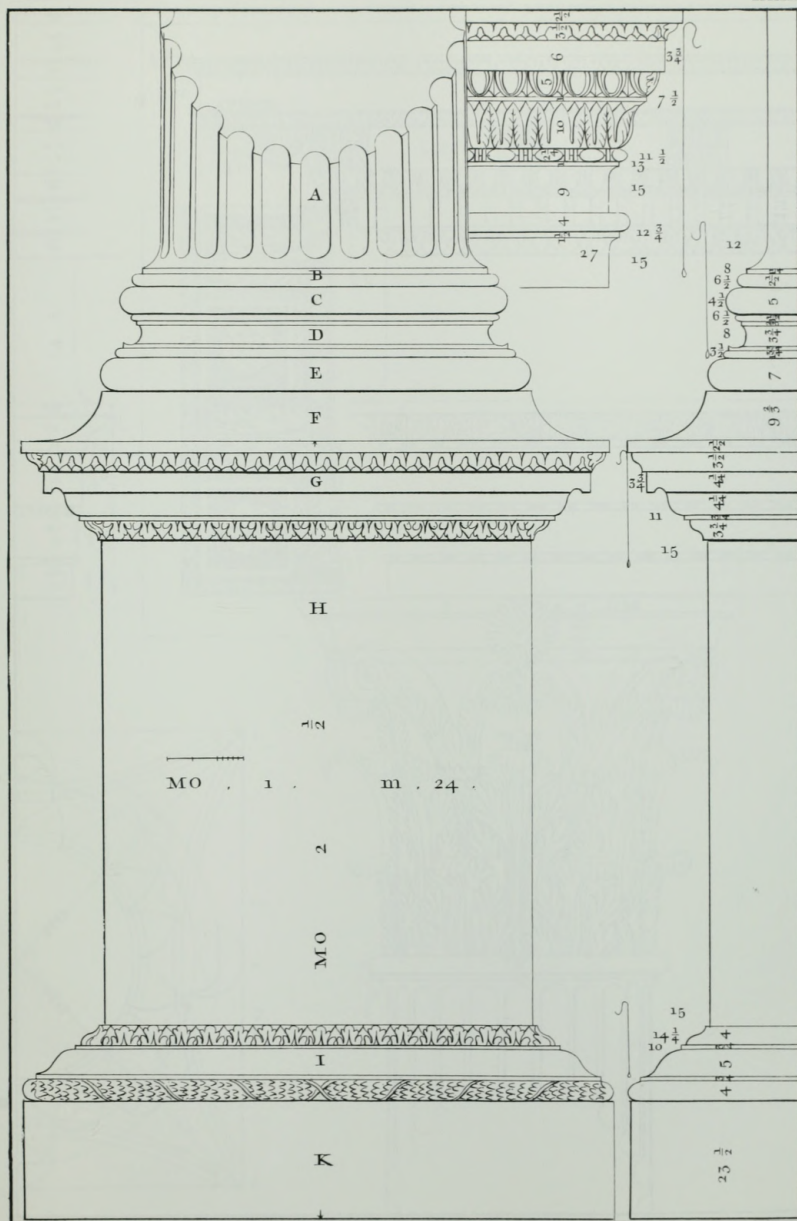
THE projecture of the cornice is equal to its height.

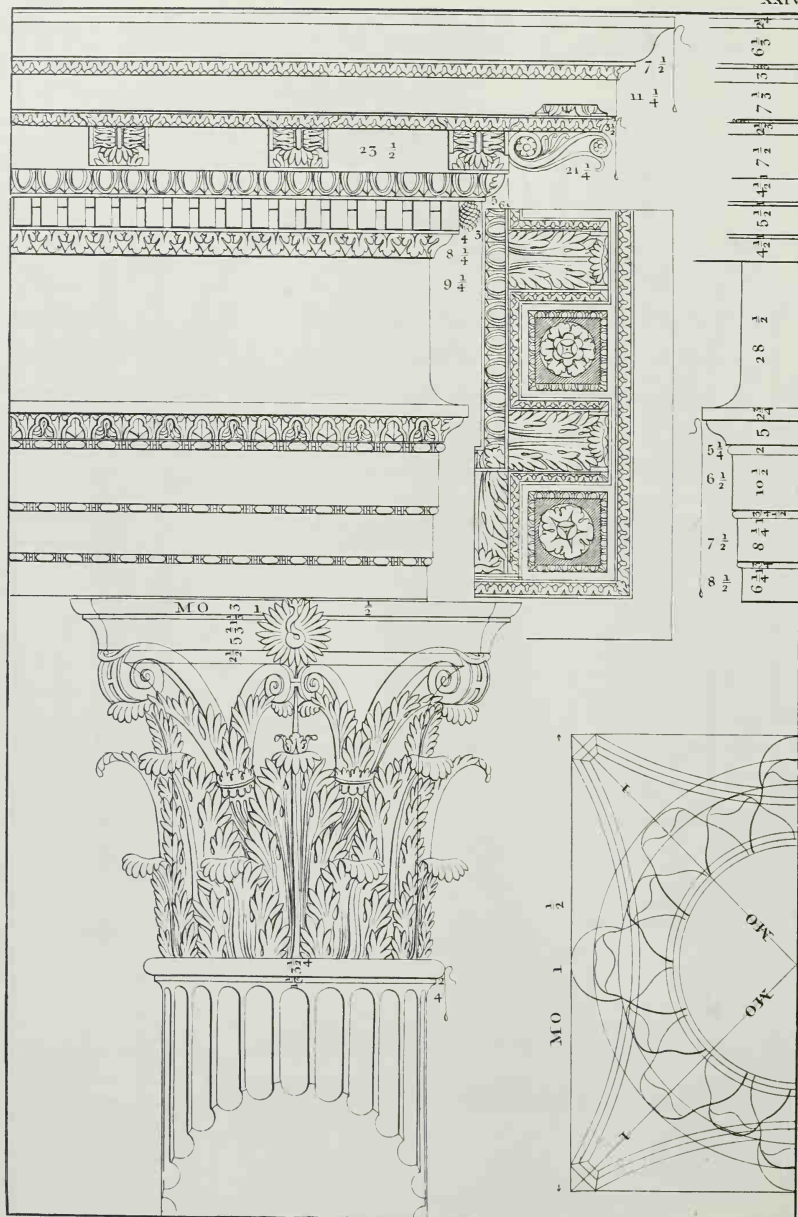
THE pannels for the roses placed between the modiglions must be square, and the modiglions half as broad as the plane of the said roses.

THE members of this order are not marked with letters, as the foregoing; because by them these may easily be known.









C H A P. XVIII.

Of the COMPOSITE ORDER.

THE Composite order, which is also called *Latin* from its having been the ancient *Romans* invention, and also because it partakes of two of the foregoing orders. The most regular and beautiful is that which is composed of the Ionic and Corinthian.

IT is made more slender than the Corinthian, and may be formed like that in all its parts, except the capital. The columns ought to be ten modules high.

IN the designs of simple colonades the intercolumniations are of one diameter and a half, which is called by *VITRUVIUS* *Picusfilo's*. In that of arches the pilasters are half the void of the arch, and the arches are two squares and a half high under the vault.

AND because this order, as I have said, ought to be formed more slender than the Corinthian, its pedestal is a third part of the height of the column divided into eight parts and a half; of one the cimacia of that base is made, and five and a half remain for the dado. The base of the pedestals is divided into three parts; two are given to the zocco or plinth, and one to its balustrade and gola.

THE Attick may serve for the base of this column, as in the Corinthian; and also may be formed composed of the Attick and Ionick, as appears by the design.

THE profile of the impost of the arches is on one side of the dado of the pedestal, the height of which is equal to the thickness of the *membretto*.

THE dimensions of the Composite capital are the same as those of the Corinthian, but differs from it in the voluta, ovolo, and *fusarolo*, which members are attributed to the Ionick. The method of forming which is thus: From the abaco downwards the capital is to be divided into three parts, as in the Corinthian; the first to be given to the first leaf, the second to the second, and the third to the voluta, which is formed in the same manner, and with the same points with which it was said the Ionick was made, and takes up so much of the abaco that it seems to grow out of the ovolo near the flower, which is placed in the middle of the curvature of the said abaco, and is as thick in front as the blunt part that is made over the horns thereof, or a little more.

THE thickness of the ovolo is three parts in five of the abaco. Its lower part begins parallel with the lower part of the eye of the voluta, and projects three parts of four of its height, and is with its projecture perpendicular to the curvature of the abaco, or a little more.

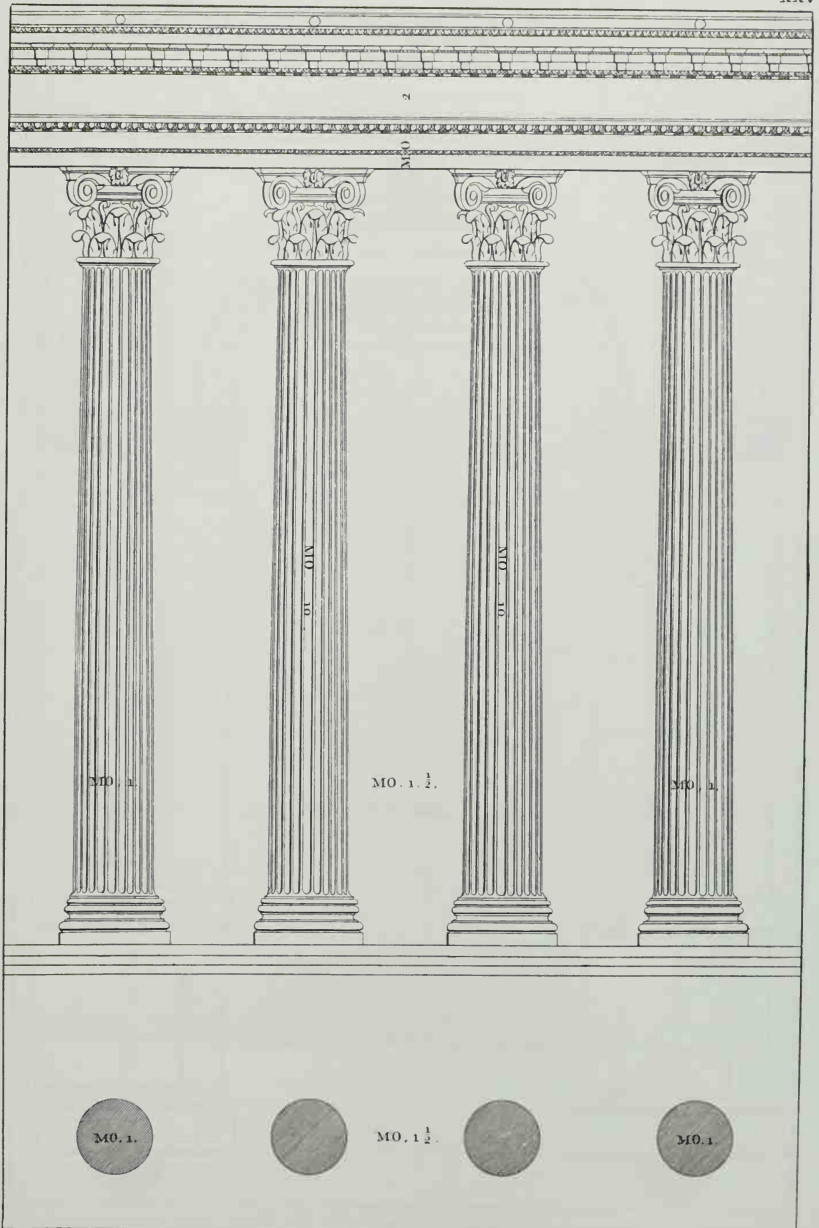
THE *fusarolo* is one third part of the height of the ovolo, and its projecture a little more than half its thickness, and goes round the capital under the voluta always in sight.

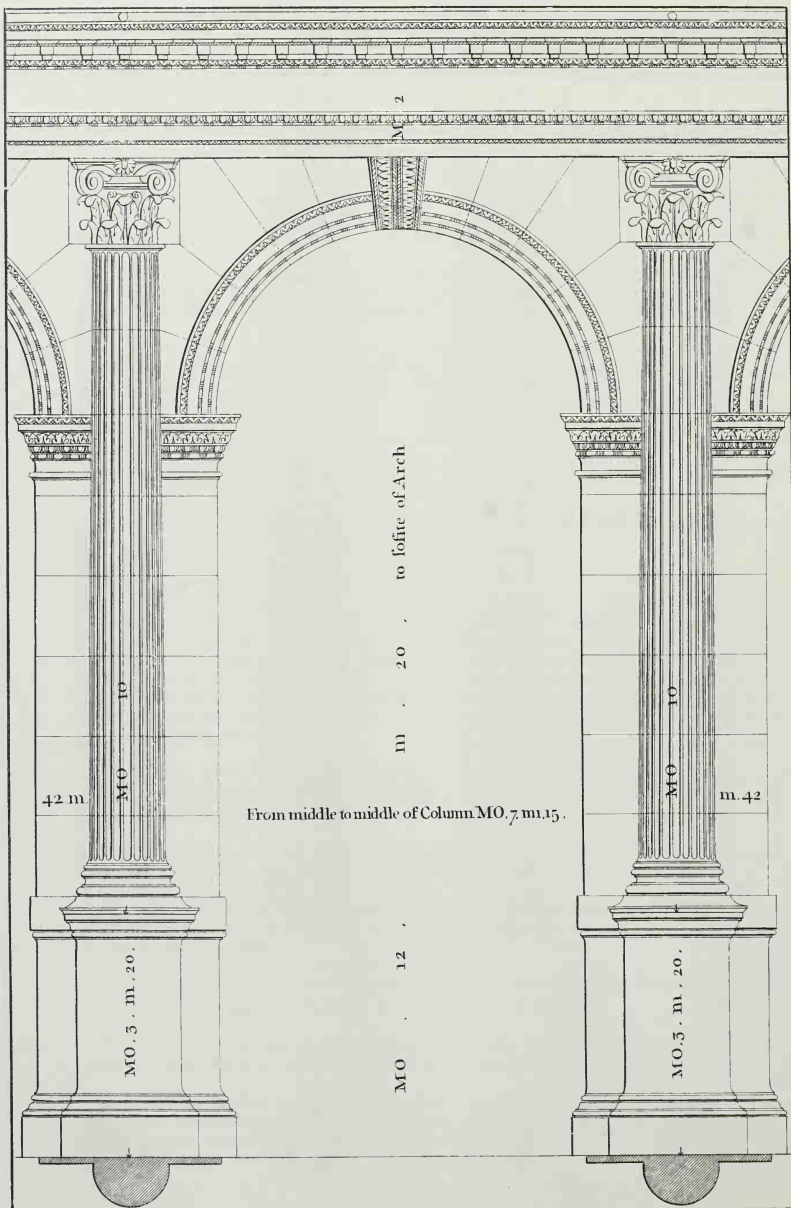
THE *gradetto*, which is placed under the *fusarolo* that forms the orlo of the campana of the capital is half the *fusarolo*. The body of the campana answers directly to the bottom of the flutes of the columns.

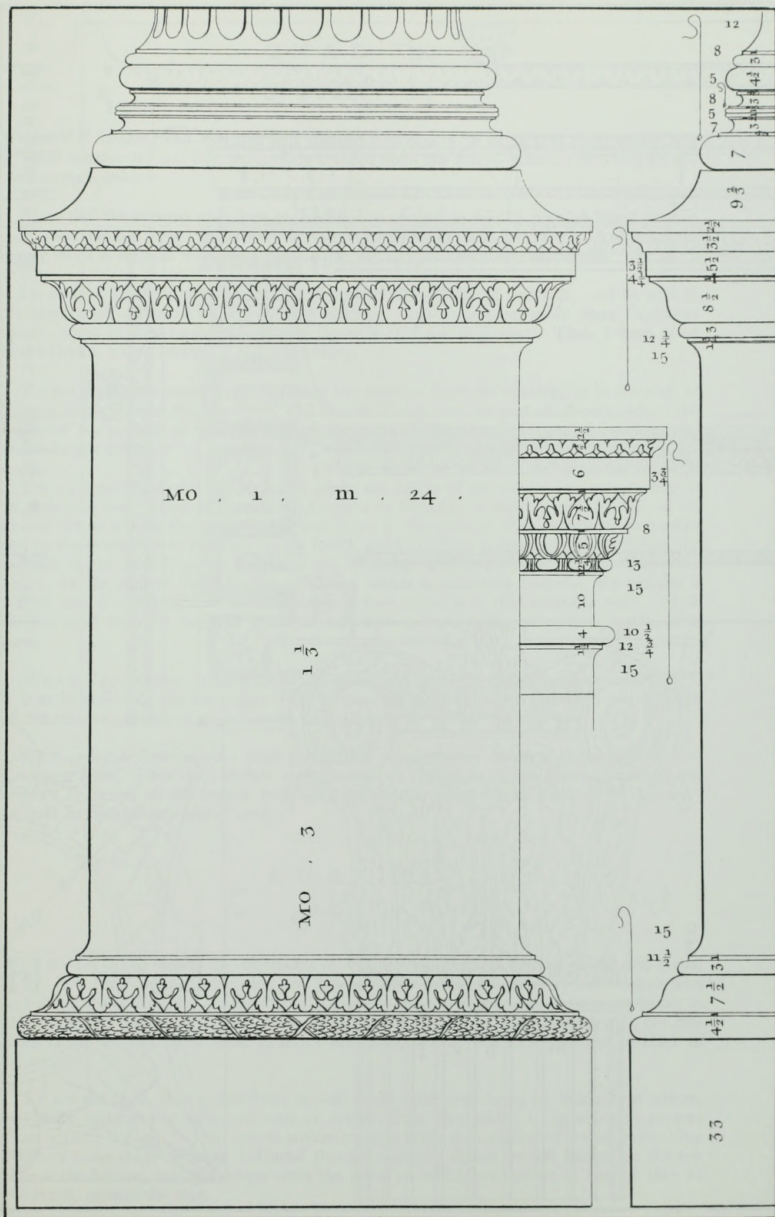
I HAVE seen one of this kind at *Rome*, from which I have taken the said dimensions, because I thought it extremely beautiful, and exceedingly well contrived.

THERE are also capitals to be seen formed in another manner, that may be called Composite, of which mention shall be made and the designs placed in my *books of antiquity*.

THE architrave, frieze and cornice are a fifth part of the height of the column. Their proportions and divisions may easily be known by what has been laid in the other orders, and by the numbers placed in the designs.







C H A P. XIX.

Of PEDESTALS.

I HAVE hitherto said as much as I thought necessary with respect to plain walls, and their ornaments; and have particularly touched upon the several pedestals that may be applied to each order.

BUT tho' the antients may seem to have had no regard to form a pedestal larger for one order than another; yet this member is a very great addition both in point of ornament and beauty when it is made with judgment, and in due proportion to the other parts.

IN order that the architect may have a perfect knowledge of pedestals, and be able to use them upon all occasions; it is to be observed, that the antients made them sometimes square, equal in height and width, as in the arch of *Leoni at Verona*. These I have given to the Dorick order, because it requires solidity.

THEY sometimes made them by taking the measure from the opening, as in the arch of *Titus at Santa Maria Nova in Rome*, and that of *Trajan over the port of Ancona*, where the height of the pedestal is half the void of the arch. Which kind of pedestal I have placed in the Ionick order.

THEY sometimes took the dimension from the height of the column, as may be seen in an arch that was erected in honour of AUGUSTUS CÆSAR, at *Susa*, a city situated at the foot of the mountains that part *France and Italy*; in the arch of *Pola*, a city in *Dalmatia*; and in the amphitheatre at *Rome*, in the Ionick and Corinthian orders; in which edifices the pedestal is one fourth of the height of the columns, as I have observed in the Corinthian order. In the arch of *Castel Vecchio at Verona*, which is exceeding beautiful, the pedestal is a third part of the height of the column, as I have placed it in the Composite order. These are the most beautiful forms of pedestals, and such as have a fine proportion to the other parts.

WHEN VITRUVIUS, in his sixth book, speaking of theatres, makes mention of the *poggio*, it is to be observed, that the *poggio* is the same as the pedestal, which is a third of the length of the column, placed as an ornament to the scene.

BUT pedestals that exceed a third part of the columns may be seen in the arch of *Constantine at Rome*, where the pedestals are two fifths of the height of the columns. And it was observ'd in almost all the ancient pedestals to form the base twice as thick as the cimacia; as shall be seen in my *book of arches*.

C H A P. XX.

Of ABUSES.

HAVING laid down the ornaments of architecture, that is, the five orders, and shewn how they ought to be made; and having placed the profiles of every one of their parts as I found the antients did observe them; it seems to me not improper to inform the reader in this place of many abuses introduc'd by the Barbarians, which are still followed, that the studious in this art may avoid them in their own works, and be able to know them in those of others.

I SAY therefore, that architecture, as well as all other arts, being an imitatrix of nature, can suffer nothing that either alienates or deviates from that which is agreeable to nature; from whence we see, that the ancient architects, who made their edifices of wood, when they began to make them of stone, instituted that the columns should be left thicker at the top than at the bottom, taking example from the trees, all which are thinner at the top than in the trunk, or near the root.

AND because it is very probable, that those things are depressed upon which some great weight is put, bases were placed under the columns, which, with their bastoni and cavetti, seem to be crushed with the burden laid upon them.

So likewise in the cornice they introduced the triglyphs, modiglions and dentels, which represent the ends of those beams that are put for a support to the floors and roofs.

THE same also may be observed in all the other parts, if they are consider'd. Being thus, that manner of building cannot but be blamed, which departs from that which the nature of things teacheth, and from that simplicity which appears in the things produced by her; framing as it were another nature, and deviating from the true, good and beautiful method of building.

FOR which reason one ought not, instead of columns or pilasters, that are to sustain some great weight, to place *cartelli*, also called *cartocci*, being a kind of a scroll, which to the intelligent appear very shocking, and to those that are not so it gives rather a confusion than a pleasure; nor have they any other effect besides encreasing the builder's expence.

FOR the same reason none of these cartocci ought to project from the cornices; for it is requisite that all the parts of the cornices should be made for some purpose and shew, like what they would seem to be if the whole work was of wood.

BESIDES, it is necessary that a great weight should be sustained by something solid and strong enough to support it: now it is certain that those cartocci would be altogether superfluous, because it is impossible that any beams or timber should produce the effect represented; and since they are supposed to be soft and tender, I cannot conceive with what reason they can be placed under a thing both hard and heavy.

BUT, in my opinion, the most important error is that of making the frontispieces of doors, windows, and loggia's broken in the middle, since these were made to keep the rain from the fabricks, and which the antient builders, instructed by necessity itself, made to close and swell in the middle.

I KNOW therefore nothing that can be done more contrary to natural reason, than to divide that part which is supposed to shelter the inhabitants and those that go into the house from rain, snow, and hail.

AND altho' variety and things new may please every one, yet they ought not to be done contrary to the precepts of art, and contrary to that which reason dictates; whence one sees, that altho' the antients did vary, yet they never departed from the universal and necessary rules of art, as shall be seen in my *books of antiquities*.

ALSO as to the projection of the cornices, and the other ornaments, the making them come out too much is no small abuse; because when they exceed that which is reasonably proper for them, especially if they are in a close place, they will make it narrow and disagreeable, and frighten those that stand under them, as they always threaten to fall.

NOR ought the making cornices which are not in proportion to the columns less to be avoided; because if upon little columns great cornices are placed, or little cornices upon great columns, who doubts but that such a building must have a very unpleasing aspect?

BESIDES which, the supposing of the columns to be divided, making certain annulets and garlands round them, that may seem to hold them firmly united together, ought as much as possible to be avoided; because the more solid and strong the columns appear, the better they seem to execute the purpose for which they were erected, which is to make the work thereon both strong and secure.

I COULD mention many other such abuses, as some members in the cornices that are made without any proportion to the others, which, by what I have shewn above, and by that which has been already said, may very easily be known.

IT remains now, to come to the disposition of the particular and principal places of the fabricks.

CHAP. XXI.

Of the loggia's, entries, halls, rooms, and of their form.

THE loggia's, for the most part, are made in the fore and back front of the house, and are placed in the middle, when only one is made, and on each side when there are two.

THESE loggia's serve for many uses, as to walk, eat in, and other recreations; and are either made larger or smaller, according as the bigness and conveniency of the fabrick requires; but, for the most part, they are not to be made less than ten foot wide, nor more than twenty.

BESIDES, all the well-contrived houses have in the middle, and in their more beautiful part, some places, by which all the others have a communication: these in the under part are called entries, and in the upper halls. These places are publick.

THE entries are the first parts, except the loggia's, which offer to those that enter the house, and are the most convenient for those to stay in who wait the master's coming out, to salute or do business with him.

THE halls serve for feasts, entertainments and decorations, for comedies, weddings, and such like recreations; and therefore these places ought to be much larger than the others, and to have the most capacious form, to the end that many persons may be therein commodiously placed, and see whatever is done there.

In the length of halls I use not to exceed two squares, made from the breadth; but the nearer they come to a square, the more convenient and commendable they will be.

THE rooms ought to be distributed on each side of the entry and hall; and it is to be observed, that those on the right correspond with those on the left, that so the fabrick may be the same in one place as in the other, and that the walls may equally bear the burden of the roof; because if the rooms are made large in one part, and small in the other, the latter will be more fit to resist the weight, by reason of the nearness of the walls, and the former more weak, which will produce in time very great inconveniences, and ruin the whole work.

THE most beautiful and proportionable manners of rooms, and which succeed best, are seven, because they are either made round (tho' but seldom) or square, or their length will be the diagonal line of the square, or of a square and a third, or of one square and a half, or of one square and two thirds, or of two squares.

CHAP. XXII.

Of pavements and cielings.

HAVING seen the forms of the loggia's, halls, and rooms, it is proper to speak of their pavements and cielings.

THE pavements are usually made either of *terrazzo*, as is used in *Venice*, bricks or live stones. Those terrazzi are excellent which are made of pounded bricks, and small gravel, and lime of river pebbles, or the *paduan*, well pounded; and ought to be made in spring or in summer, that they may be well dry'd.

THE brick floors, because the bricks may be made of divers forms and of divers colours by reason of the diversity of the chalks, will be very agreeable and beautiful to the eye.

THOSE of live stones are very seldom made in chambers, because they are exceeding cold in winter; but they do very well in the loggia's and publick places.

IT is to be observed, that the chambers which are one behind the other must have their floors

floors even, and in such a manner that the thresholds of the doors be not higher than the remaining part of the chamber-floor; and if any little room or closet should not join with its height to that mark, a *mezato* or false floor ought to be made upon it.

THE cielings are also diversly made, because many take delight to have them of beautiful and well-wrought beams. Where it is necessary to observe, that these beams ought to be distant one from another one thickness and a half of the beam, because the cielings appear thus very beautiful to the eye, and there remains so much of the wall between the ends of the beams, that it is more able to sustain what is over it. But if they are made more distant, they'll not be an agreeable sight; and if they are made less, it will be in a manner dividing the wall above from that below, whereupon, the beams being rotted or burnt, the upper wall must be ruined.

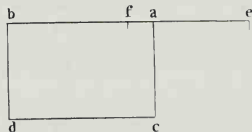
OTHERS are for having compartments of *stucco*, or of wood, in which pictures are placed; and thus being adorn'd according to different inventions, therefore in this no certain and determinate rule can be given.

C H A P. XXIII.

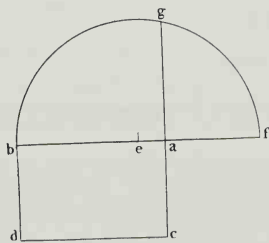
Of the height of the rooms.

THE rooms are either made with a vaulted or flat cieling. If with a flat cieling, the height from the floor to the cieling must be equal to their breadth; and the rooms above must be a sixth part less in height than those below. If vaulted (as those of the first order are usually made, because they thus appear more beautiful, and are less exposed to fires) the height of the vaults in rooms that are square is a third part more than the breadth of the room.

BUT in those which are longer than they are broad, it will be necessary from the length and breadth to seek for the height, that they may bear a proportion to each other. This height will be found in adding the breadth to the length, and dividing the whole into two equal parts, because one of those halves will be the height of the vault. As for example, let bc be the place to be arched; add the breadth, ac , to ab , the length, and let the line eb be made, which is to be divided into two equal parts, in the point f , we'll say fb is the height we seek. Otherwise, let the room to be vaulted be twelve foot long and six broad, add six to twelve, and it will make eighteen, the half of which is nine, the vault ought therefore to be nine foot high.



ANOTHER height, that will be proportionable both to the length and breadth of the room, will also in this manner be found. cb , the place to be vaulted, being set down, we'll add the breadth to the length, and make the line bf ; we'll afterwards divide it into two equal parts in the point e , which being made the centre, we'll make the half circle bgf , and lengthen ac until it touches the circumference in the point g , and ag will give the height of the vault of cb .

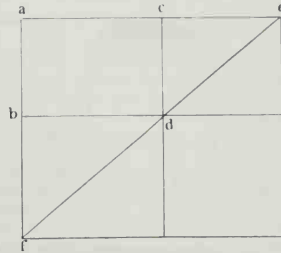


By numbers it will thus be found: The length and breadth of the room in feet being known, we'll find a number that has the same proportion to the breadth as the length has to the number sought. This we find by multiplying the lesser extreme with the greater; because the square root of the number which will proceed from the said multiplication, will be the height we seek. As for example, if the place that we intend to vault be nine foot long, and four wide, the height of the vault will be six foot; and the same proportion that nine has to six, six also has to four, that is the sesquialteral.

BUT

BUT it is to be observed, that it will not be possible always to find this height in whole numbers.

ANOTHER height may be found that will fall short of this, but nevertheless will be proportionable to the room. Draw the lines ab , ac , cd , and bd , that describe the breadth and length of the room, and the height will be found as in the first method, which is ce , this join to ac , then draw the line edf , and lengthen ab until it touches edf in the point f , and bf will be the height of the vault.



THIS may likewise be done with numbers. The height being found, from the length and breadth of the room, according to the first method (which in a foregoing example was nine) the length, breadth and height must be placed as they are in the figure; then nine is to be multiplied with twelve and with six, and that which will proceed from twelve is to be placed under the twelve, and the product of six under the six; afterwards

12	-	9	-	6
108	-	72	-	54
		8		

the six is to be multiplied with twelve, and the product, which is seventy two, placed under the nine; then a number being found which multiplied by nine amounts to seventy two, which in our case would be eight, we'll say eight foot to be the height of the vault.

THESE heights run in this manner between themselves, *viz.* the first is greater than the second, and the second is greater than the third; we'll however make use of each of these heights, according as they may suit with convenience, that several rooms of different dimensions may be so made as to have all their vaults of an equal height, and the said vaults to be nevertheless proportionable to them; from which will result both beauty to the eye, and convenience for the floors that are placed thereon, since they'll all be level.

THERE are also other heights for vaults, which do not come under any rule, and are therefore left for the architect to make use of as necessity requires, and according to his own judgment.

C H A P. XXIV.

Of the several manners of vaults.

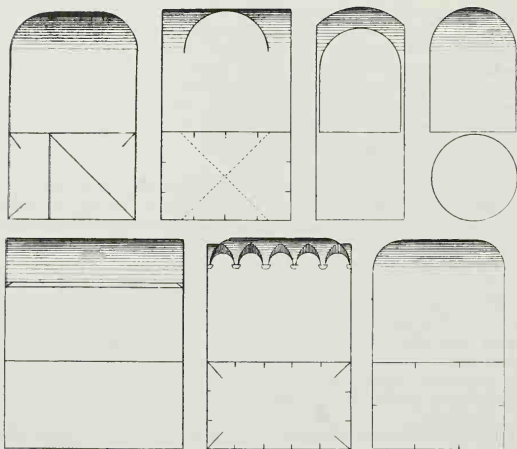
THERE are six manners of vaults, *viz.* cross'd, fasciated, flat (so they call vaults which are a portion of a circle, and do not arrive to a semicircle) circular, groined, and shell-like; all which are a third part of the breadth of the room in height.

THE two last manners have been invented by the moderns, but the four first were used by the antients.

THE circular vaults are made in square rooms, and the manner of making them is thus: In the angles of the room are left some mutules that support the semicircle of the vault, which in the middle is flat, but more circular the nearer it comes to the angles.

THERE is one of this kind in the baths of *Titus* at *Rome*, which was partly ruin'd when I saw it.

I HAVE here put under the forms of all these different manners, applied to the different shapes of the rooms.



CHAP. XXV.

Of the dimensions of the doors and windows.

NO certain and determinate rule can be given for the height and breadth of the principal doors of fabricks, or concerning the doors and windows of rooms; because, in making the principal doors, the architect ought to accommodate them to the bigness of the fabrick, to the quality of the master, and to those things that are to be carried in and out of the same.

THE best way, in my opinion, is to divide the space from the floor to the superficies of the joists, into three parts and a half, (as VITRUVIUS teacheth in the sixth chapter of his fourth book) and allow two to the height, and one to the breadth of the opening, wanting the twelfth part of the height.

THE antients used to make their doors narrower at top than at bottom, as is seen in a temple at *Tivoli*, and which VITRUVIUS also teacheth, perhaps for greater strength.

THE place to be chosen for principal doors, is where a free access may be had to it from all parts of the house.

THE doors of rooms are not to be made wider than three foot, and six and a half high; nor less than two foot in breadth, and five in height.

IT is to be observed in making the windows, that they should not take in more or less light, or be fewer or more in number, than what necessity requires: therefore great regard ought to be had to the largeness of the rooms which are to receive the light from them; because it is manifest, that a great room requires much more light to make it lucid and clear, than a small one: and if the windows are made either less or fewer than that which is convenient, they will make the places obscure, and if too large, they will scarce be habitable, because they will let in so much hot and cold air, that the places, according to the season of the year, will either be exceeding hot or very cold, in case the part of the heavens which they face, does not in some manner prevent it.

THEREFORE the windows ought not to be wider than the fourth part of the breadth of the rooms, or narrower than the fifth, and are to be made two squares and a sixth part of their breadth more in height. And altho' the rooms in a house are made large, middling, and small, the windows, nevertheless, ought to be all equal in the same order or story.

To take the dimensions of the said windows, I like those rooms very much whose length is two thirds more than the breadth, that is, if the breadth be eighteen foot, the length should be thirty, and I divide the breadth into four parts and a half, one I give to the breadth of the void of the window, and two to the height, adding one sixth part of the breadth more; and according to the largeness of these I make those of the other rooms.

THE windows above these, that is, in the second story, ought to be a sixth part less in the height of the void, than those underneath; and in the same manner, if other windows are placed higher, they ought to diminish still a sixth part.

THE windows on the right hand ought to correspond to those on the left, and those above directly over them that are below; and the doors likewise ought to be directly over one another, that the void may be over the void, and the solid upon the solid, and all face one another, so that standing at one end of the house one may see to the other, which affords both beauty and cool air in summer, besides other conveniences.

FOR greater strength, it is usual that the lintels or architraves of the doors and windows may not be overcharged with the weight, to make certain arches which are vulgarly called segments, which contribute very much to the duration of the fabric.

THE windows ought to be distant from the angles or corners of the building, as has been said before, because that part ought not to be opened and weakened, which is to keep the whole edifice upright and together.

THE pilasters or jambs of the doors and windows must not be less in thickness than the sixth part of the breadth of the void, nor more than the fifth.

It remains now that we look into their ornaments.

C H A P. XXVI.

Of the ornaments of doors and windows.

HOW the ornaments of the principal doors of a building ought to be made, may easily be known by what VITRUVIUS teacheth in the sixth chapter of the fourth book, (adding withal what the most reverend BARBARO says and shews in his design upon that subject) and by what I have hitherto said and designed in all the five orders.

BUT setting these aside, I shall only give some profiles of the ornaments of the doors and windows of rooms according as they may be differently made, and shew how to mark each member in particular, that it may be graceful and have a due projection.

THE ornaments given to doors and windows, are the architrave, frize, and cornice: the architrave goes round the door, and must be as thick as the jambs or pilasters, (which I have said ought not to be less thick than the sixth part of the breadth of the void, nor thicker than the fifth) from which also the frize and cornice take their thickness.

THE first or uppermost of the two designs which follow, has these measures: the architrave is divided into four parts, three of which are for the height of the frize, and five for that of the cornice. The architrave is again divided into ten parts, three of which go to the first fascia, four to the second, and the remaining three parts are subdivided into five, two are given to the *regolo* or orlo, and the remaining three to the gola reverfa, which is otherwise called *intavolato*. Its projection is equal to its height. The orlo projects less than half its thickness.

THE *intavolato* is in this manner marked; a straight line must be drawn that ends at the extremities of that under the orlo, and upon the second fascia, and to be divided in the middle,

dle, making each of the halves the base of a triangle of two equal sides; then placing the fixed foot of the compasses in the angle opposite to the base, draw the curve lines which form the said intavolato.

THE frize is three parts of the four of the architrave, and is to be marked with a segment of a circle less than half a circle, and with its swelling comes directly to the cimacio of the architrave.

THE five parts which are given to the cornice, are in this manner distributed to its members; one is given to the cavetto with its listello, which is a fifth part of the cavetto: the cavetto projects three parts in two of its height. To mark it a triangle must be formed of two equal sides, and the angle C made the center, so that the cavetto will be the base of the triangle: another of the said five parts is given to the ovolo, whose projection is two parts in three of its height; to mark it a triangle must be formed of two equal sides, and the point H made the center: the other three are divided into seventeen parts, eight are given to the corona or goccioiatoio, with its listello, of which that above is one of the said eight parts, and that below which makes the hollow of the goccioiatoio, is one of the six parts of the ovolo: the other nine are given to the gola diritta, and to its orlo, which is one part of the three of the said gola. To form it well, and make it graceful, the straight line AB must be drawn, and divided into two equal parts, in the point C; one of these must be divided into seven parts, six of which must be taken in the point D, to form the two triangles AEC, and CBF, and in the points E and F the fixed foot of the compasses must be placed to describe the segments of a circle AC and CB, which form the gola.

THE architrave likewise, in the second invention, is to be divided into four parts, three of which make the height of the frize, and five that of the cornice.

THE architrave must be divided into three parts, two of which must be subdivided into seven, and three given to the first fascia, and four to the second; the third part must be divided into nine; with two the tondino is made, and the other seven are to be subdivided into five, three of which form the intavolato, and two the ovolo.

THE height of the cornice is divided into five parts and three quarters, one of these must be divided into six, and five given to the intavolato over the frize, and one to the listello; the projection of the intavolato is equal to its height, as also of the listello. Another is given to the ovolo, whose projection is three parts of four of its height: the gradetto over the ovolo is a sixth part of the ovolo, and its projection the same: the other three are divided into seventeen, eight of which are given to the goccioiatoio, whose projection is four parts of three of its height; the other nine are divided into four, three of which are given to the gola, and one to the orlo: the three quarters that remain must be divided into five parts and a half; with one is made the gradetto, and with the other four and a half its intavolato over the goccioiatoio. The projection of this cornice is equal to its thickness.

The members of the cornice of the first invention.

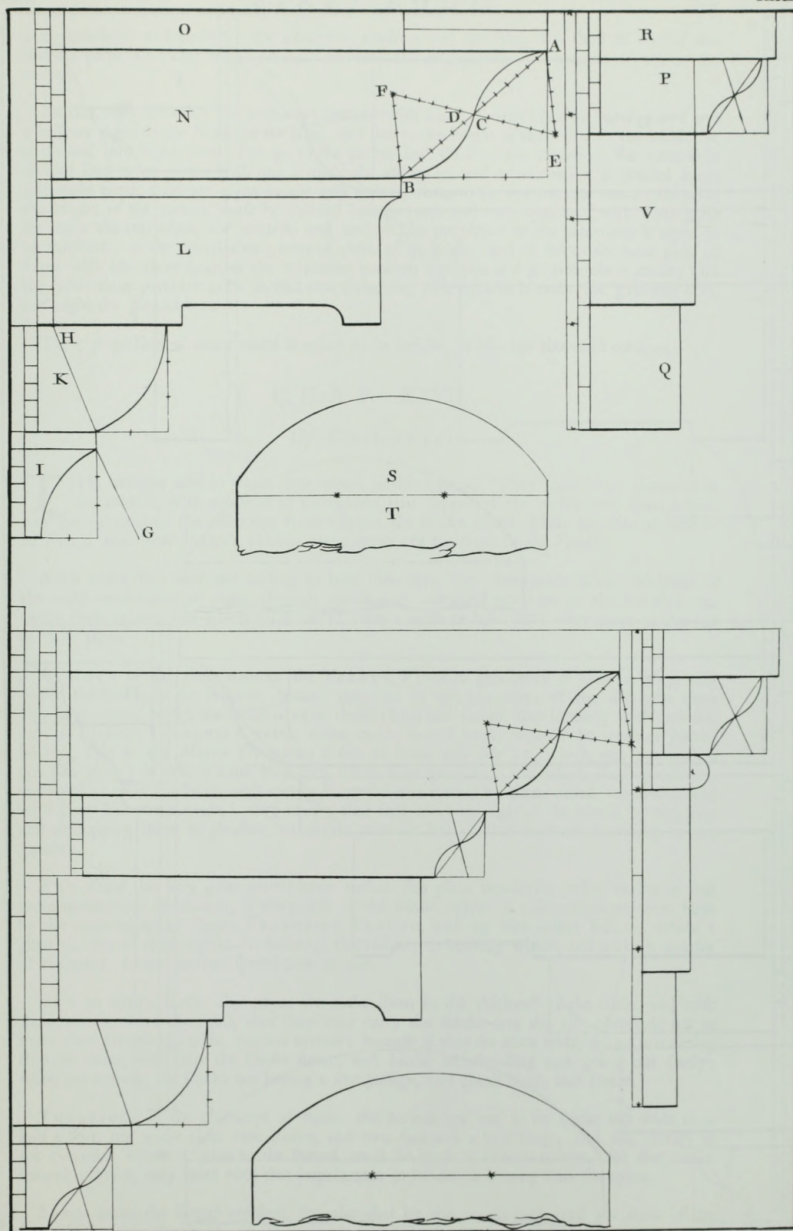
I, <i>Cavetto.</i>	N, <i>Gola.</i>
K, <i>Ovolo.</i>	O, <i>Orlo.</i>
L, <i>Goccioiatoio.</i>	

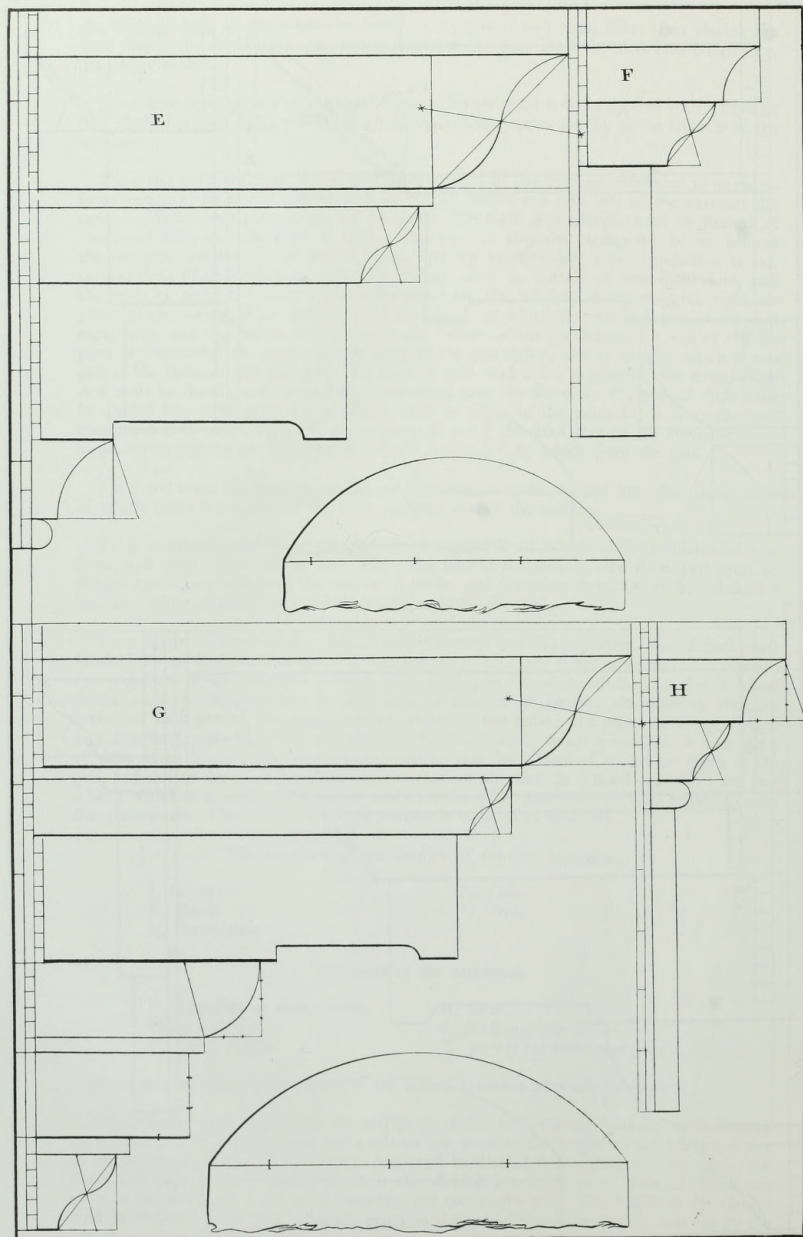
Members of the architrave.

P, <i>Intavolato or Gola reversa.</i>	R, <i>Orlo.</i>
Q, <i>first Fascia.</i>	S, <i>swelling of the Frize.</i>
V, <i>second Fascia.</i>	T, <i>part of the Frize that goes into the wall.</i>

By means of these the members of the second invention may also be known.

OF these two other inventions, the architrave of the first, marked with F, must likewise be divided into four parts; three and a quarter are given to the height of the frize, and five to the height of the cornice. The architrave must be divided into eight parts, five go to the *piano*, and three to the cimacio; which is also divided into eight parts, three of which are given to the intavolato, three to the cavetto, and two to the orlo. The height of the cornice must be divided into six parts; two are given to the gola diritta with its orlo, and one to the intavolato; then the said gola must be divided into nine parts, with eight of which is made the





the goccioloito and gradetto : the atragal or tondino over the frize, is a third of one of the said fix parts, and that which remains between the goccioloito and tondino is left to the cavetto.

IN the other invention the architrave marked with H, is divided into four parts ; three and a half are given to the height of the frize, and five to the height of the cornice : the architrave is divided into eight parts ; five go to the piano, and three to the cimacio : the cimacio is divided into seven parts ; with one is made the atragallo, and what remains is divided again into eight parts, three are given to the gola reverfa, three to the cavetto, and two to the orlo : the height of the cornice must be divided into six parts and three quarters ; with three parts are made the intavolato, the dentello and ovolo. The projection of the intavolato is equal to its thicknefs ; of the dentello two parts of three of its height, and of the ovolo three parts of four : with the three quarters the intavolato between the gola and goccioloito is made ; and the other three parts are to be divided into feventeen, nine of which make the gola and orlo, and eight the goccioloito.

THE projection of this cornice is equal to its height, as alfo the abovefaid cornices.

CH A P. XXVII.

Of CHIMNEYS.

THE antients ufed to warm their rooms in this manner. They made their chimneys in the middle, with columns or modiglions that fupported the architraves, upon which was the pyramid of the chimney, from whence the fmoke ifued. There was one of thefe to be feen at *Baie* near *NERO's* pifcina, and another not far from *Civita Vecchia*.

AND when they were not willing to have chimneys, they then made in the thicknefs of the walls fome tubes or pipes, through which they conveyed the heat of the fire that was under thofe rooms, and which came out of certain vents or holes that were made at the top of thofe pipes.

ALMOST in the fame manner the *TRENTI*, *Vicentine* gentlemen at *Coffoza*, their villa cooled the rooms in the fummer, becaufe there are in the mountains of the faid villa fome very large caves, which the inhabitants of thofe places call *Couali*, that formerly were quarries, (which I believe *VITRUVIUS* means, when in the fecond book, wherein he treats of ftones, he fays, that in the *Marca Trivigiana* a fort of ftone was dug up, which was cut with a faw like wood) in which fome very cool winds were generated, and which thofe gentlemen conveyed to their houfes through certain fubterraneous vaults, by them called ventiducts, and with pipes like the abovefaid, they convey that cool wind through all the rooms, by flopping and unflopping them at pleafure, to receive more or lefs of that cool air according to the feafons.

AND altho' this very great convenience makes this place wonderful, what makes it ftill more worthy our admiration, is the prifon of the winds, which is a fubterraneous room built by the moft excellent Signor *FRANCESCO TRENTO*, and by him called *EOLIA*, where a great number of thofe ventiducts difcharge themfelves ; to beautify which, and make it worthy of the name, he has neither fpared coft or care.

BUT to return to the chimneys ; we make them in the thicknefs of the walls, and raife their funnels above the roofs, that they may carry the fmoke into the air : obferving not to make their funnels too wide, nor too narrow ; becaufe if they are made wide, the air wandering through them, will drive the fmoke down, and hinder its afcending and going out freely ; when too narrow, the fmoke not having a free paffage, will choak it up, and return.

THEREFORE in the chimneys of rooms the funnels are not to be made lefs wide than half a foot, nor wider than nine inches, and two foot and a half long ; and the mouth of the pyramid, where it joins to the funnel, must be made a little narrower, that the fmoke returning down, may meet with that impediment to hinder its coming into the room.

SOME make the funnel crooked, in order that by this crookednefs, and the force of the fire, which drives the fmoke up, they may prevent the fmoke from returning back.

THE top of the chimneys, or the holes thro' which the smoke is to go out, ought to be wide, and far from any combustible matter. The mantle-trees upon which the pyramid of the chimneys are made, ought to be very neatly wrought, and in every thing far from being rustick; because rustick work is not proper, unless it be in very great edifices, for the reasons already mentioned.

CHAP. XXVIII.

Of stairs, and the various kinds of them; and of the number and size of the steps.

GREAT care ought to be taken in the placing of stair-cases, because it is no small difficulty to find a situation fit for them, and that doth not impede the remaining part of the fabrick: A proper place must therefore be principally given them, that they may not obstruct other places, nor be obstructed by them.

THREE openings are required in stair-cases; the first is the door thro' which one goes up to the stair-case, which the less it is hid to them that enter into the house, so much the more it is to be commended. And it would please me much, if it was in a place, where before that one comes to it, the most beautiful part of the house was seen; because it makes the house (altho' it should be little) seem very large; but however, let it be manifest, and easily found. The second opening is the windows that are necessary to give light to the steps; they ought to be in the middle, and high, that the light may be spread equally every where alike. The third is the opening thro' which one enters into the floor above; this ought to lead us into ample, beautiful, and adorned places.

THE stair-cases will be commendable if they are clear, ample, and commodious to ascend, inviting, as it were, people to go up: They will be clear, if they have a bright light, and if (as I have said) the light be diffused equally every where alike: They will be sufficiently ample, if they do not seem scanty and narrow to the largeness and quality of the fabrick; but they are never to be made less wide than four foot, that if two persons meet, they may conveniently give one another room: They will be convenient with respect to the whole building, if the arches under them can serve to lodge some necessaries; and with respect to men, if their ascent is not too steep and difficult: therefore their length must be twice their height.

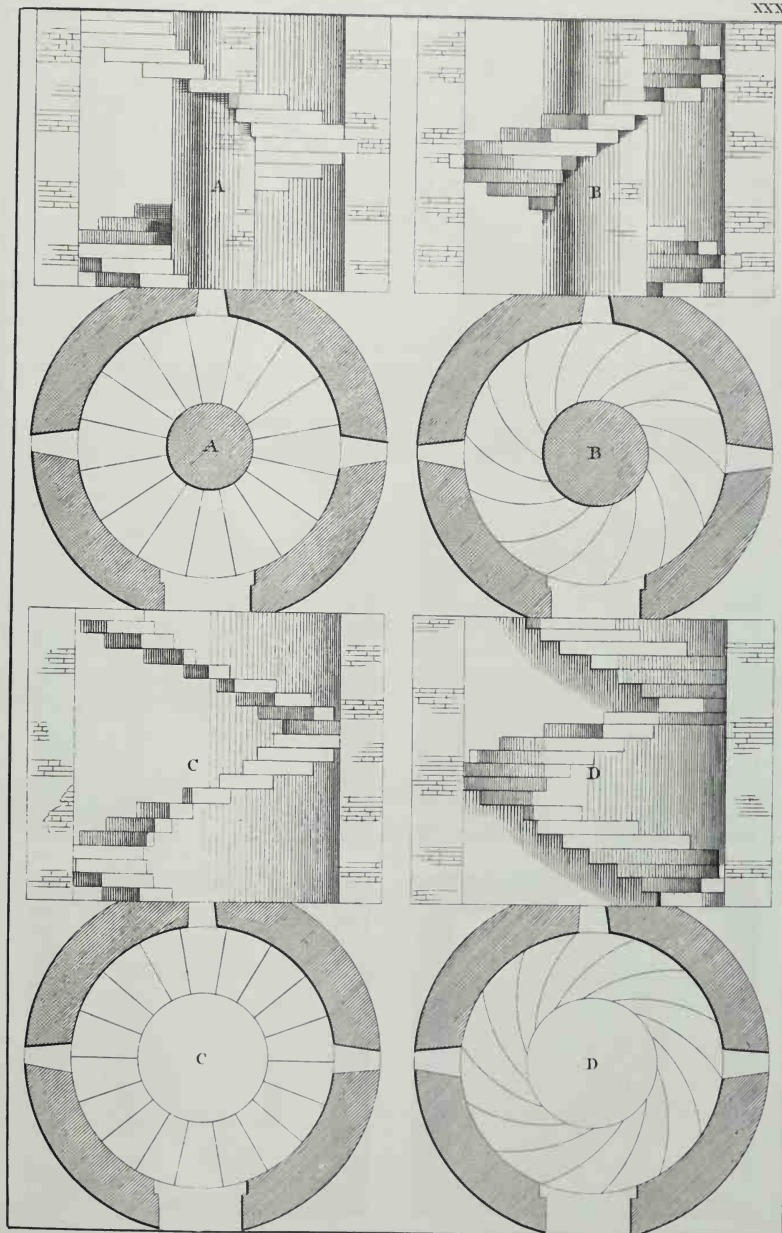
THE steps ought not to be made higher than six inches of a foot; and if they are made lower, particularly in long and continued stairs, it will make them the more easy, because in rising one's self the foot will be less tired; but they must never be made lower than four inches: the breadth of the steps ought not to be made less than one foot, nor more than one and a half.

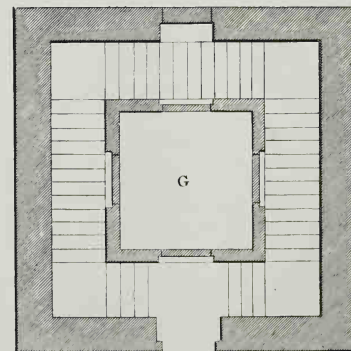
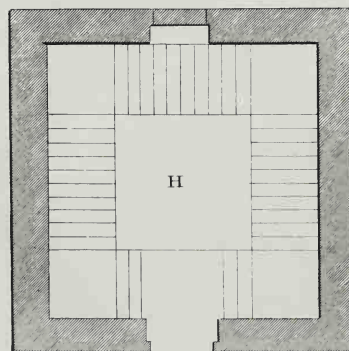
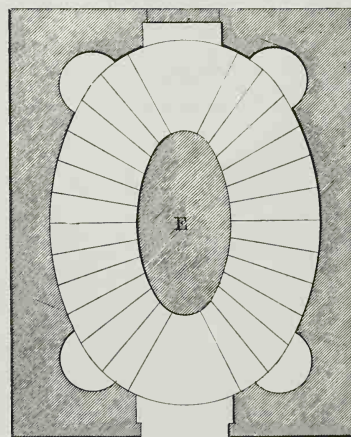
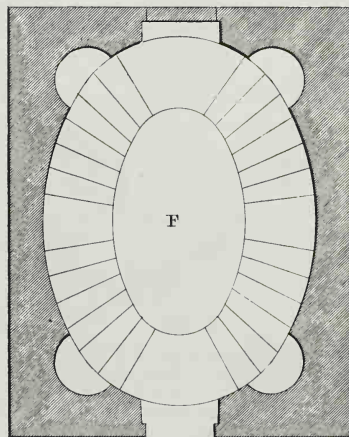
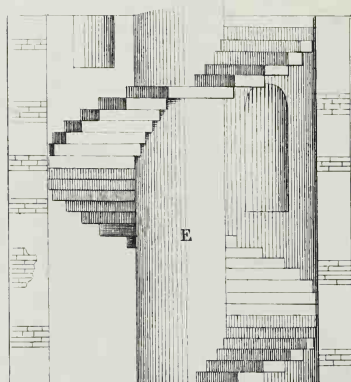
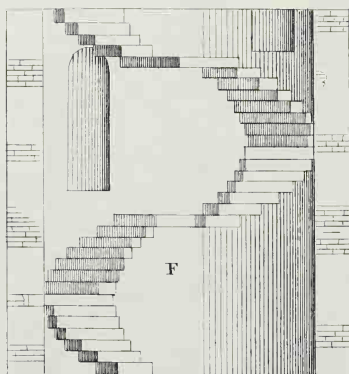
THE antients observed to make the steps uneven in number, that beginning to go up with the right foot, one might end with the same; which they look'd upon as a good omen, and of greater devotion when they entered the temple: The number of steps is not to exceed eleven, or thirteen at most, before you make a floor or resting-place, that the weak and weary may find where to rest themselves, if obliged to go up higher, and be able more easily to stop any thing that should happen to fall from above.

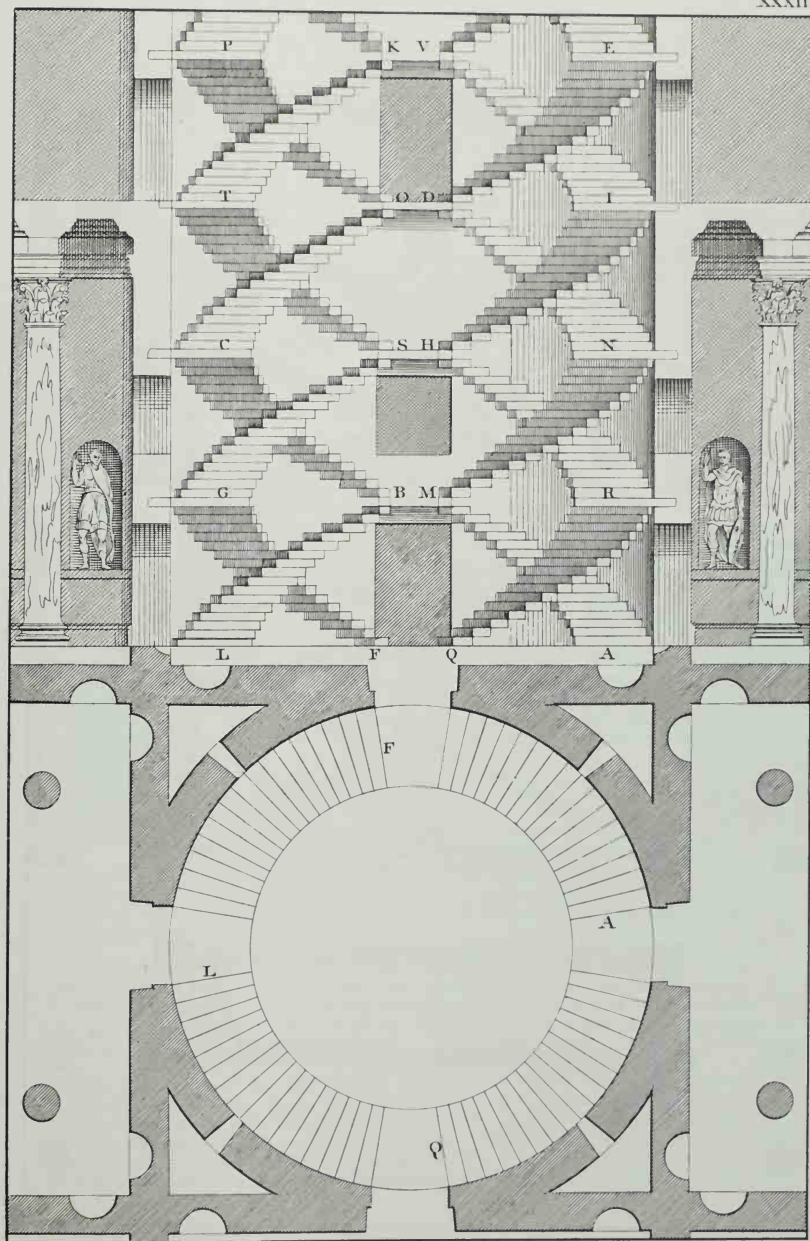
STAIR-CASES are either made straight or winding; the straight are either made to spread into two branches, or square, which turn into four branches: To make these, the whole place is to be divided into four parts, two are given to the steps, and two to the void in the middle, from which these stairs would have light, if it was left uncovered: They may be made with the wall within, and then in the two parts which are given to the steps, this wall is also included; and they may also be made without.

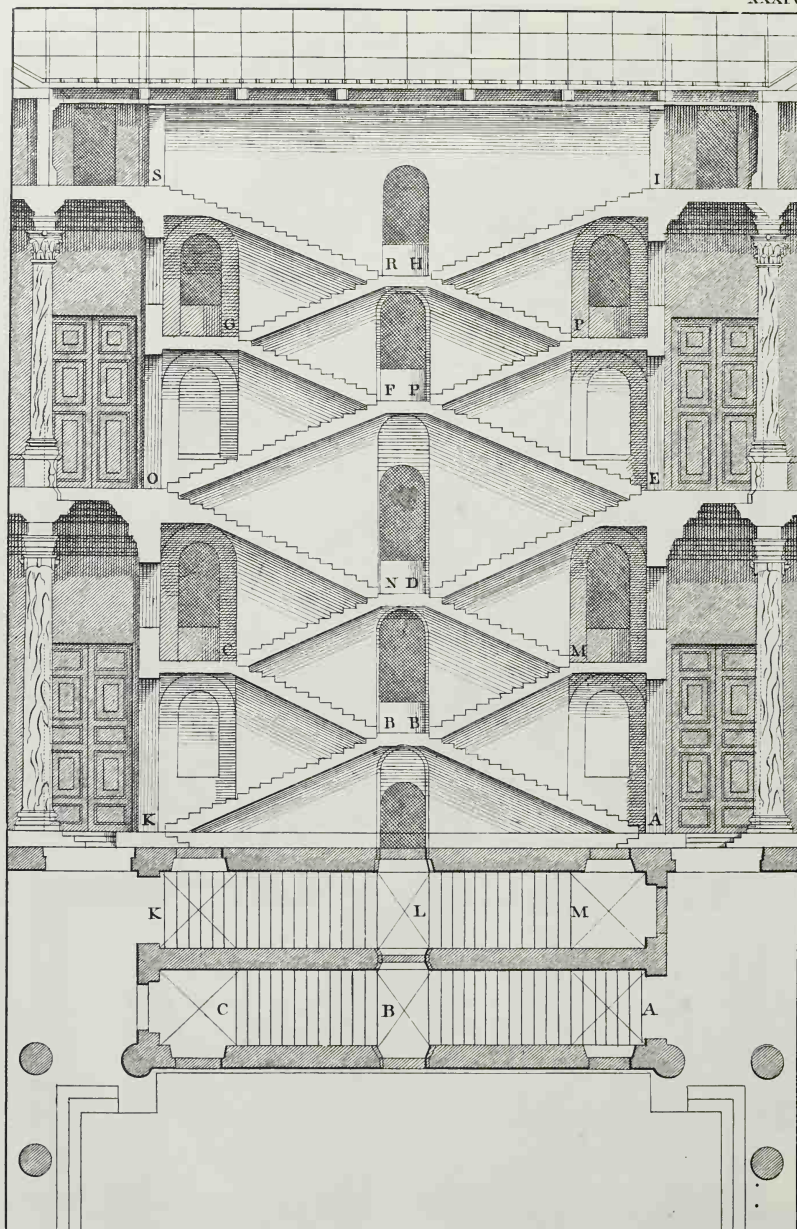
THESE two sorts of stair-cases were invented by the magnificent Signor LUIGI CORNARO, a gentleman of an excellent judgment, as may be known by the most beautiful loggia, and the most elegantly adorned rooms which he built for his habitation at Padua.

THE winding stair-cases (that are also called *a chiocciola*) are in some places made round, in others oval, sometimes with a column in the middle, and sometimes void, in narrow places
parti-









particularly, because they occupy less room than the straight, but are somewhat more difficult to ascend. They succeed very well that are void in the middle, because they can have the light from above, and those that are at the top of the stairs, see all those that come up, or begin to ascend, and are likewise seen by them: Those that have a column in the middle, are made in this manner; the diameter being divided into three parts, let two be left to the steps, and one given to the column, as in the design A, or let the diameter be divided into seven parts, and three given to the column in the middle, and four to the steps; and in this manner exactly is made the stair-case of the column of *TRAJAN*. And if the steps are made crooked, as in the design B, they will be very beautiful to look at, and longer than if they are made straight: but in those that are void, the diameter must be divided into four parts; two are given to the steps, and two remain for the place in the middle.

BESIDES the usual manners of stairs, there was another sort of winding stair-case invented by the Clarissimo Signor *MARC' ANTONIO BARBARO*, a *Venetian* gentleman of a fine genius, which in very narrow places serves very well: it has no column in the middle; and because the steps are crooked, they are very long, and must be divided as the above-said.

THE oval stair-cases are also divided in the very same manner as the round; they are very beautiful and agreeable to see, because all the windows and doors come to the head of the oval, and in the middle, and are sufficiently commodious.

I HAVE made a stair-case void in the middle, in the monastery *de la Carita* in *Venice*, which succeeds admirably.

- A, *The winding stair-case with a column in the middle.*
- B, *The winding stair-case with a column, and with crooked steps.*
- C, *The winding stair-case void in the middle.*
- D, *The winding stair-case void in the middle, and with crooked steps.*
- E, *The oval stair-case with the column in the middle.*
- F, *The oval stair-case without a column.*
- G, *The straight stair-case with the wall within.*
- H, *The straight stair-case without the wall.*

ANOTHER beautiful sort of winding stairs was made at *Chambor*, (a place in *France*) by order of the magnanimous King *FRANCIS*, in a palace by him erected in a wood, and is in this manner: there are four stair-cases, which have four entrances, that is, one each, and ascend the one over the other in such a manner, that being made in the middle of the fabric, they can serve to four apartments, without that the inhabitants of the one go down the stair-case of the other, and being open in the middle, all see one another going up and down, without giving one another the least inconvenience; and because it is a new and a beautiful invention, I have inserted it, and marked the stair-cases with letters in the plan and elevation, that one may see where they begin, and how they go up.

THERE were also in the portico's of *POMPEY* in *Rome*, going into the piazza *Giudea*, three winding stair-cases of a very laudible invention, because being placed in the middle, where they could receive no light but from above, they were made upon columns, that the light might spread equally every where.

IN imitation of these, *BRAMANTE*, a most excellent architect in his time, made one in *Bekvedere* without steps, and with the four orders in architecture, that is, the Dorick, Ionick, Corinthian and Composite. To make such stair-cases, the whole space is to be divided into four parts; two are given to the void in the middle, and one of a side to the steps and columns.

MANY other sorts of stair-cases are to be seen in antient edifices, such as triangular; of this kind are the stairs that lead to the cupul of *Santa Maria Rotonda*, and are void in the middle, and receive the light from above. Those were also very magnificent that are at *Santo Apollolo* in the said city, and go up to *Monte Cavallo*: those stair-cases were double, from which many have since taken example, and did lead to a temple placed on the top of the mountain, as I shall shew in my *book of temples*; and the last design is of this sort.

C H A P. XXIX.

Of R O O F S.

THE walls being raised up to their summit, the vaults made, the joysts of the floors laid, the stair-cases, and all those things accommodated of which mention has been made before, it is necessary to make the roof; which embracing every part of the fabrick, and with its weight pressing equally upon the walls, is a kind of a ligament to the whole work, and besides defending the inhabitants from rain, snow, the scorching sun, and moisture of the night, it is no small assistance to the fabrick, in casting off the water from the walls when it rains, which altho' they may seem to be but of little prejudice, are, nevertheless, in time the cause of great damages.

OUR forefathers (as may be read in *VITRUVIUS*) used to make the roofs of their habitations flat; but perceiving that they were not sheltered from rain, compelled by necessity, began to make them ridged, or raised in the middle.

THESE ridges ought to be made higher or lower, according to the regions where one builds; therefore in *Germany*, by reason of the great quantity of snow that falls there, the roofs are made very acute, and covered with shingles, which are small pieces of boards, or with very thin tiles; which roofs, if they were otherwise made, would be destroyed by the weight of the snow: But we that live in temperate regions, ought to chuse that height which makes a roof appear agreeable and with a beautiful form, and that easily carries off the rain.

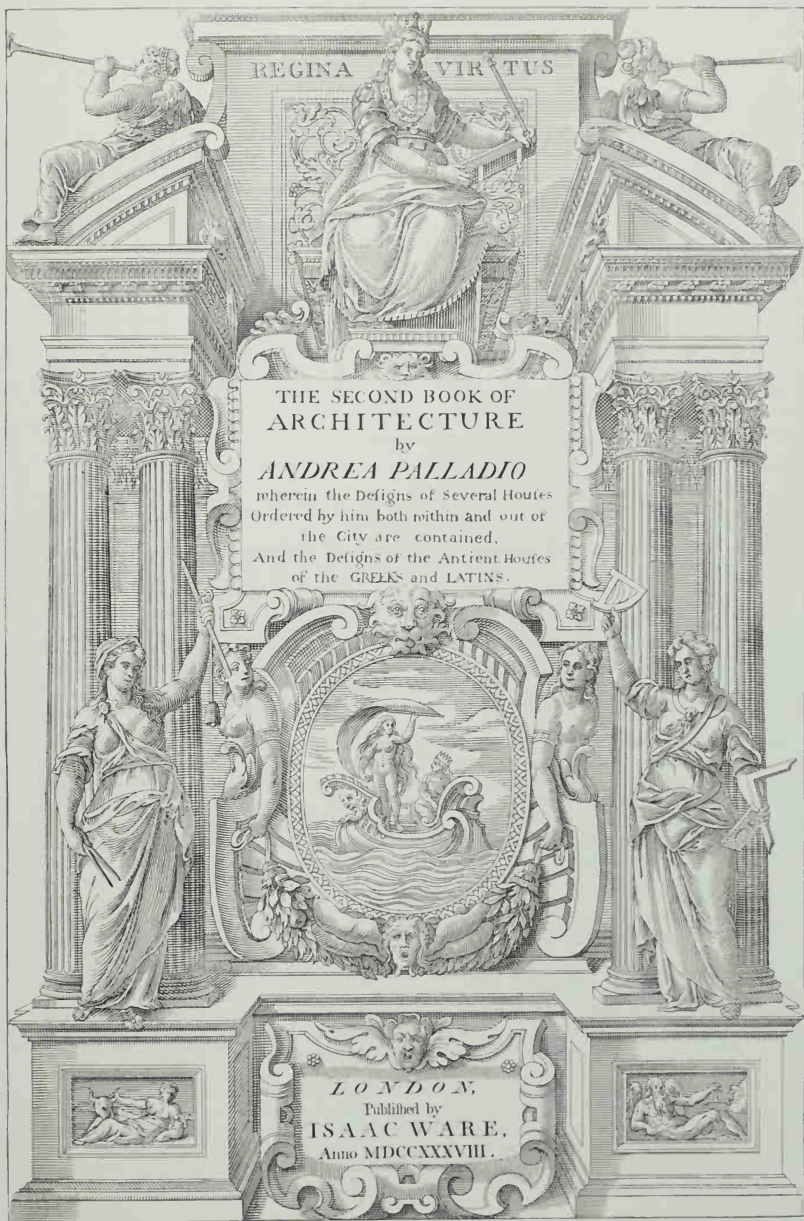
THEREFORE the breadth of the place to be roofed, must be divided into nine parts, and two given to the height of the ridge; for if it is made with a fourth of the breadth, the roof will be too steep, whereby the tiles will be fastened with great difficulty; and if a fifth is given, it will be too flat, and therefore the tiles and shingles would be very much charged when the snows fall.

GUTTERS are usually made round the houses, into which the water falling from the tiles, is by spouts thrown away a great distance from the wall: these ought to have a foot and a half of wall over them, which, besides holding them firm, will defend the timber of the roof from receiving damage in any part from the water.

THERE are various manners of disposing the timber of the roofs; but when the middle walls support the beams, they are very easily accommodated; which method pleaseth me very much, because the out-walls do not bear so much weight, and altho' the head of some beam should rot, the roof is notwithstanding in no danger.

The END of the FIRST BOOK.





REGINA VIR TUS

THE SECOND BOOK OF
ARCHITECTURE
by
ANDREA PALLADIO
wherein the Designs of Several Houses
Ordered by him both within and out of
the City are contained.
And the Designs of the Antient Houses
of the GREEKS and LATINs.

LONDON,
Published by
ISAAC WARE,
Anno MDCCXXXVIII.

THE SECOND BOOK

O F

Andrea Palladio's

ARCHITECTURE.

CHAPTER I.

Of the decorum or conveniency that ought to be observed in private fabrics.

I HAVE explained in the foregoing book all those things, that to me seemed most worthy of consideration for the building of public edifices, and private houses, that the work might be beautiful, graceful and durable: I have there also mentioned some things belonging to the conveniency of private houses, to which this other book shall chiefly be applied: for that house only ought to be called convenient, which is suitable to the quality of him that is to dwell in it, and whose parts correspond to the whole and to each other.

BUT the architect ought above all to observe, that (as VITRUVIUS says in the first and sixth book) for great men, and particularly those in a republic, the houses are required with loggia's and spacious halls adorned, that in such places those may be amused with pleasure, who shall wait for the master to salute, or ask him some favour: and for gentlemen of a meaner station, the fabrics ought also to be less, of less expence, and have fewer ornaments. For judges and advocates, they ought likewise to be so built, that in their houses there may be handsome and well adorned places to walk in, that their clients may remain there without inconvenience.

MERCHANTS houses ought to have places facing the north, where their merchandizes may be lodged; and to be so disposed, that the master may not be in fear of thieves.

DECORUM is also to be observed in regard to the work, if the parts so answer to the whole, as that in great edifices there may be great members, in the little, small, and middling in the middle-sized: for what a disagreeable and unseemly thing would it be, if in a very large fabric there should be small halls and rooms; and, on the contrary, in a little one, there should be two or three rooms that took up the whole.

As much as possible, one ought therefore, as has been said, to have a regard to those who are inclined to build; and not so much to mind what they can afford to lay out as the quality of the building that is proper for them: when that is settled, the parts are to be so disposed, that they may be suitable to the whole, and to each other, and such ornaments are to be applied as shall seem most proper. But an architect is very often obliged, to conform more to the will of those who are at the expence, than to that which ought to be observed.

C H A P. II.

Of the compartment or disposition of rooms, and of other places.

THAT the houses may be commodious for the use of the family, without which they would be greatly blame-worthy, far from being commendable, great care ought to be taken, not only in the principal parts, as the loggia, halls, courts, magnificent rooms, and ample stairs, light and easy of ascent; but also, that the most minute and least beautiful parts be accommodated to the service of the greatest and more worthy: for as in the human body there are some noble and beautiful parts, and some rather ignoble and disagreeable, and yet we see that those stand in very great need of these, and without them they could not subsist; so in fabricks, there ought to be some parts considerable and honoured, and some less elegant; without which the other could not remain free, and so consequently would lose part of their dignity and beauty. But as our Blessed Creator has ordered these our members in such a manner, that the most beautiful are in places most exposed to view, and the less comely more hidden; so in building also, we ought to put the principal and considerable parts, in places the most seen, and the less beautiful, in places as much hidden from the eye as possible; that in them may be lodged all the foulness of the house, and all those things that may give any obstruction, and in any measure render the more beautiful parts disagreeable. I approve therefore that in the lowest part of the fabric, which I make somewhat underground, may be disposed the cellars, the magazines for wood, pantries, kitchens, servants-halls, wash-houses, ovens, and such like things necessary for daily use. From which disposition follow two conveniencies, the one, that the upper part remains all free; and the other and no less important, is, that the said upper apartments are wholesomer to live in, the floor being at a distance from the damp of the ground; besides as it rises, it is more agreeable to be looked at, and to look out of. It is also to be observed, that in the remaining part of the fabric there may be great, middle-sized, and small rooms, and all near one another, that they may reciprocally be made use of.

THE small rooms may be divided off, to make closets where studies or libraries may be placed, riding accoutrements and other lumber, which may be every day wanted, and which would not be so proper to be in rooms, where one either sleeps, eats, or where strangers are received.

WHAT contributes also to conveniency is, that the rooms for summer be ample, spacious and turned to the north; and those for the winter to the south and west, and rather small than otherwise: because we seek the shades and winds in summer, and in winter the sun; besides small rooms are much more easily warmed than large.

BUT those which we would make use of in spring and autumn, must be turned to the east, and ought to look over greens and gardens. In this particular part, studies and libraries ought also to be; because the morning is the most proper time of all other to make use of them.

BUT the large rooms with the middling, and those with the small, ought to be so distributed, that, as I have elsewhere said, one part of the fabric may correspond with the other; and that so the body of the edifice, may have in itself a certain convenience in its members, that may render the whole beautiful and graceful.

BUT as most commonly in cities, either the neighbours walls, the streets, or publick places, prescribe certain limits, which the architect cannot surpass, it is proper he should conform himself to the circumstances of the situation; to which, if I mistake not, the following plans and elevations will give a great insight, and which may also serve as an example of what has been said in the foregoing book.

CHAP. III.

Of the designs of town-houses.

I AM convinced, that in the opinion of those, who shall see the following fabrics, and know how difficult it is to introduce a new custom, especially in building, of which profession every one is persuaded that he knows his part, I shall be esteemed very fortunate, to have found gentlemen of so noble and generous a disposition, and of such excellent judgment, as to have hearkened to my reasons, and departed from that antiquated custom of building without grace or any beauty at all; and, indeed, I cannot but very heartily thank God, as we ought in all our actions to do, for granting me such a share of his favour, as to have been able to put in practice many of those things, which I have learnt from my very great fatigues and voyages, and by my great study.

AND altho' some of the designed fabrics are not entirely finished, yet may one by what is done comprehend what the whole will be when finished. I have prefixed to each the name of the builder, and the place where they are, that every one may, if he pleases, really see how they succeed.

AND here the reader may take notice, that in placing the said designs, I have had respect neither to the rank or dignity of the gentlemen to be mentioned; but I have inserted them where I thought most convenient: not but they are all very honourable.

LET us now come to the fabrics, of which the following is in *Udene* the metropolis Plate 1.
of *Friuli*, and was raised from the foundation by Signor *FLORIANO ANTONINI*, a gentleman of that city. The first order of the front is of rustic work, the columns of the front, of the entrance, and of the loggia backwards are of the Ionick order. The first rooms are vaulted; the greater have the height of the vaults according to the first method before-mentioned, for the height of vaults in places that are longer than they are broad. The rooms above have flat ceilings, and so much wider than those below, as the contraction or diminution of the walls, and the height of the ceilings, equal to their breadth. Over these are other rooms which may serve for granaries. The height of the hall reaches to the roof. The kitchen is out of the house, but very commodious nevertheless. The necessary places are on the sides of the stairs, and although they are in the body of the fabric, they do not give any offensive smell; because they are placed in a part remote from the sun, and have vents from the bottom of the pit all through the thickness of the wall, to the very summit of the house.

THIS line is half the *Vicentine* foot, with which the following fabrics have been measured.

THE whole foot is divided into twelve inches, and each inch into four minutes.

IN *Vicenza* upon the *Piazza*, which is vulgarly called the *Ijola*, the Count *VALERIO CHIERICATO*, an honourable gentleman of that city, has built according to the following Plate 2.
invention.

THIS fabric has in the part below a loggia forwards, that takes in the whole front: the pavement of the first order rises above ground five foot; which has been done not only to put the cellars and other places underneath, that belong to the conveniency of the house, which wou'd not have succeeded if they had been made intirely under ground, because the river is not far from it; but also that the order above might the better enjoy the beautiful situation forwards. The larger have rooms the height of their vaults, according to the first method for the height of vaults: the middle-sized are with groined vaults, and their vaults as high as those of the larger. The small rooms are also vaulted, and are divided off. All these
vaults

vaults are adorned with most excellent compartments of stucco, by Messer BARTOLOMEO RIDOLFI, a *Veronese* sculptor; and paintings by Messer DOMENICO RIZZO, and Messer BATTISTA VENETIANO, men singular in this profession. The hall is above in the middle of the front, and takes up the middle part of the loggia below. Its height is up to the roof; and because it projects forward a little, it has under the angles double columns. From one part to the other of this hall, there are two loggia's, that is, on each side one; which have their soffites or ceilings adorned with very beautiful pictures, and afford a most agreeable sight. The first order of the front is Dorick, and the second Ionick.

Plate 3. HERE follows the design of part of the front in a large form.

Plate 4. THE following designs are of the house of the Count ISEPPO DE PORTI, a very noble family of the said city. This house fronts two publick streets, and therefore has two entrances, which have four columns each, that support the vault, and render the place above it secure. The first rooms are vaulted. The height of those, that are on each side the said entrances, is according to the last method for the height of vaults. The second rooms, that is, of the second order, are with flat cielings: and thus the first, as well as the second of that part of the fabrick, which has been done, are adorned with paintings, and most beautiful stucco's, by the hands of the aforesaid excellent artists, and of Messer PAOLO VERONESE, a most excellent painter. The court encompassed with portico's, to which one goes from the said entrances by a passage, is to have columns six and thirty foot and an half high, that is, as high as the first and second order. Behind these columns there are pilasters one foot and three quarters broad, and one foot and two inches thick, which support the pavement of the loggia above. This court divides the whole house into two parts: that forwards is for the use of the master, and the women belonging to him; and that backward to lodge strangers in; whereby those of the house, and the strangers will remain free in every respect: to which the ancients, and especially the *Greeks*, had a very great regard.

BESIDES which, this partition will also serve in case the descendants of the said gentleman, shou'd chuse to have their apartments separate.

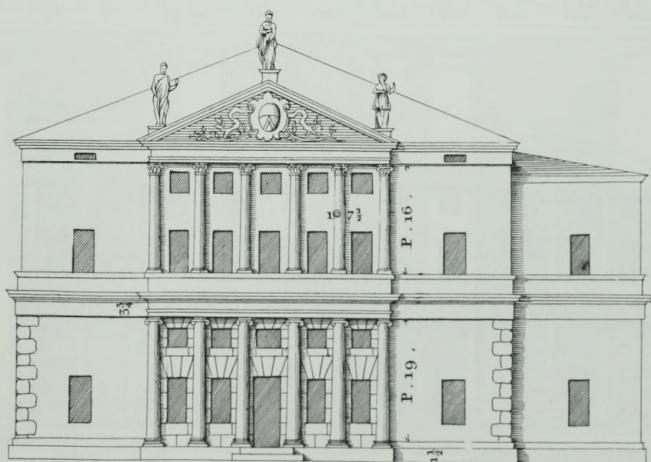
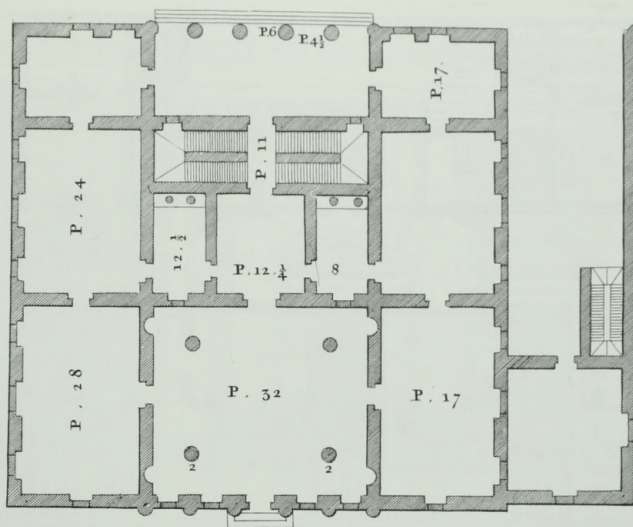
I HAVE placed the principal stairs under the portico, that they may answer to the middle of the court; that those who have a mind to go up, may as it were be compelled to see the most beautiful part of the fabrick; and also, that being in the middle, they may serve one part as well as the other. The cellars and such-like places are under ground. The stables are out of the square of the house, and have their entrance under the stairs. Of the designs in

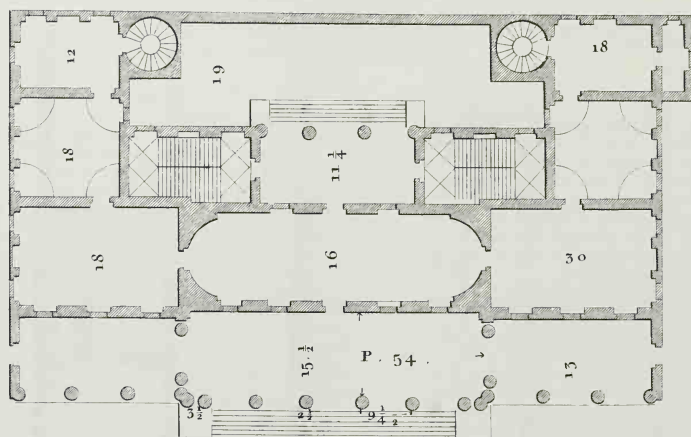
Plate 5, 6. a large form, the first is of part of the front, and the second of the part towards the court.

Plate 7. THE following fabrick is in *Verona*, and was begun by the Count GIOVANNI BATTISTA DELLA TORRE, a gentleman of that city, who being overtaken by death, could not finish it; but there is a great part of it done. One goes into this house by the flanks, where the passages are ten feet wide; from which one comes into the courts, each fifty feet long; and from these into an open hall, which has four columns for the greater security of the vault above. From this hall one goes to the stairs, which are oval, and open in the middle. The said courts have corridors or balconies round them, level with the floor of the second rooms. The other stairs serve for the greater conveniency of the whole house. This compartment succeeds extremely well in this situation; which is long and narrow, and has the principal street towards one of the lesser fronts.

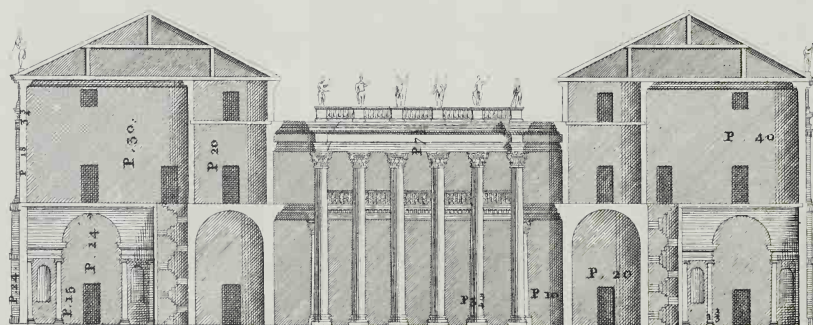
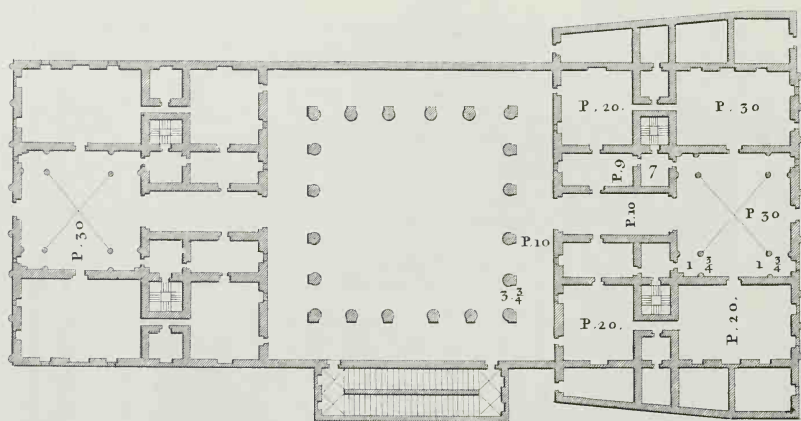
Plate 8. THE following designs are of a fabrick in *Vicenza*, of the Count OTTAVIO DE THIENI: It belonged to Count MARC' ANTONIO, who began it. This house is situated in the middle of the city, near the piazza, and therefore I have thought proper to dispose of that part towards the piazza into shops: because the architect is also to consider the advantage of the builder, when it can be done conveniently, and where the situation is sufficiently large. Every shop has over it a mezzato for the use of the shop-keeper; and over them are the rooms for the master.

THIS house is insular, that is, encompassed by four streets. The principal entrance, or as one may say, the master-gate, has a loggia forwards, and fronts the most frequented street of the city. The great hall is to be above; which will project even with the loggia. There are
two

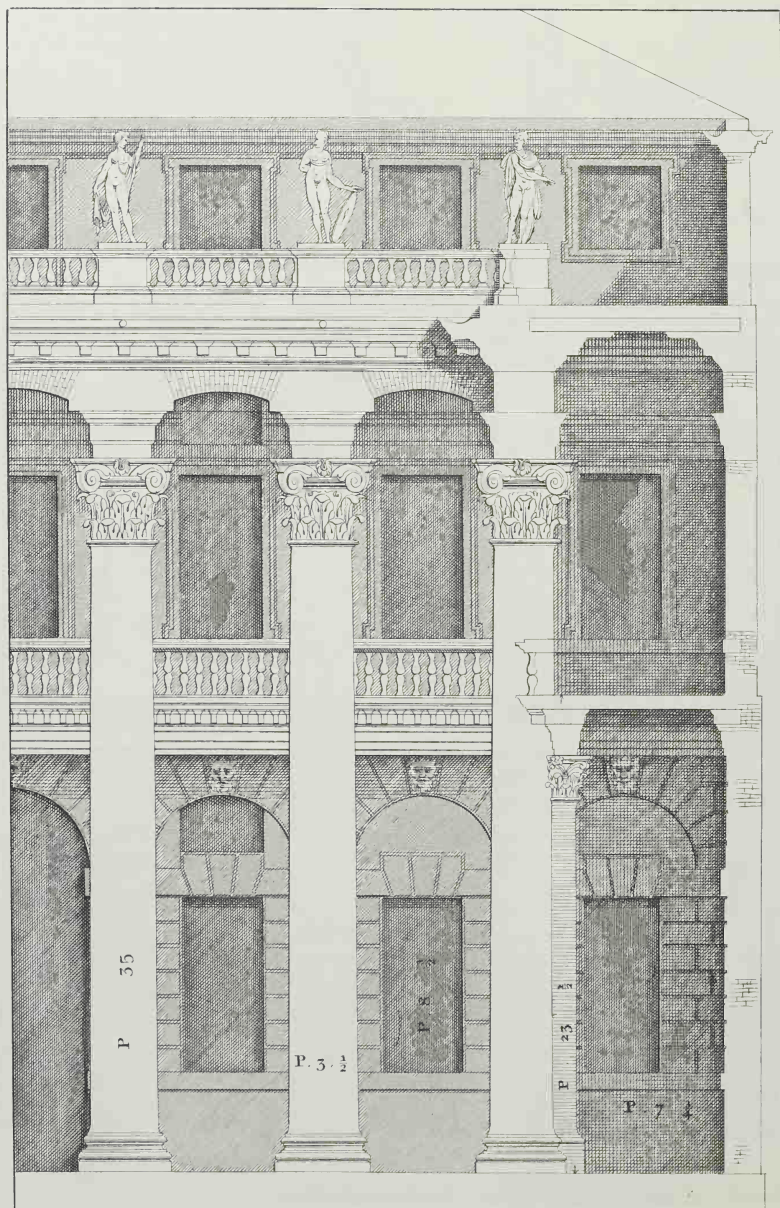


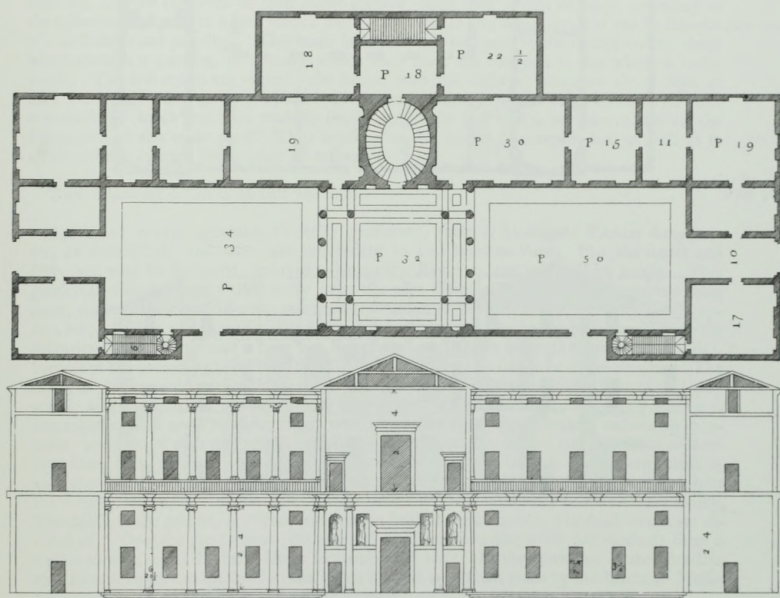


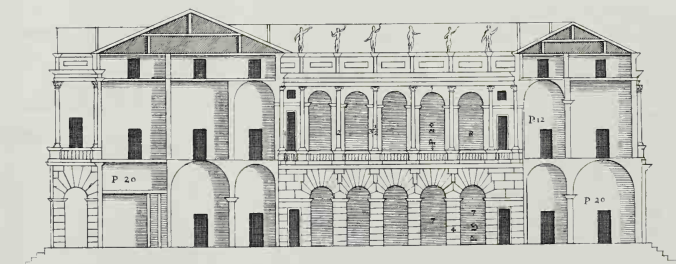
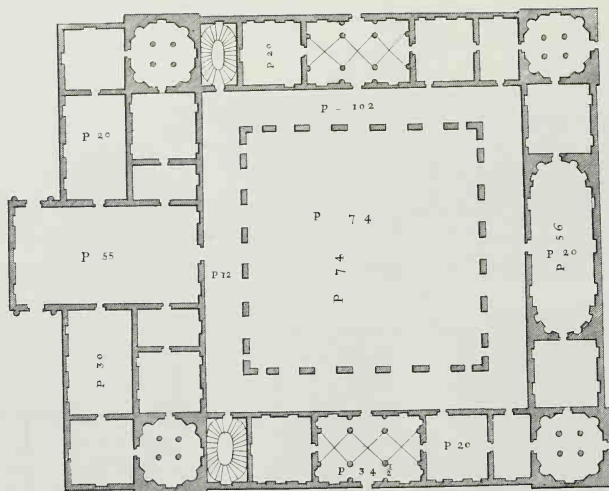












two entrances in the wings, which have columns in the middle, placed there not so much for ornament, as they are to render the part above it secure, and to make the height proportionable to the breadth. From these entrances one goes into the court encompassed all round with loggia's of pilasters. In the first order they are Rustick, and in the second of the Composite order. In the angles, there are octangular rooms, that succeed well, as well with respect to their form, as for diverse uses to which they may be accommodated. The rooms of this fabrick that are now finished, have been adorned with the most beautiful stucco's, by Messer ALESSANDRO VITTORIA, and Messer BARTOLOMEO RIDOLFI; and with paintings, by Messer ANSELMO CANERA, and Messer BERNARDINO INDIA of Verona, not inferior to any of the present age. The cellars, and such like places, are under ground; because this fabrick is in the highest part of the city, where there is no danger that water should prove any inconvenience.

OF the following designs, in a larger form of the above inferted fabrick; the first is part Plate 9. of the front; the second is of the part towards the court. Plate 10.

THE Counts VALMARANA, very honourable gentlemen, for their own honour and convenience, and the ornament of their native country, have built in the said city, according to the following designs: in which fabrick there is no want of any ornaments that can be thought Plate 11. of; as stucco's and paintings. This house is divided into two parts by the middle court; about which there is a corridor, or balcony, which leads from the fore-part to that which is backwards. The first rooms are vaulted; the second with flat cielings, and they are as high as they are broad. The garden, which is before one comes to the stables, is much larger than it is marked; but it has been made so small because the leaf would not have contained the stables and all the other parts. Thus much as to this fabrick, having in this, as well as in all the others, inferted the measure of each part.

THE following design is of half the front.

Plate 12.

AMONGST many honourable *Vicentine* gentlemen, there is Monsignor PAOLO ALMERICO, an ecclesiastick, and who was referendary to two supreme Popes, PIO the fourth and fifth, and who for his merit, deserved to be made a *Roman* citizen with all his family. This gentleman after having travelled many years out of a desire of honour, all his relations being dead, came to his native country, and for his recreation retired to one of his country-houses upon a hill, less than a quarter of a mile distant from the city, where he has built according to the following invention: which I have not thought proper to place amongst the fabricks of villa's, Plate 13. because of the proximity it has with the city, whence it may be said to be in the very city. The site is as pleasant and as delightful as can be found; because it is upon a small hill, of very easy access, and is watered on one side by the *Bacchiglione*, a navigable river; and on the other it is encompassed with most pleasant risings, which look like a very great theatre, and are all cultivated, and abound with most excellent fruits, and most exquisite vines: and therefore, as it enjoys from every part most beautiful views, some of which are limited, some more extended, and others that terminate with the horizon; there are loggia's made in all the four fronts; under the floor of which, and of the hall, are the rooms for the convenience and use of the family. The hall is in the middle, is round, and receives its light from above. The small rooms are divided off. Over the great rooms (the vaults of which are according to the first method) there is a place to walk round the hall, fifteen foot and a half wide. In the extremity of the pedestals, that form a support to the stairs of the loggia's, there are statues made by the hands of Messer LORENZO VICENTINO, a very excellent sculptor.

Signor GIULIO CAPRA, likewise a most noble cavalier, and a *Vicentine* gentleman, for an ornament to his native country, rather than from any necessity he was under of so doing, has prepared the materials to build, and has begun according to the following designs, in a most beautiful site, in the principal street of the city. This house will have courts, loggia's, halls and rooms; some of which will be great, some middling, and others small. The form will be beautiful, and diversified; and certainly that gentleman will have a very stately and magnificent house, suitable to his noble mind.

C, an open court.

D, a court likewise uncovered.

L, the court.

S, the hall which in the lower part has columns, and free above, that is, without columns.

I MADE the present invention for a site, belonging to the Count MONTANO BARBARANO at Plate 15. *Vicenza*; in which, by reason of the situation, I did not observe the same order on one part, as

M

I did

I did on the other. Now this gentleman has bought the neighbouring piece of ground, and therefore the same order is observed in both parts; and as in one part the stables are placed, and the lodgings for servants (as may be seen in the design) so in the other there are rooms that will serve for a kitchen, and places for women, and for other conveniences. They have already begun to build, and have raised the front according to the following design, in a large form. I have not yet inserted the design of the plan, according as it was finally concluded on, and according as the foundations are already laid, since I could not get it graved time enough to have it printed. The entrance of this invention has some columns which support the vault, for the reasons already mentioned. On the right and left there are two rooms one square and a half long; and after these, two square ones; and besides these, two closets. Opposite to the entrance there is a passage, from which one comes into a loggia over the court. This passage has a closet on each side, and over them mezzatins, to which the principal stairs of the house serve. All the vaults of these places are one and twenty foot and a half high. The hall above, and all the other rooms, are with flat ceilings; the small rooms only have their vaults as high as the ceilings of the rooms. The columns of the front have pedestals under them, and support the balcony; into which one enters by the sofa. The front is not to be made in this manner (as Plate 16. was said) but according to the following design, in a large form.

CHAP. IV.

Of the TUSCAN ATRIO, or porch.

AFTER having set down some of those fabricks I have directed in cities, it is very proper that, to keep my promise, I should insert the designs of some of the principal parts of the houses of the antients. And because the Atrio was a very remarkable part of them, I shall first make mention of the Atrio's, or porches, and then of the places adjoined to them, and so proceed to the halls.

VITRUVIUS says, in his sixth book, that there were five kinds of Atrio's among the Antients, that is, the Tuscan, of four columns; the Corinthian, Testuginato, and Uncover'd, of which I do not intend to speak. The following designs are of the Tuscan Atrio. The breadth of this Atrio is two thirds of the length. The breadth of the Tablino is two fifths of that of the Atrio, and of the same length. From this one passes into the Peristilio, that is, into the court with portico's round it; which is one third longer than it is broad. The portico's are as wide as the columns are long. On the sides of the Atrio small halls might be made, that would look over the gardens; and if they were made as one sees in the design, their columns would be of the Ionick order, twenty foot long, and the portico would be as wide as the intercolumniation. Above them there would be other columns, of the Corinthian order, one fourth part less than those below; between which there would be windows to receive light. Over the Anditi there should be no covering, but they should have balustrades round them; and according to the situation, they might be made either longer or shorter than what I have designed, according as it should be necessary for the use and conveniency of those who were to dwell there.

Plate 18. HERE follows the design of this Atrio in a larger form.

B, *Atrio.*

D, *Frieze, or beam of limitation.*

G, *the door of the Tablino.*

F, *Tablino.*

I, *Portico of the Peristillio.*

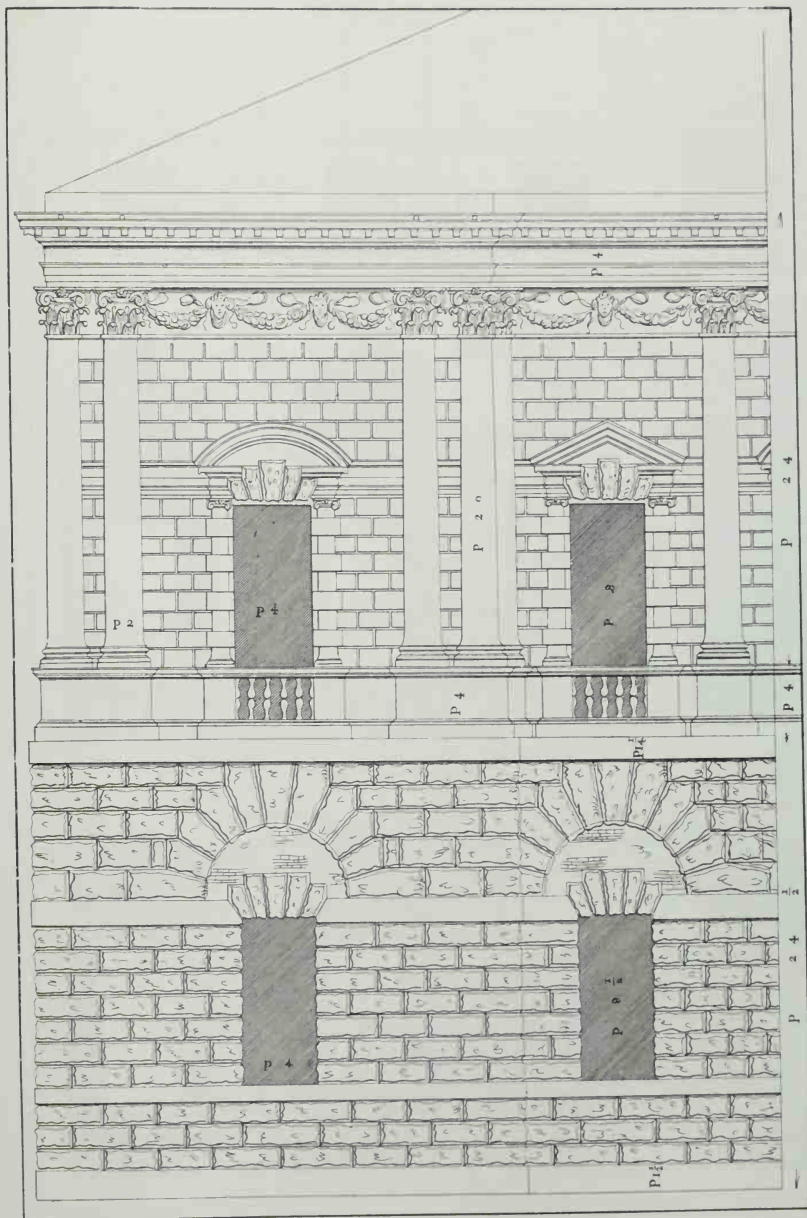
K, *Loggia before the Atrio, which we may call Vestibulo.*

CHAP. V.

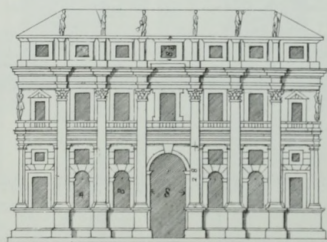
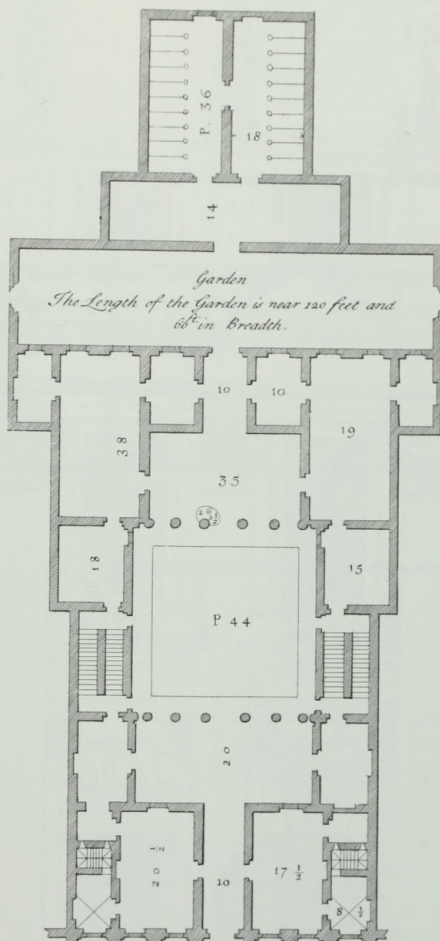
Of the ATRIO with four columns.

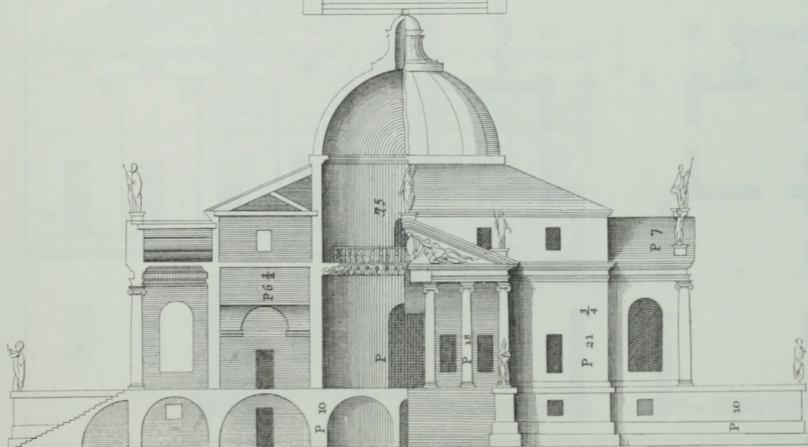
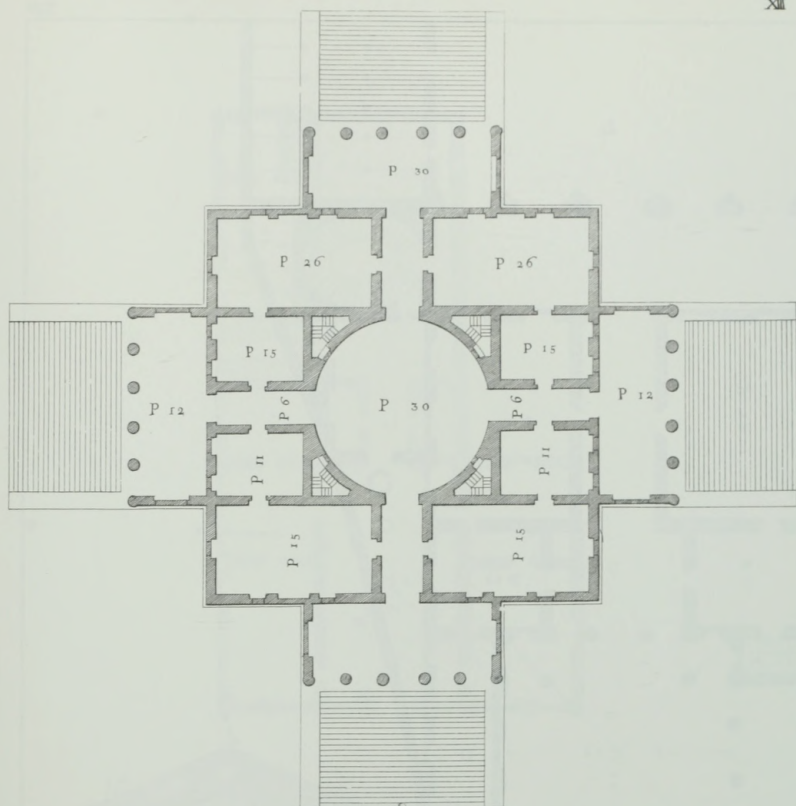
Plate 19. THE following design is of the Atrio with four columns; which is in breadth three parts of five of its length. The wings are the fourth part of the length. The columns are Corinthian; their diameter is half the breadth of the wings. The uncover'd part is a third part of the breadth of the Atrio, and as long. From the Atrio through the Tablino one passes into the Peristilio; which is in length one square and a half. The columns of the first order are Dorick, and the portico's are as broad as the said columns are long. Those above, that is, of the second order, are Ionick, one fourth part less than those of the first, under which there is a Poggio, or pedestal, two foot and three quarters high.

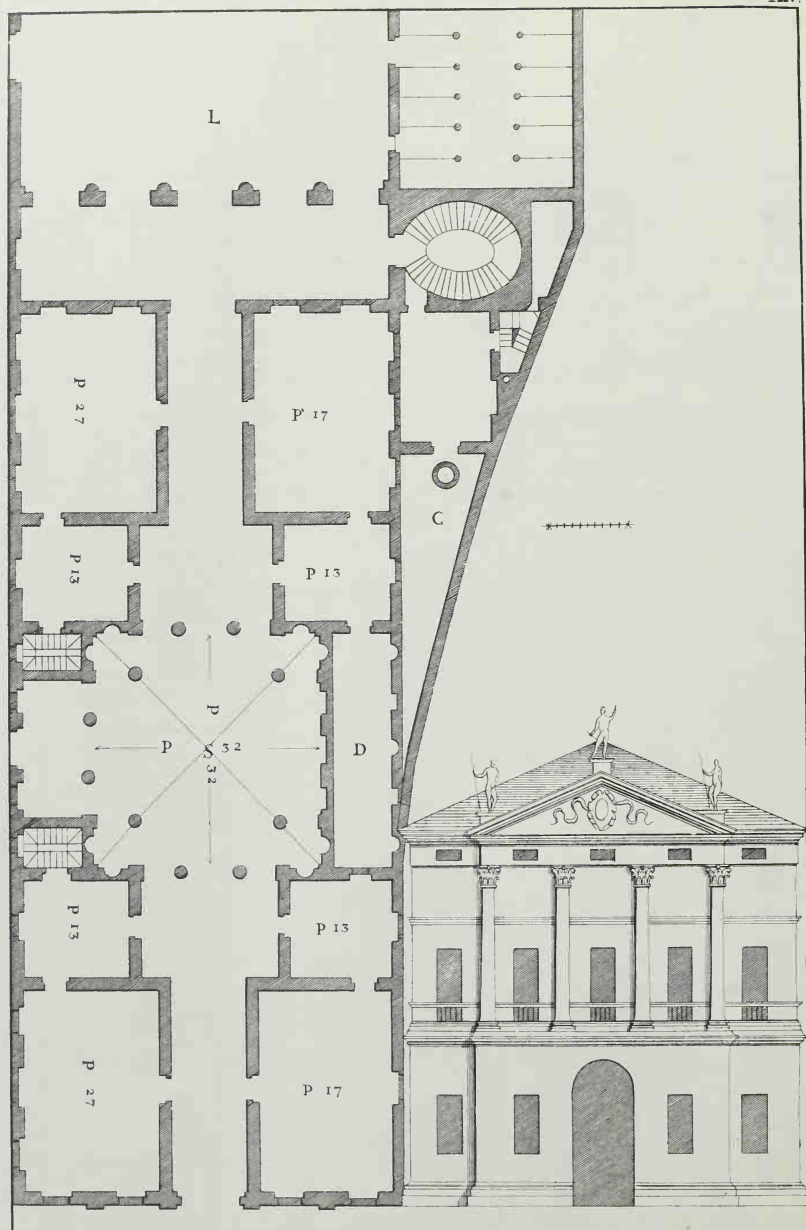
A, *Atrio.*

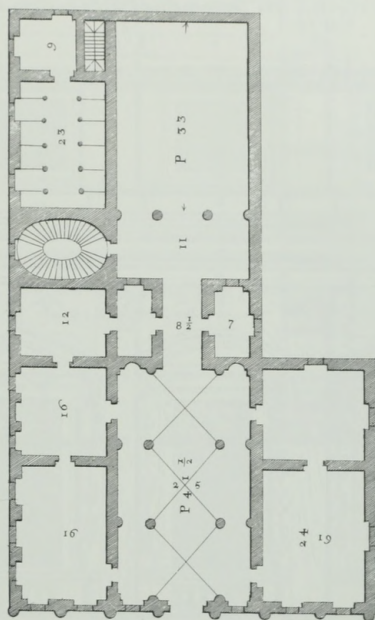
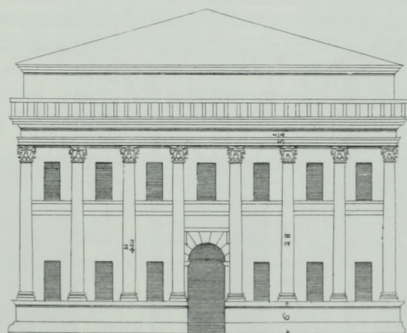




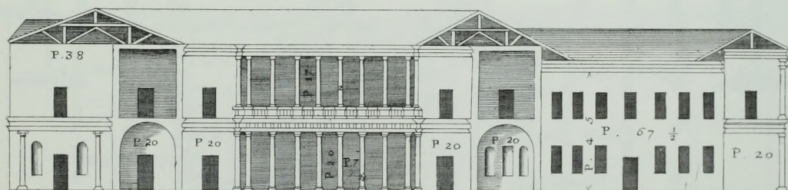
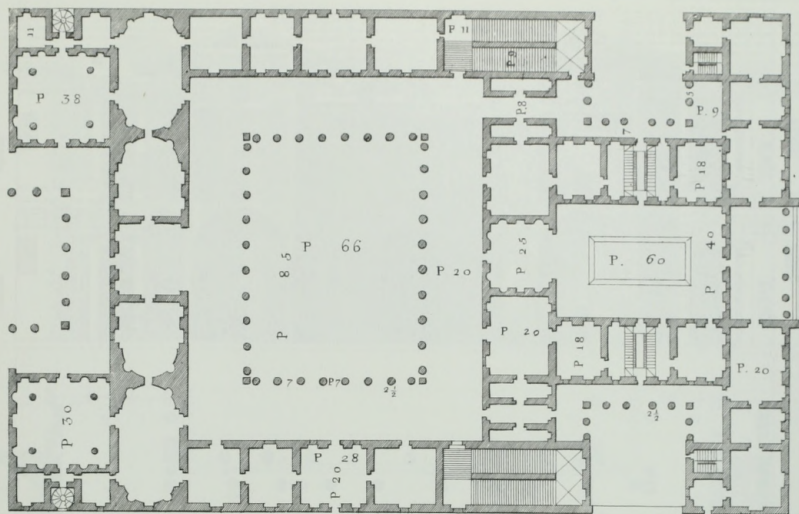


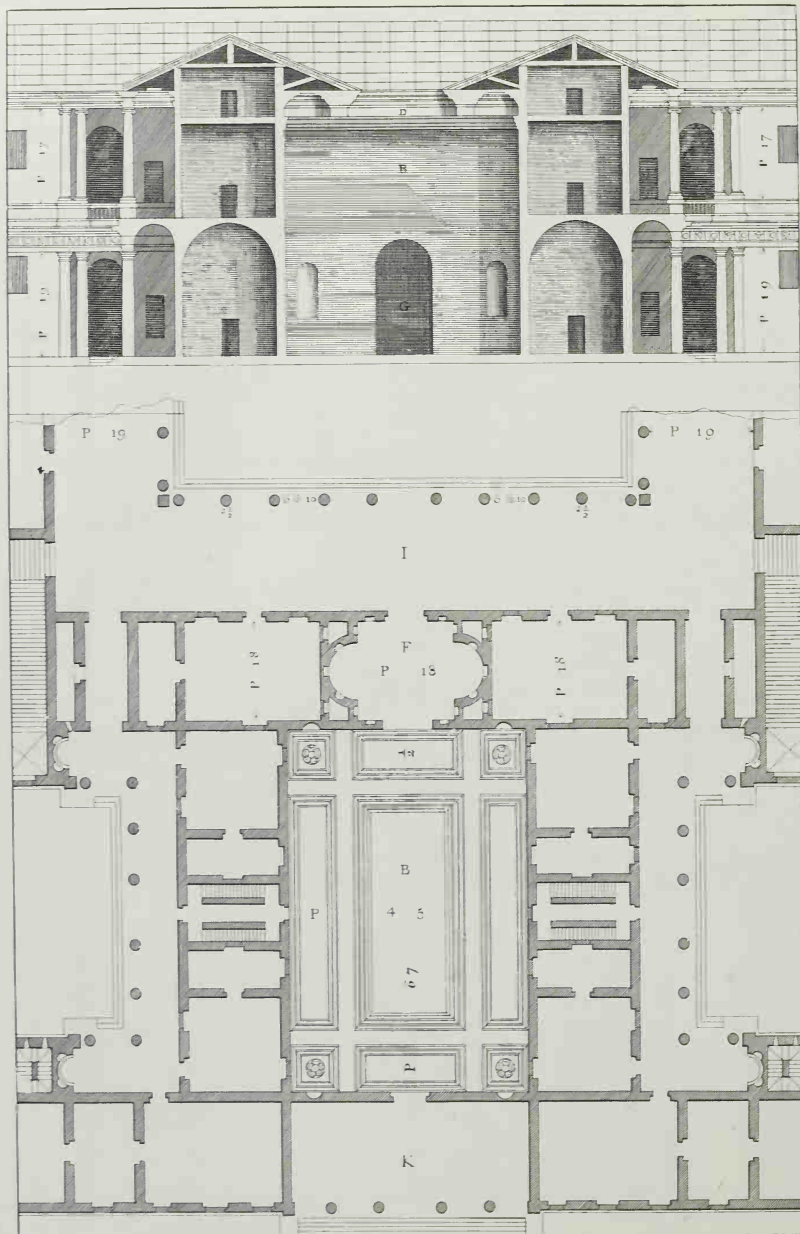


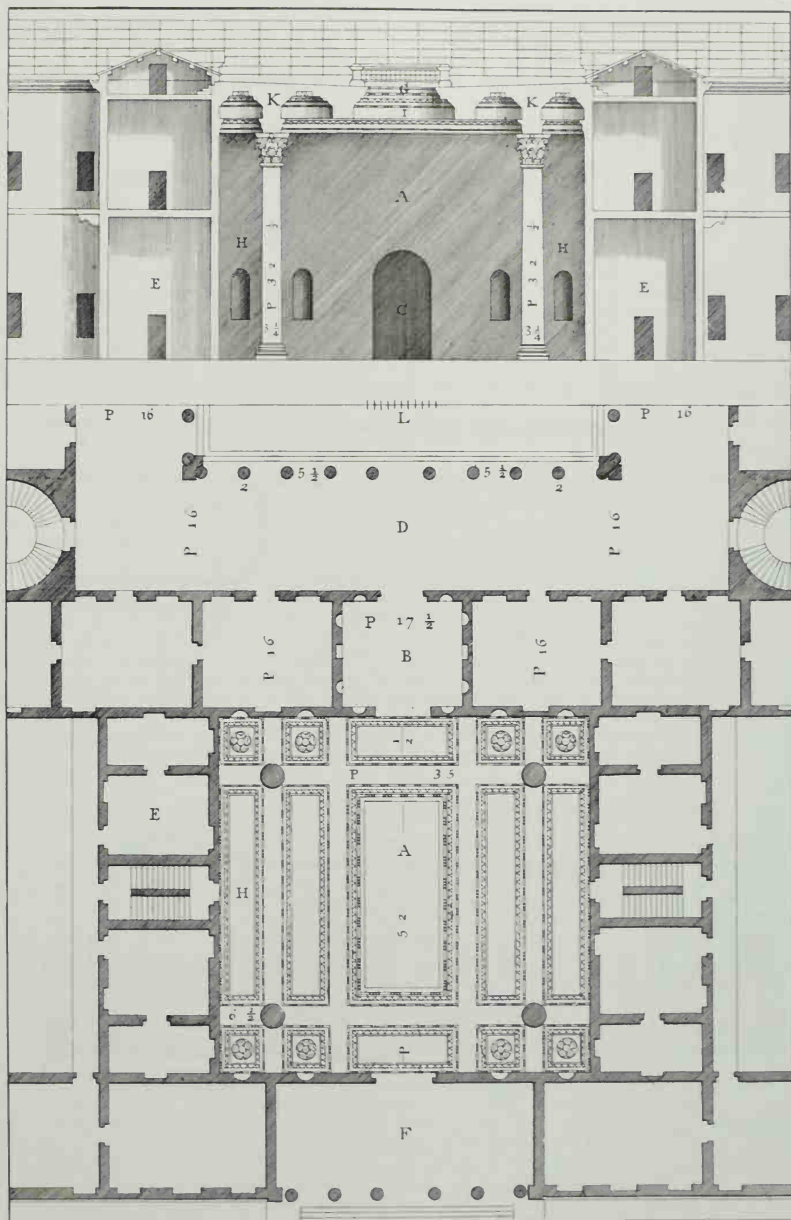


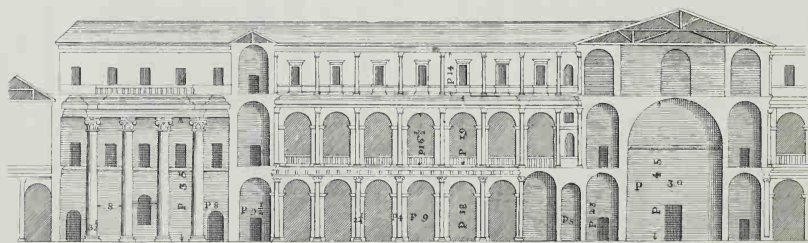












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|--|---|
| A, <i>Atrio.</i> | G, <i>the uncover'd part of the Atrio, with</i> |
| B, <i>Tablino.</i> | <i>balustrades round it.</i> |
| C, <i>door of the Tablino.</i> | H, <i>the wings of the Atrio.</i> |
| D, <i>portico of the Peristilio.</i> | I, <i>frize of the cornice of the Atrio.</i> |
| E, <i>rooms near the Atrio.</i> | K, <i>solid part over the columns.</i> |
| F, <i>Loggia thro' which one enters the Atrio.</i> | L, <i>measure of ten feet.</i> |

CHAPTER VI.

Of the CORINTHIAN ATRIO.

THE following fabrick is of the convent of *la Carita* where are regular canons at *Venice*. Plate 20.
 I have endeavour'd to make this house like those of the antients; and therefore I have made a Corinthian Atrio to it, whose length is the diagonal line of the square of its breadth. The wings are one part of three and a half, or two sevenths of its length. The columns are of the Composite order, three foot and a half thick, and five and thirty foot long. The uncovered part in the middle is the third part of the breadth of the Atrio. Over the columus there is an uncovered terrace level with the floors of the third order of the cloister where the Friar's cells are. The sacristy is on one side near the Atrio, incompass'd with a Dorick cornice, which supports the vaults. The columns there seen, support that part of the wall in the cloister, which in the part above, divides the chambers or cells from the loggia's. This sacristy serves for a tablino (so they called the place where they lodged the images of their ancestors) tho' for conveniency, I have placed it on one side of the Atrio. On the other side is the place for the chapter, which answers to the sacristy. In the part near the church there is an oval stair-case, void in the middle, which is very convenient and pleafant. From the Atrio one enters into the cloister, which has three orders of columns, one over the other. The first is Dorick, and the columns project from the pilasters more than one half. The second is Ionick; the columns are one fifth part less than those of the first. The third is Corinthian, and the columns are a fifth part less than those of the second. In this order, instead of pilasters, there is the continued wall; and directly over the arches of the inferior orders, there are windows which give light to the entrance into the cells, the vaults of which are made with reeds, that they may not overcharge the walls. Opposite to the Atrio and cloister, beyond the stairs, one finds the refectory, which is two squares long, and as high as the floor of the third order of the cloister: It has a loggia on each side, and underneath a cellar made in the same manner as cisterns are, that the water may not get in. At one end it has the kitchen, ovens, a yard for poultry, a place for wood, a place to wash clothes in, and a very agreeable garden; and at the other end, other kind of places.

THERE are in this fabrick, besides places for strangers, and others that serve for different purposes, forty four rooms, and forty six cells.

OF the designs that follow, the first is of part of this Atrio in a larger form, and the second Plate 21, and 22.
 of part of the cloister.

CHAPTER VII.

Of the ATRIO TESTUGGINATO, and of the private houses of the antient Romans.

BESIDES the above-said different manners of Atrio's, there was another very much in use among the antients, by them called Testugginato: and because this part is very difficult, from the obscurity of VITRUVIUS, and worthy of a particular regard, I shall mention what I think of it, adjoining thereto the disposition of the Oeci, or small halls, Cancellarie, Tinelli, baths, and other places; so that in the following design there will be all the parts of Plate 23.
 the private house set in their proper places according to VITRUVIUS. The Atrio is as long as the diagonal of the square of the breadth, and as high as it is broad, up to the liminary beam. The rooms on the side thereof, are six foot less in height; and upon the walls, which divide them from the Atrio, there are some pilasters that support the Testudine, or covering of the Atrio; and through the distances between them it receives light; and the rooms have an open terrace over them. Opposite to the entrance is the Tablino, which is one part of two and a half, or two fifths of the breadth of the Atrio; and those places served,

served, as I before said, to place the images and statues of their ancestors in. Farther on, is the Peristilio, which has portico's round it, as broad as the columns are long. The rooms are of the same breadth, and are as high to the impost of the vaults as they are broad, and the vaults are in height a third part of the breadth.

SEVERAL sorts of Oeci are described by VITRUVIUS (it was these halls, or Salotte, in which they made their festivals and entertainments, and where the women worked) that is, Tetrafitili; so called, because there were four columns; the Corinthian, which had semi-columns round them; the Egyptian, which over the first columns were inclosed with a wall with semi-columns directly over the first, and one fourth part less. In the inter-columniations there were windows, from which the part in the middle received light. The height of the loggia's that were round them, did not pass the first columns, and over that it was uncovered, and encompass'd with a corridor or balcony. The designs of each of these shall be separately set down. The square Oeci were places to be in the cool in the summer: and looked upon gardens and other green places. There were also other Oeci made, which they called Ciziceni, which also proved for the conveniencies abovesaid. The Cancellarie, and libraries were in proper places towards the east; and also the Ticlini, which were places where they did eat. There were also baths for the men and women, which I have designed in the farthest part of the house.

- A, *Atrio.*
- B, *Tablino.*
- C, *Peristilio.*
- D, *Corinthian Salotti.*
- E, *Salotti with four columns.*

- F, *Basilica.*
- G, *places for summer.*
- H, *rooms.*
- K, *library.*

Plate 24. THE following design is of this same Atrio in a larger form.

- D, *Atrio.*
- E, *windows which give light to the Atrio.*
- F, *door of the Tablino.*
- G, *Tablino.*
- H, *portico of the Cortile.*
- I, *Loggia before the Atrio.*
- K, *Cortile.*

- L, *rooms round the Atrio.*
- M, *Loggia.*
- N, *beam of limitation, or frize of the Atrio.*
- O, *part of the Corinthian hall.*
- P, *uncovered place, over which the light comes into the Atrio.*

CHAP. VIII.

Of the HALLS with four columns.

Plate 25. THE following design is of the halls, which were called Tetrafitili, because they had four columns. These were made square; and the columns were put to make the breadth proportionable to the height, and to make the place above secure; which I have done my self in many fabricks, as has been seen in the foregoing designs, and will be in those that follow.

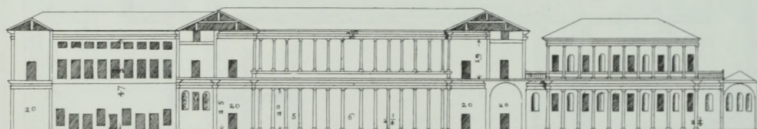
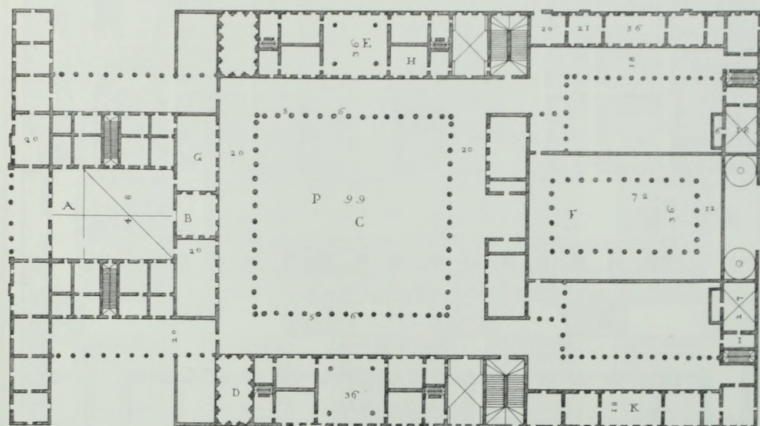
CHAP. IX.

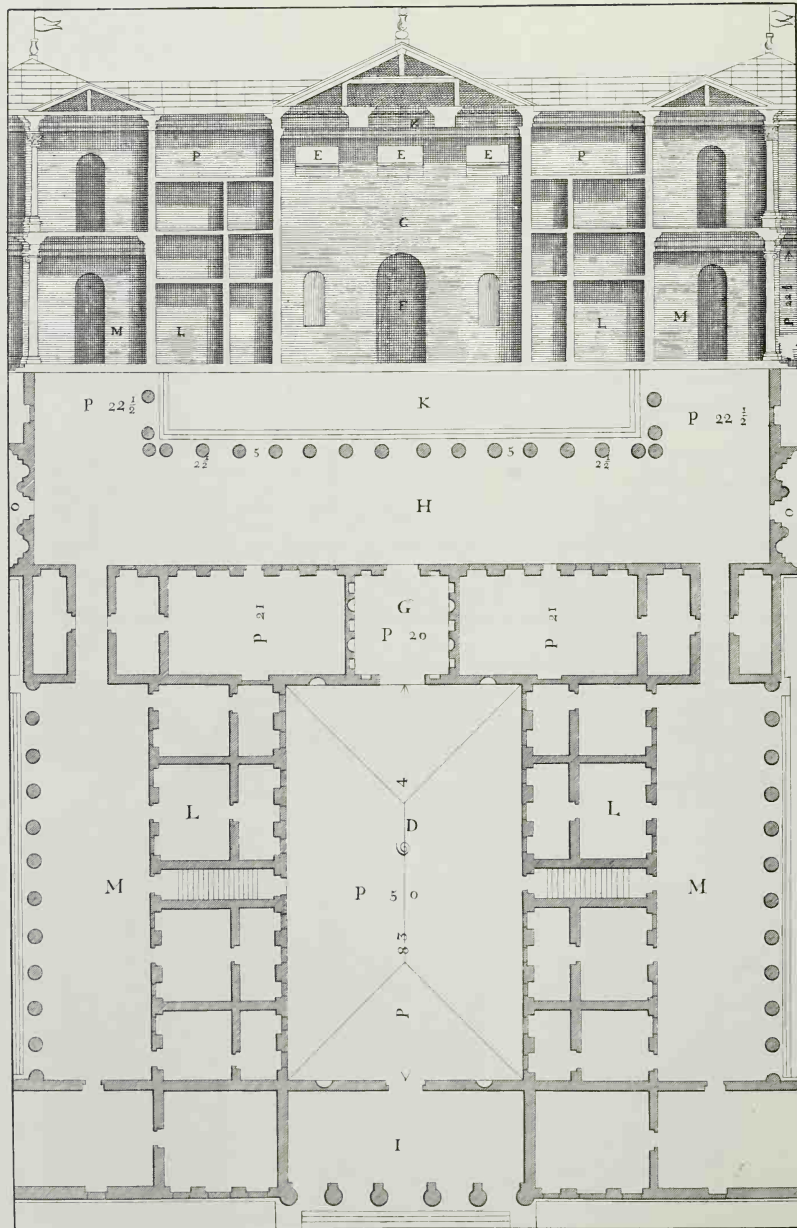
Of CORINTHIAN HALLS.

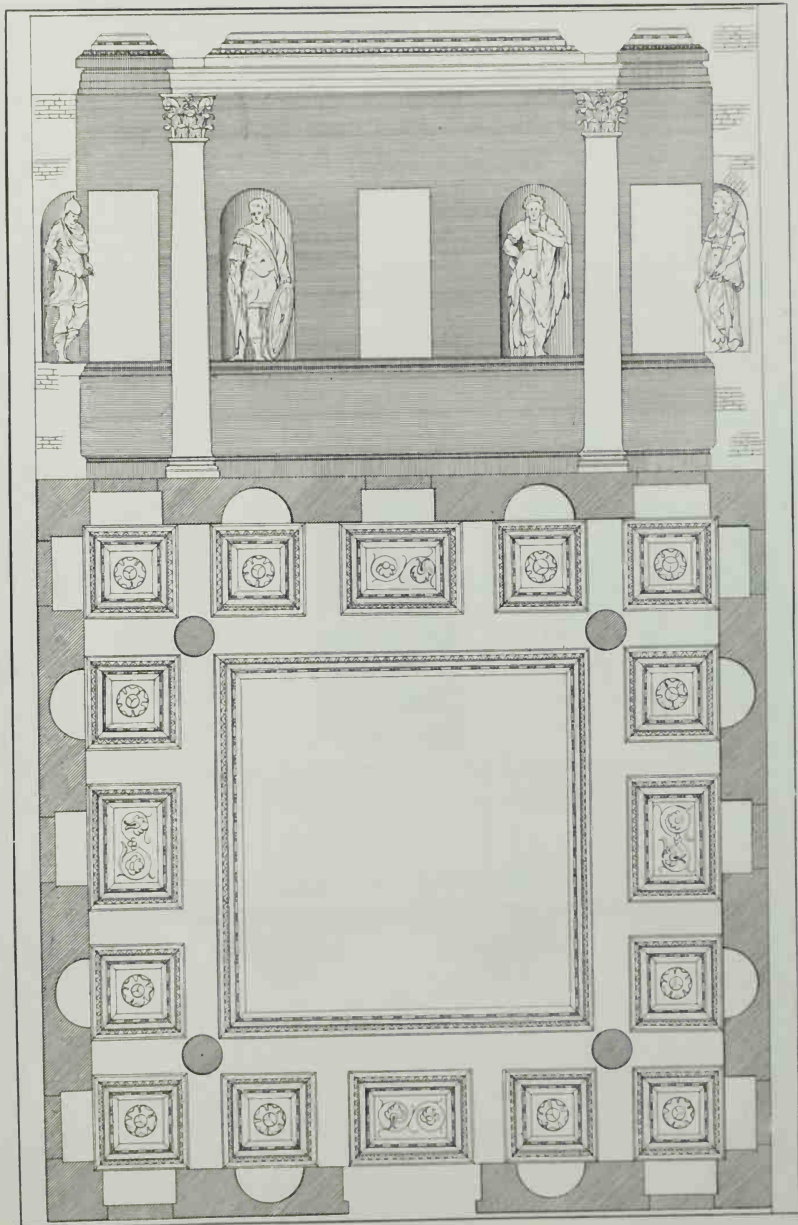
Plate 26. THE Corinthian halls were made in two manners, that is, either with columns which rose from the ground, as may be seen in the first design; or with columns upon pedestals, as they are in the second: But in the one as well as the other, the columns were made close to the wall; and the architraves, frizes and cornices were wrought with stucco, or made of wood, and there was but one order of columns. The vault was made either of a semi-circle, or a Schiffo, that is, it had as much in height, as was the third part of the breadth of the hall, and ought to be adorned with compartments of stucco and paintings. The length of these halls would be very beautiful of one square and two thirds of the breadth.





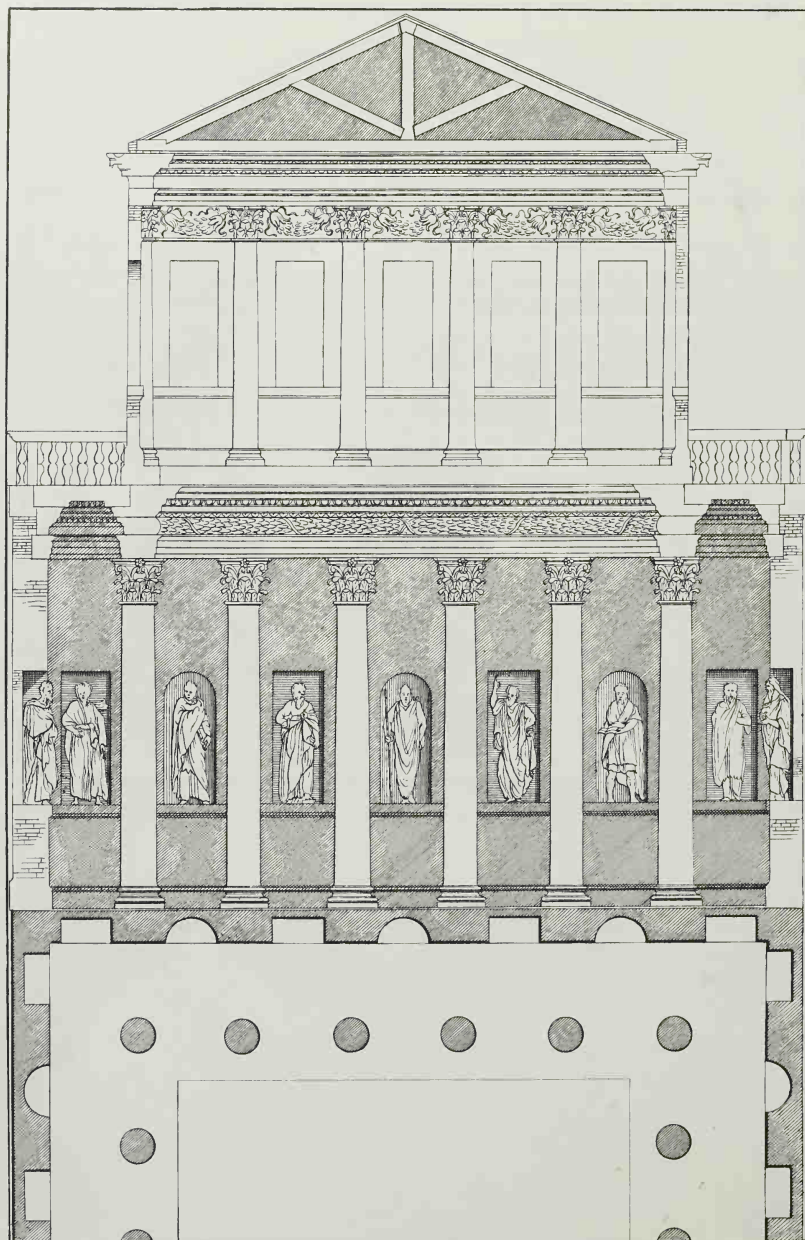












C H A P. X.

Of EGYPTIAN HALLS.

THE following design is of the Egyptian halls, which resembled Basilica's very much, *Plate 28.* (that is, places where justice was administer'd) of which mention shall be made when we treat of the piazza's: because in these halls there was a portico commonly made with the columns at a distance from the wall, as they are in the Basilica's; and over the columns there were the architraves, the frizes, and the cornices. The space between the columns and the wall was covered with a pavement. This pavement was uncovered, and formed a Corridor, or balcony, round. Above the said columns there was a continued wall, with semi-columns on the inside, one fourth part less than the abovesaid; and between the intercolumniations there were windows, which gave light to the hall, and through which, from the said uncover'd pavement, one might see into it. These halls must needs have been of an admirable magnificence, as well by reason of the ornament of the columns, as also for its height; because the soffit lay over the cornice of the second order, and must have been very commodious when festivals and entertainments were made there.

C H A P. XI.

Of the PRIVATE HOUSES of the Greeks.

THE Greeks held a different manner of building from the *Latins*; because, as *VITRUVIUS* says, omitting the loggia's and atrio's, they made the entrance of the house little and narrow; and on one part placed the stables for horses, and on the other the porter's rooms. From this first passage one enter'd the court; which had on three sides portico's, and on the part fronting the south they made two *Anti*, *i. e.* pilasters, which supported the beams of the more inward cielings; because some space being left on the one side, and the other, there were very large places appointed for the mothers of families, wherein they dwell with their men and women servants. And even with the said *Anti* were some rooms, which we may call antichamber, chamber, and back room, as they are one behind the other. Round the portico's were places for eating, sleeping, and for other like necessary things to the family. To this edifice they annexed another, of much greater size, and ornament, with more ample courts; in which they either made four portico's of an equal height, or one that was greater, *viz.* that which fronted the south, and the court which had this higher portico was called *Rhodiaco*; perhaps because the invention came from the *Rhodians*. These courts had magnificent loggia's forwards, with particular gates of their own, wherein the men only dwelt. Near this fabrick, on the right and left, they made other houses, which had particular gates of their own, and all the conveniences necessary to make them habitable; and in these strangers were lodged: for it was the custom among these people, when a stranger came, to conduct him the first day to eat with them, and then to assign him a lodging in the said houses, and send him thither all the necessaries of life; whereby the strangers were in every respect as free, as if they had been in their own house.

LET it suffice to have said thus much concerning the houses of the *Greeks*, and of city houses.

Of the parts of the houses of the *Greeks*.

- A, passage.
- B, stables.
- C, places for the porters.
- D, first court.
- E, entrance to the rooms.
- F, places where the women did their work.
- G, first great room, which we shall call the antichamber.
- H, middling chamber.
- I, small room.
- K, small halls to eat in.
- L, the rooms.
- M, second court, larger than the first.
- N, portico greater than the three others, from which the court is called *Rhodiaco*.

- O, place leading from the lesser into the greater court.
- P, the three portico's, having small columns.
- Q, *Triclini*, *Ciziceni*, and *Cancelarie*, or the places to be painted.
- R, hall.
- S, library.
- T, square halls, where they used to eat.
- V, the houses for the strangers.
- X, little alleys, which parted the said houses from those of the master.
- Y, small uncovered courts.
- Z, principal street.

C H A P. XII.

Of the SITE to be chosen for the fabricks of VILLA's.

THE city houses are certainly of great splendour and convenience to a gentleman who is to reside in them all the time he shall require for the administration of the republick, or for directing his own affairs. But perhaps he will not reap much less utility and consolation from the country house; where the remaining part of the time will be passed in seeing and adorning his own possessions, and by industry, and the art of agriculture, improving his estate; where also by the exercise which in a villa is commonly taken, on foot and on horseback, the body will the more easily preserve its strength and health; and, finally, where the mind, fatigued by the agitations of the city, will be greatly restor'd and comforted, and be able quietly to attend the studies of letters, and contemplation.

HENCE it was the ancient sages commonly used to retire to such like places; where being oftentimes visited by their virtuous friends and relations, having houses, gardens, fountains, and such like pleasant places, and above all, their virtue, they could easily attain to as much happiness as can be attained here below.

HAVING now, by the help of God, gone through what I had to say concerning city houses; it is just that we proceed to those of the country, in which private and family affairs are chiefly transacted.

BUT before we come to the designs of these, it seems not improper to say something concerning the situation or place to be chosen for those fabricks, and of their disposition; because, as we are not confined (as commonly happens in cities) by publick walls, or those of our neighbours, to certain and determinate bounds, it is the business of a wise architect, with the utmost care and diligence, to seek and find out a convenient and healthy place: since we are, for the most part, in the country during the summer season; at which time, even in the most healthy places, our bodies become weak and sickly, by reason of the heat.

IN the first place therefore, let a place be chosen as convenient as possible, and in the middle of the estate, that the owner, without much trouble, may view and improve it on every side, and that the fruits thereof may be the more conveniently carried by the labourers to his house.

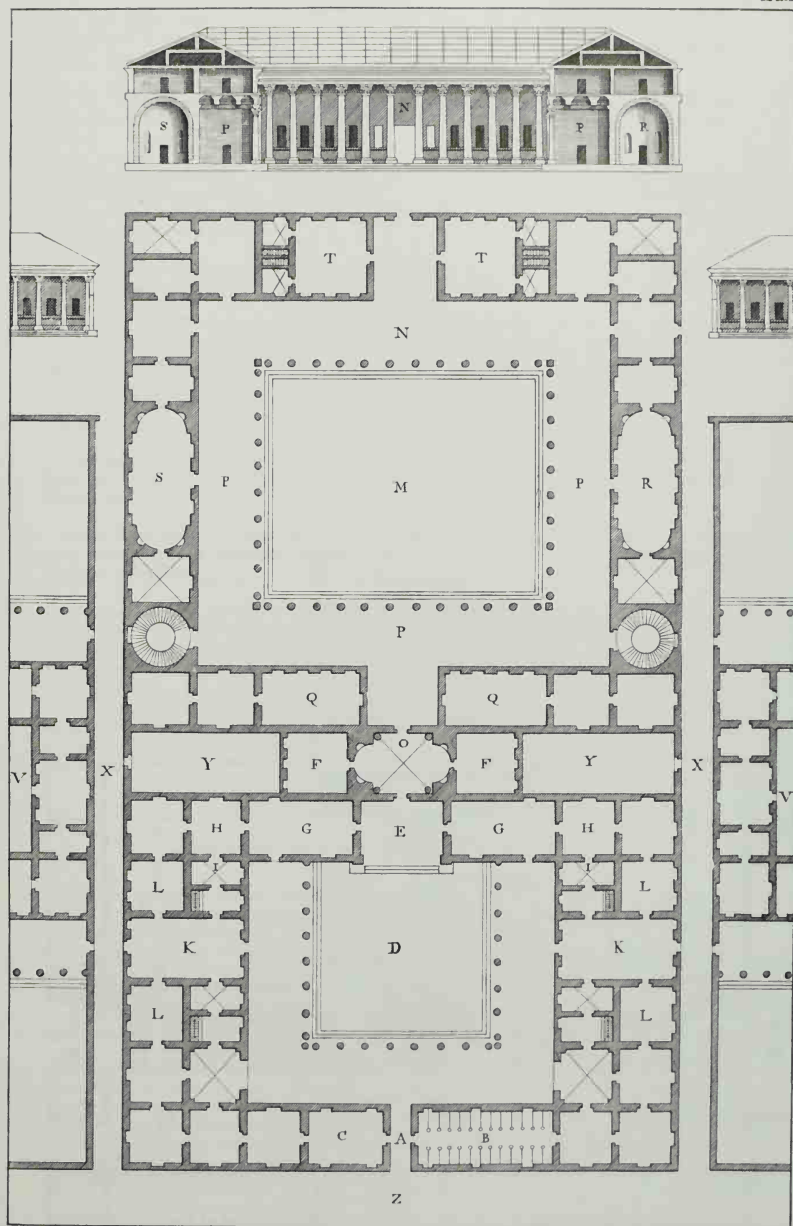
IF one may build upon a river, it will be both convenient and beautiful; because at all times, and with little expence, the products may be convey'd to the city in boats, and will serve for the uses of the house and cattle. Besides the cooling the air in summer very much, it will afford a beautiful prospect, with which the estates, pleasure and kitchen gardens may with great utility and ornament be water'd, which are the sole and chief recreation of a villa.

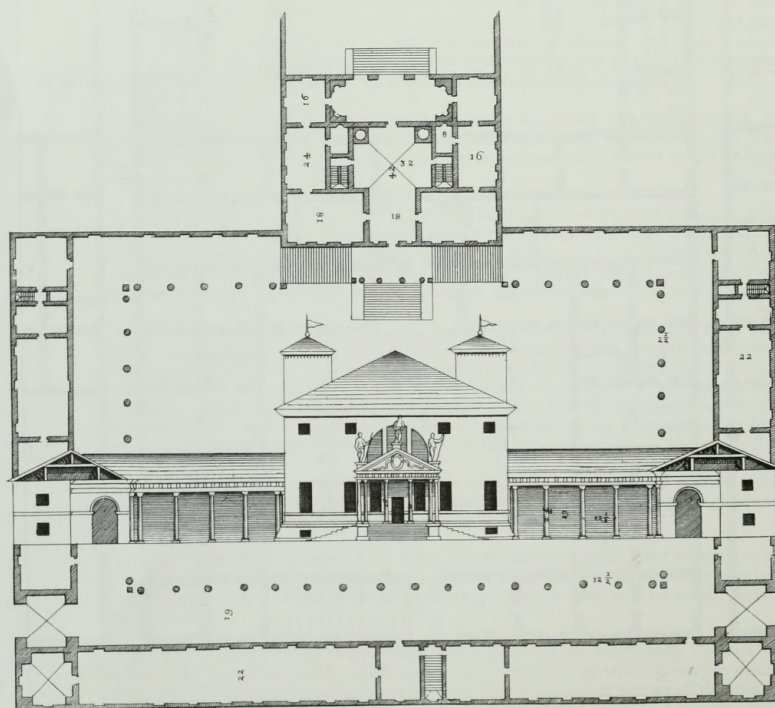
BUT if navigable rivers cannot be had, one must endeavour to build near some other running water; and above all to get at a distance from standing waters, because they generate a very bad air: which we may very easily avoid, if we build upon elevated and chearful places, where the air is, by the continual blowing of the winds, moved; and the earth, by its declivity, purged of all ill vapours and moisture: and where the inhabitants are healthy and chearful, and preserve a good colour, and are not molested by gnats and other small animals, which are generated by the putrefaction of still fenny waters.

AND because the waters are very necessary to human life, and according to their various qualities they produce in us different effects; some generating the spleen, others glandulous swellings in the neck, others the stone, and many other diseases:

GREAT care ought therefore to be taken, not to build near those waters which have any odd taste, or which partake of any colour; but be clear, limpid, and subtle, and which, being sprinkled upon a white cloth, do not stain it: because these will be certain signs of their goodness.

THERE are many methods to find whether the waters are good, taught us by VITRUVIUS: but that water is deemed perfect which makes good bread, and in which greens are quickly boiled; and which, being boiled, does not leave any fur or sediment at bottom of the vessel.





IT will be an excellent sign of the goodness of the water, if, where it passes, one does not see moss or rushes grow; but the place is clean, beautiful, and has sand or gravel at the bottom, and is not foul and muddy.

THE animals which are accustomed to drink of them, will also be an indication of the goodness and salubrity of the waters, if they are lively, robust, and fat, and not weak and lean.

BUT with regard to the wholesomeness of the air, besides the aforesaid particulars, the antient edifices will give an indication thereof, if they are not corroded and spoiled: if the trees are well nourished and beautiful, and not bent in any part by the winds, and if they are not such as grow in fenny places.

AND if the stones produced in those places do not appear on the surface to be putrified; and also if the colour of the inhabitants be natural, and shews a good temperature.

ONE ought not to build in valleys enclosed between mountains; because edifices in valleys are there hid, and are deprived of seeing at a distance, and of being seen. These are without dignity and grandure, and also entirely contrary to health; because the earth being impregnated by the rains that settle there, sends forth pestiferous vapours, infecting both the body and mind; the spirits being by them weaken'd, the joints and nerves emaculated: and what is lodged in the granaries will corrupt through the too great moisture.

BESIDES which, if the sun happens to shine, the reflection of its rays will cause excessive heats; and if it doth not, the continual shade will render the people in a manner stupid and discoloured.

AND when the winds enter into the said valleys, it will be with too much fury, as if it were through narrow channels; and when they do not blow, the collected air will grow gross and unhealthy.

WHEN there is a necessity of building upon a mountain, let a situation be chosen facing a temperate part of the heaven, and which is not by higher mountains continually shaded, nor scorched (as it were by two suns) by the sun's reverberation from some neighbouring rock, for in either of these cases it will be exceeding bad to dwell in.

AND, finally, in the choice of the situation for the building a villa, all those considerations ought to be had, which are necessary in a city house; since the city is as it were but a great house, and, on the contrary, a country house is a little city.

CHAP. XIII.

Of the compartment or disposition of the VILLA's.

THE agreeable, pleasant, commodious, and healthy situation being found, attention is to be given to its elegant and convenient disposition. There are two sorts of fabricks required in a villa: one for the habitation of the master, and of his family; and the other to manage and take care of the produce and animals of the villa. Therefore the compartment of the site ought to be in such a manner, that the one may not be any impediment to the other.

THE habitation for the master ought to be made with a just regard to his family and condition, and as has been observed in cities, of which mention has been made.

THE covertures for the things belonging to a villa, must be made suitable to the estate and number of animals; and in such manner joined to the master's habitation, that he may be able to go to every place under cover, that neither the rains, nor the scorching sun of the summer, may be a nuisance to him, when he goes to look after his affairs; which will also be of great use to lay wood in under cover, and an infinite number of things belonging to a villa, that would otherwise be spoiled by the rains and the sun: besides which these portico's will be a great ornament.

REGARD must be had in lodging the men employ'd for the use of the villa, the animals, the products, and the instruments, conveniently, and without any constraint. The rooms
for

for the steward, for the bailiff or farmer, and for the labourers, ought to be in a convenient place near to the gates, for the safeguard of all the other parts.

THE stables for the working animals, such as oxen and horses, must be at a distance from the master's habitations, that the dunghills may be at a distance from it, and be placed in very light and warm places.

THE places for breeding animals, as hogs, sheep, pigeons, fowls, and such like, are to be disposed according to their quality and nature: and in this the custom of different countries ought to be observed.

THE cellars ought to be under ground, inclosed, and far from any noise, moisture, or ill smell, and ought to receive their light from the east, or from the north; because that having it from any other part, where the sun might heat them, the wines being thereby warmed would grow weak, and be spoiled. They must be made somewhat sloping in the middle, and have their floors of terazzo, or paved in such a manner, that should the wine happen to run out, it may be taken up again. The tubs in which the wine is fermented must be placed under the covertures that are made near the said cellars, and so raised, that their outlets may be something higher than the bung-holes of the barrels, that the wine may be the more easily convey'd, either through leather pipes or wooden channels, from the said tubs into the barrels.

THE granaries ought to have their light towards the north, because the corn cannot so easily be heated, but rather cooled by the winds; and thereby it will be a long time preserv'd, and none of those little animals will breed there, which damage it very much. Their floor, or pavement, ought to be of terrazzato, if it can be had, or at least of boards; because the corn will be spoiled by touching of lime.

THE other store-rooms ought also, for the said reasons, to look towards the same part of the heaven.

HAY-LOFTS ought to face the south or west; because the hay being dried by the heat of the sun, it will not be in danger of corrupting and taking fire. The instruments necessary to the husband-men, must be in convenient places under cover towards the south. The grange, where the corn is threshed, ought to be exposed to the sun, ample, spacious, paved, and a little raised in the middle, with portico's round it, or at least on one side; that in case of sudden rains, the corn may be immediately conveyed under cover; and must not be too near the master's house, by reason of the dust, nor so far off as to be out of sight.

THIS in general will suffice concerning the election of sites, and their compartments. It remains (as I have promised) that I insert the designs of some of the fabricks which I have directed in the country, according to several inventions.

C H A P. XIV.

Of the DESIGNS of the country-houses belonging to some noble Venetians.

Plate 30. THE following fabrick is at *Bagnolo*, a place two miles distant from *Lonigo*, a castle in the *Vicentine*, and belongs to the magnificent Counts *VITTORE*, *MARCO*, and *DANIELE DE PISANI*, brothers. The stables, the cellars, the granaries, and such like other places, for the use of the villa, are on each side of the court. The columns of the portico's are of the Dorick order. The middle part of this fabrick is for the master's habitation. The pavement of the first rooms, are seven foot high from the ground; under which are the kitchen and such like places for the family. The hall is vaulted, in height once and half its breadth. To this height also joins the vault of the loggia's. The rooms are with flat cielings, and their height equal to their breadth: the length of the greater is one square and two thirds, and of the others one square and an half. And it is to be observed, that great attention has not been given, in putting the lesser stairs in a place where they might have a strong light, (as we have recommended in the first book) because they being to serve to places below, and to those above, which are for granaries and mezzati; wherefore, regard has been chiefly had to accommodate well the middle order, which is for the master's habitation, and for strangers. The stairs that lead to this order, are put in a very proper place, as may be seen by the designs.

THIS is said also for an hint to the prudent reader, with respect to all the other fabricks of one order only; because, in those which have two, beautiful and well adorned, I have taken care that the stairs should be light, and put in commodious places: I say two, because that which goes under-ground for the cellars, and such like uses, and that which goes to the part above, and serves for granaries and mezzati, I do not call a principal order, as it does not lead to the habitation of the gentlemen.

THE following fabrick belongs to the magnificent Signor FRANCESCO BADOERO, in the Plate 31. *Polefine*, at a place called *La Frata*, on a site somewhat elevated, and washed by a branch of the *Adige*, where formerly stood a castle, belonging to SALINGUERRA DE ESTE, brother-in-law to EZZELINO DA ROMANO.

THE base to the whole edifice is a pedestal, five feet high; the pavement of the rooms is level with this height, which are all with flat ciellings, and have been adorned with grotesque work of a beautiful invention, by GIALLO FIORENTINO. The granaries are above, and the kitchen, cellars, and other places belonging to its convenience, are below. The columns of the loggia's of the master's house, are of the Ionick order. The cornice, like a crown, encompasses the whole house. The frontispiece, over the loggia's, forms a beautiful sight, because it makes the middle part higher than the sides. Lower on the plane are found the places for the steward, bailiff or farmer, stables, and other suitables for a villa.

THE magnificent Signor MARCO ZENO has built according to the following invention Plate 32. at *Cesalto*, a place near to the *Motta*, a castle in the *Trevigiano*. The pavement of the rooms, all which are vaulted, is level with a basement which encompasses the whole fabrick. The height of the vaults of the greater, is according to the second manner for the height of vaults. Those that are square, have lunetti in the angles over the windows. The little rooms next the loggia, are cov'd *à fascia*, as also the hall. The vault of the loggia is as high as that of the hall, and both exceed the height of the rooms. This fabrick has gardens, a court, a dove-house, and all that is necessary for a villa.

NOT very far from the *Gambarare*, on the *Brenta*, is the following fabrick, belonging Plate 33. to the magnificent Signors NICOLÒ and LUIGI DE FOSCARI. This fabrick is raised eleven foot from the ground; and underneath are the kitchens, servants halls, and such like places, and vaulted above as well as below. The height of the vaults of the greater rooms, is according to the first manner for the height of vaults. The square rooms have their vaults *à cupola*. Over the small rooms, there are mezzati. The vaults of the hall is crossed semicircularly: the height of its impost, is as high as the hall is broad; which has been adorned with most excellent paintings, by Messer BATTISTA VENETIANO. Messer BATTISTA FRANCO, a very great designer of our times, had begun to paint one of the great rooms; but being overtaken by death, has left the work imperfect. The loggia is of the Ionick order. The cornice goes round the house, and forms a frontispiece over the loggia; and on the opposite part below the main roof, there is another cornice, which passes over the frontispiece. The rooms above are like mezzati, by reason of their lowness; because they are but eight foot high.

THE following fabrick is at *Mafera*, a village near *Afòlo*, a castle in the *Trevigiano*; Plate 34. belonging to Monsignor Reverendissimo ELETTO DE AQUILEIA, and to the magnificent Signor MARC' ANTONIO DE BARBARI, brothers. That part of the fabrick which advances a little forward, has two orders of rooms. The floor of those above is even with the level of the court backwards, where there is a fountain cut into the mountain opposite to the house, with infinite ornaments of stucco and paintings. This fountain forms a small lake, which serves for a fish-pond. From this place the water runs into the kitchen; and after having watered the gardens that are on the right and left of the road, which leads gradually to the fabrick, it forms two fish-ponds, with their watering places upon the high-road; from whence it waters the kitchen garden, which is very large, and full of the most excellent fruits, and of different kinds of pulse. The front of the master's house has four columns, of the Ionick order. The capitols of those in the angles face both ways. The method of making which capitols, I shall set down in the book of temples. On the one, and on the other part, there are loggia's, which, in their extremities, have two dove-houses; and under them there are places to make wines, the stables, and other places for the use of the villa.

THE following fabrick is near the gate of *Montagnana*, a castle in the *Padoano*; Plate 35. and was built by the magnificent Signor FRANCESCO PISANI; who being gone to a better life, could not finish it. The large rooms are one square and three quarters in length; the vaults are *à schifo*, and in height according to the second manner for the height of vaults.

vaults. The middle sized are square, and vaulted *à cadino*. The small rooms, and the passage, are of an equal breadth: their vaults are two squares in height; the entrance has four columns, one fifth less than those without, which support the pavement of the hall, and make the height of the vaults beautiful, and secure. In the four niches that are seen there, have been carved the four seasons of the year, by Messer ALESSANDRO VITTORIA, an excellent sculptor. The first order of the columns is Dorick, the second Ionick. The rooms above, are with flat cielings. The height of the hall reaches up to the roof.

THIS fabrick has two streets on the wings, where there are two doors; over which there are passages that lead to the kitchen, and places for servants.

Plate 36. THE following fabrick belongs to the magnificent Signor GIORGIO CORNARA, at *Piombino*, a place in *Castelfranco*. The first order of the loggia's is Ionick. The hall is placed in the most inward part of the house, that it may be far from the heat and cold. The wings where the niches are seen, are in breadth the third part of its length. The columns answer directly to the last, but one, of the loggia's, and are as far distant from one another, as they are high. The large rooms are one square and three quarters long. The height of the vaults is according to the first method for the height of vaults. The middle sized are square, one third higher than they are broad: their vaults are *à lunetti*. Over the small rooms there are mezzati. The loggia's above are of the Corinthian order. The columns are one fifth less than those underneath. The rooms are with flat cielings, and have some mezzati over them. On one part is the kitchen, and places for housewifery; and on the other, places for servants.

Plate 37. THE fabrick beneath belongs to the Clarissimo Cavalier il Signor LEONARDO MOENICO, at a village called *Marocco*, on the road from *Venice* to *Treviso*. The cellars are above-ground, and over them, in one part, are the granaries, and on the other, conveniencies for the family; and over these places, are the master's rooms, divided into four apartments. The vaults of the larger, are one and twenty foot high, and made of cane, that they may be light. The vaults of the middle-sized are as high as those of the greater. The vaults of the smaller rooms, or closets, are *à crociera*, and seventeen foot high. The loggia below is of the Ionick order. There are four columns in the ground hall, that the height may be proportionable to the breadth. The loggia above is of the Corinthian order, and has a poggio two foot and three quarters high.

THE stairs are placed in the middle, and divide the hall from the loggia, and go up, one contrary to the other, whereby one may go up and down on the right and left; and are both very convenient and beautiful, and sufficiently light.

THIS fabrick has on the wings, the places to make wine, the stables, portico's, and other conveniencies, proper for the use of a villa.

Plate 38. THE under fabrick is at *Panzolo*, a village in the *Trevigiano*, three miles distant from *Castelfranco*, belonging to the Magnificent Signor LEONARDO ERNO. The cellars, the granaries, the stables, and the other places belonging to a villa, are on each side of the master's house; and at the extremity of each of them, is a dove-house, which affords both profit to the master, and an ornament to the place; and to all which, one may go under cover: which is one of the principal things required in a villa, as has been before observed.

BEHIND this fabrick there is a square garden of eighty *campi trevigiani*; in the middle of which runs a little river, which makes the situation very delightful and beautiful.

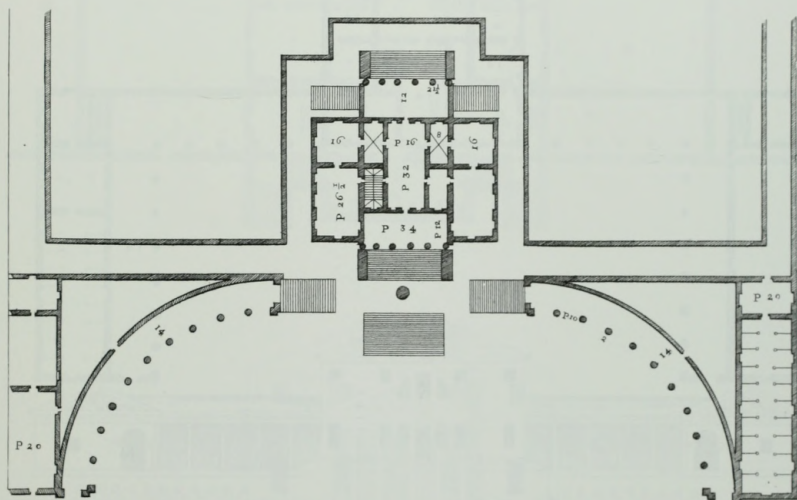
IT has been adorned with paintings by Messer BATTISTA VENETIANO.

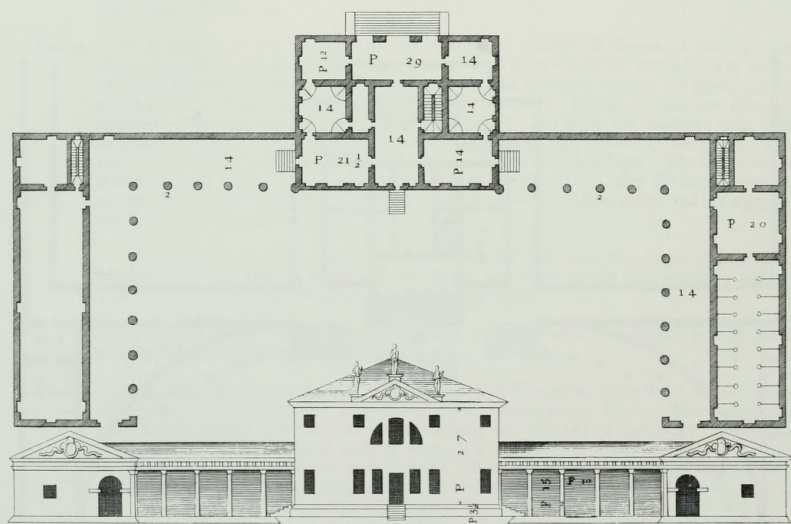
CHAP. XV.

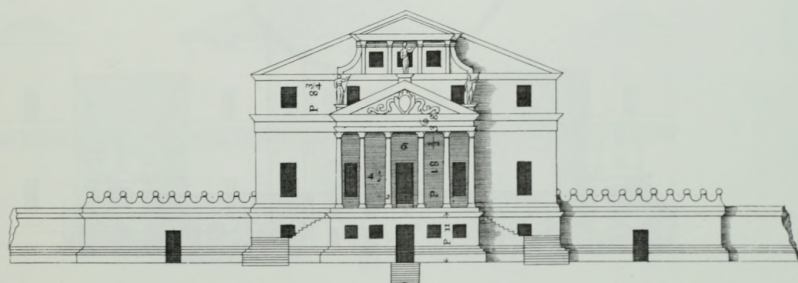
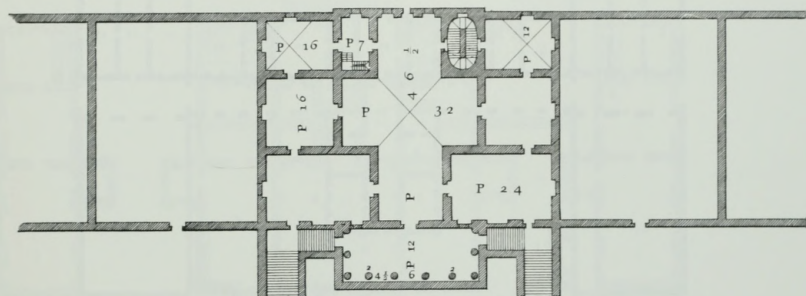
Of the DESIGNS of the VILLA's belonging to some gentlemen of the TERRA FIRMA.

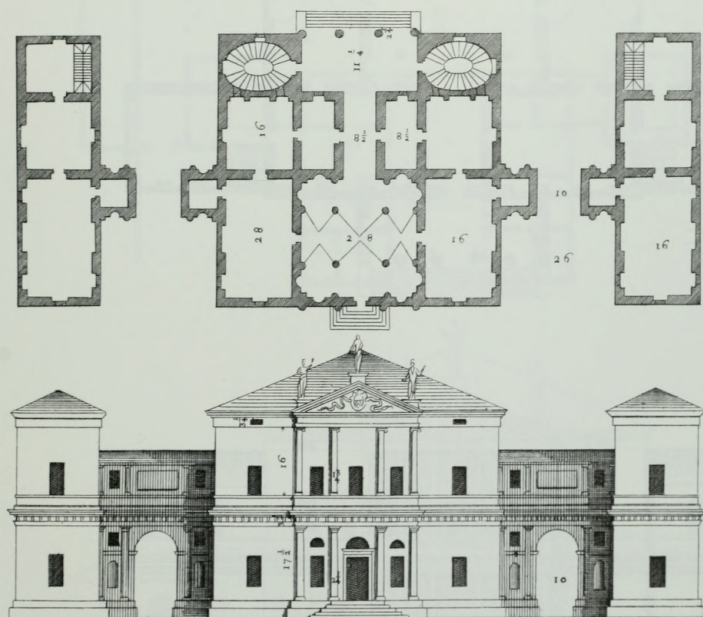
Plate 39. AT a place in the *Vicentine*, called *Finale*, is the following building belonging to Signor BIAGIO SARRACENO. The floor of the rooms is raised five foot above the ground; the larger rooms are one square and five eighths in length, and in height equal to their breadth, and with flat cielings. This height also continues to the hall. The small rooms, near the loggia, are vaulted; the height of the vaults is equal to that of the rooms.

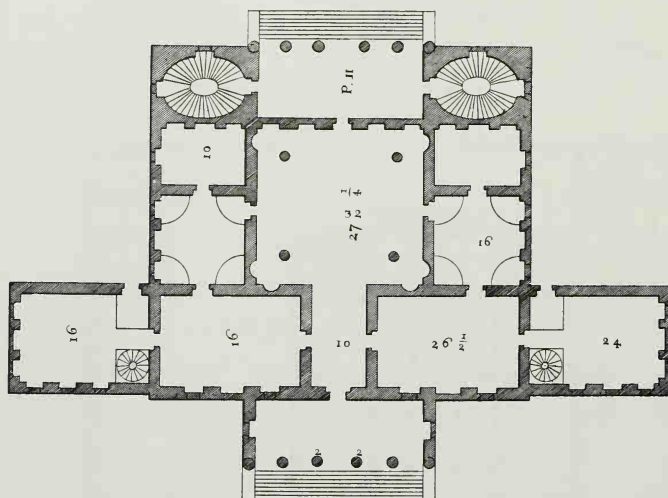
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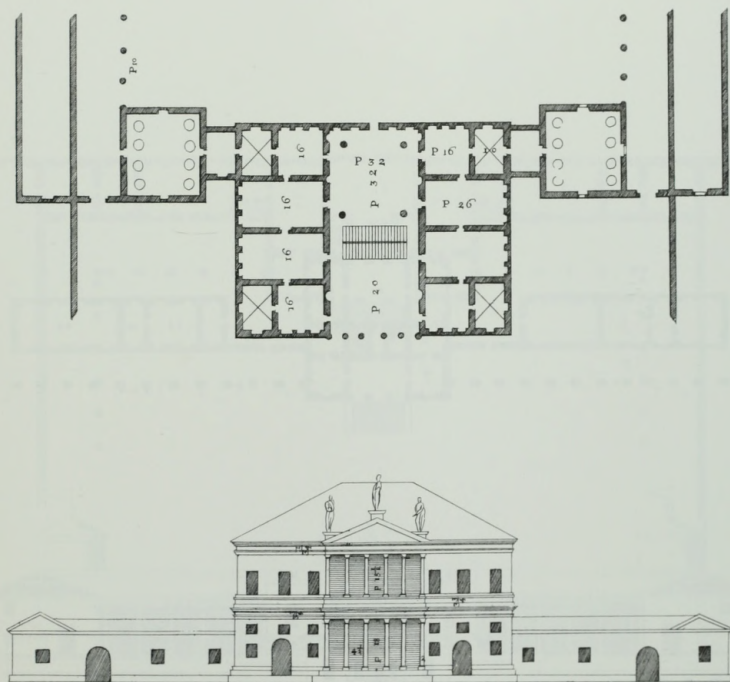


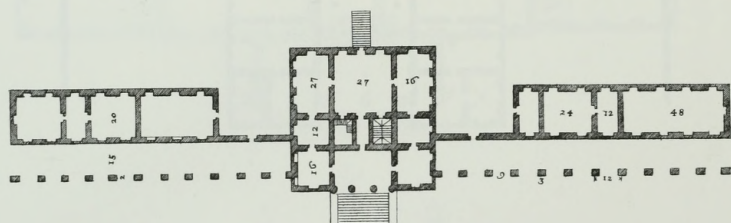


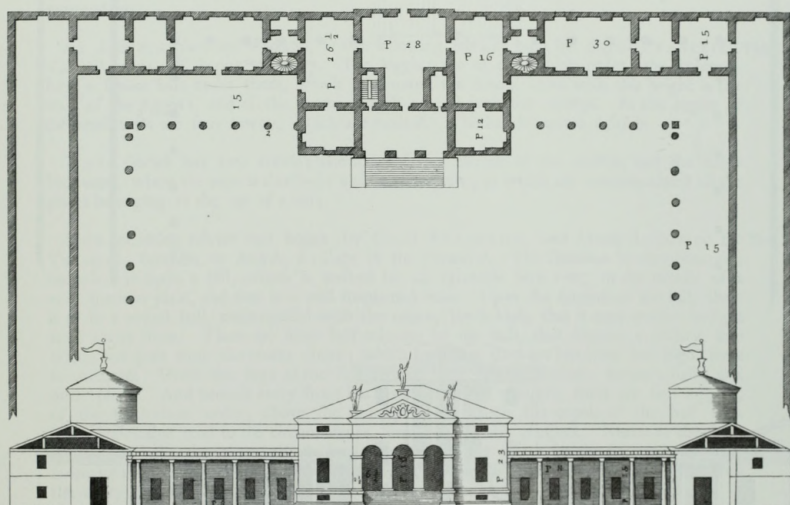


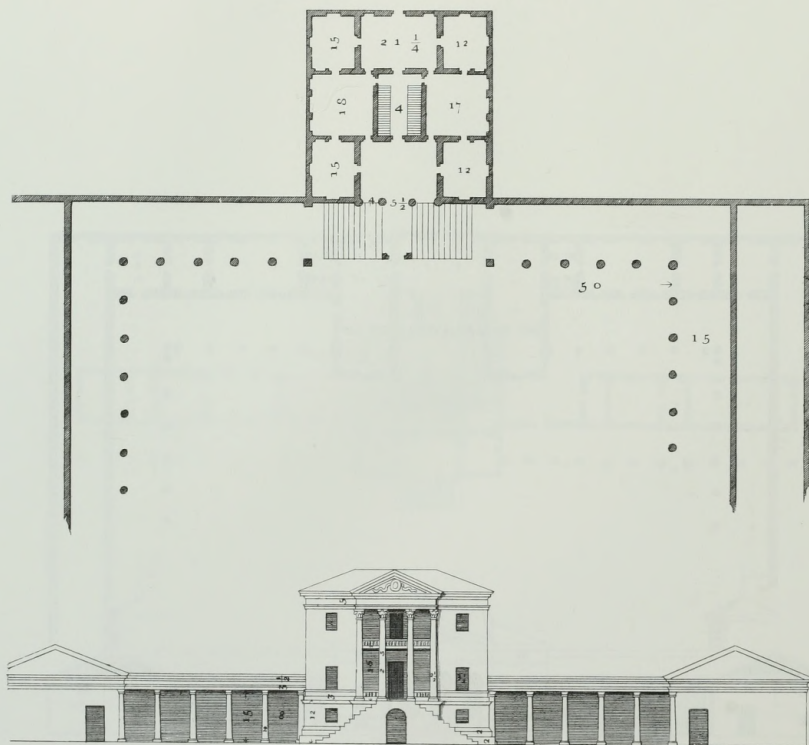












The cellars are underneath, and the granaries above, which take up the whole body of the house. The kitchens are without the house, but so joined, that they are convenient. On each side there are all the necessary places for the use of a villa.

THE following designs are of the fabrick of Signor GIORALAMO RAGONA, a *Vicen-* Plate 40.
tine gentleman, built by him at *Le Gbizzole*, his villa. This fabrick has the conveniencies before mention'd, that is, one may go every where under cover. The pavement of the rooms for the master's use, is twelve foot above the ground: under these rooms, are the conveniencies for the family; and above them, other rooms which may serve for granaries, and also for places to lodge in on occasion. The principal stairs are in the fore front of the house, and answer under the portico's of the court.

IN *Pogliana*, a village, is the following fabrick of the Cavalier *POGLIANA*. Its rooms Plate 41.
have been adorned with paintings and most beautiful stucco's, by Messer *BERNARDINO INDIA*, and Messer *ANSELMO CANERA*, *Veronese* painters, and by Messer *BARTOLOMEO RIDOLFI*, a *Veronese* sculptor. The large rooms are one square, and two thirds long, and are vaulted. The square ones have the lunetti in their angles. Over the small rooms there are mezzati. The height of the hall, is one half more than it is broad; and even with the height of the loggia the hall is vaulted *à fascia*, and the loggia *à crociera*. Over all these places are the granaries, and underneath them the cellars and the kitchen, because the floor is raised five foot above ground. On one side it has the court, and other places for the necessities of a villa; on the other there is a garden, which answers to the said court; and backwards a kitchen-garden, and a fish-pond: so that this gentleman, as he is magnificent, and of a most noble mind, has not spared any of those ornaments, or any of the conveniencies possible, that might render this place of his, beautiful, delightful, and commodious.

AT *Lisiera*, a place near *Vicenza*, is the following fabrick, built by Signor *FRANCESCO* Plate 42.
VALMARANA, of happy memory. The loggia's are of the Ionick order: the columns have a square base under them, which goes round the house. Level with this height is the floor of the loggia's, and of the rooms, which are all with flat ceilings. In the angles of the house there are four towers, which are vaulted. The hall is vaulted *à fascia*.

THIS fabrick has two courts; one forward, for the use of the master, and the other backward, where the corn is threshed: and has covertures, in which are accommodated all the places belonging to the use of a villa.

THE following fabrick was begun by Count *FRANCESCO*, and Count *LODOVICO DE* Plate 43.
TRISSINI, brothers, at *Meledo*, a village in the *Vicentine*. The situation is very beautiful, because it is upon a hill, which is washed by an agreeable little river, in the middle of a very spacious plain, and near to a well frequented road. Upon the summit of the hill, there is to be a round hall, encompassed with the rooms, but so high, that it may receive its light from above them. There are some half columns in the hall, that support a gallery, into which one goes from the rooms above; which by reason they are but seven feet high, serve for mezzati. Under the floor of the first rooms, there are the kitchens, servant's halls, and other places. And because every front has a very beautiful prospect, there are four loggia's, of the Corinthian order; above the frontpieces of which the cupola of the hall rises. The loggia's that tend to the circumference, form an agreeable prospect. Nearer to the plain, are the hay-lofts, the cellars, the stables, the granaries, the places for the farmer, and other rooms for the use of the villa. The columns of these portico's are of the Tuscan order. Over the river, in the angles of the court, are two dove-houses.

THE under-placed fabrick is at *Campiglia*, a place in the *Vicentine*, and belongs to Sig- Plate 44.
nor *MARIO REPETA*, who has executed, in this fabrick, the will of his father, Signor *FRANCESCO*, of happy memory. The columns of the portico's are of the Dorick order: the intercolumniations are four diameters of a column. In the extrem angles of the roof, where the loggia's, are seen without the whole body of the house, there are two dove-houses, and the loggia. On the flank, opposite to the stables, there are rooms, of which, some are still dedicated to continency, others to justice, and others to other virtues, with elegiums and paintings adapted to the subject; part of which is the work of Messer *BATTISTA MANGANZA*, a *Vicentine* painter, and an excellent poet. This was done, that this gentleman, who very courteously receives all those who go and see him, may lodge his visitors and friends in the rooms inscribed to that virtue to which he thinks them most inclined. This fabrick has this conveniency, that one can go every where under cover. And because the part for the master's dwelling, and that for the use of the villa, are of the same order;

as much at that loses in grandeur, for not being more eminent than this, so much this of the villa increases in its proper ornament and dignity, by being made equal to that of the master, which adds beauty to the whole work.

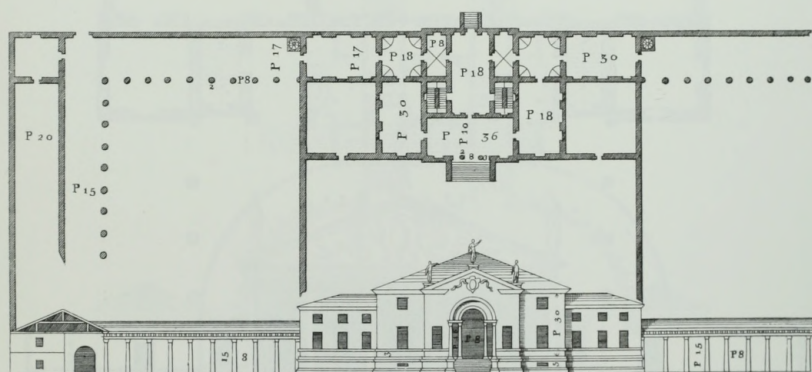
Plate 45. THE following fabrick belongs to the Count OLEARDO and Count THEODORO DE THIENI, brothers, and is at *Cigogna*, his villa; which fabrick was begun by Count FRANCESCO their father. The hall is in the middle of the house, and has round it some Ionick columns, over which there is a gallery, level with the floor of the rooms above. The vault of this hall reaches up to the roof. The large rooms are vaulted *à scabfo* and the square ones *à mezzo cadina* and rise in such a manner, that they form four little towers in the angles of the fabrick. The small rooms have their mezzati over them, the doors of which answer to the middle of the stairs. The stairs are without a wall in the middle; and because the hall by receiving the light from above, is very clear, these also have light enough: as they are void in the middle besides, they also receive light from above. In one of the covertures, on the sides of the court, there are the cellars, and the granaries; on the other, the stables, and the places for a villa. Those two loggia's, which like arms come out of the fabrick, are made to join the master's house with that of the villa. Near this fabrick, there are two courts of old building, with portico's; the one to thresh the corn in, and the other for the under part of the family.

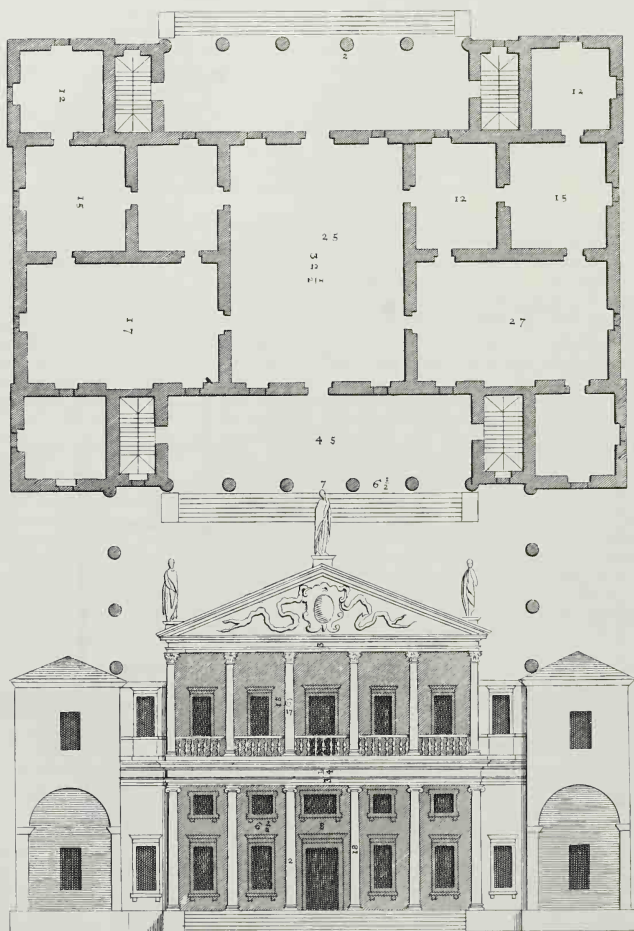
Plate 46. THE following fabrick belongs to the Count GIACOMO ANGARANO, and was built by him at his villa at *Angarano* in the *Vicentine*. On the sides of the court there are the cellars, granaries, places to make wines, places for the farmer, stables, dove-house; and farther, in one part of the court, places for the necessaries of a villa; and on the other a garden. The master's house, which is placed in the middle, is vaulted in the lower part, and in that above cieled. The small rooms above, as well as those below, have mezzati. Near to this fabrick the *Brenta* runs, a river abounding with excellent fish. This place is celebrated for the good wines that are made there, and the fruits that grow there, but much more for the courtesy of the master.

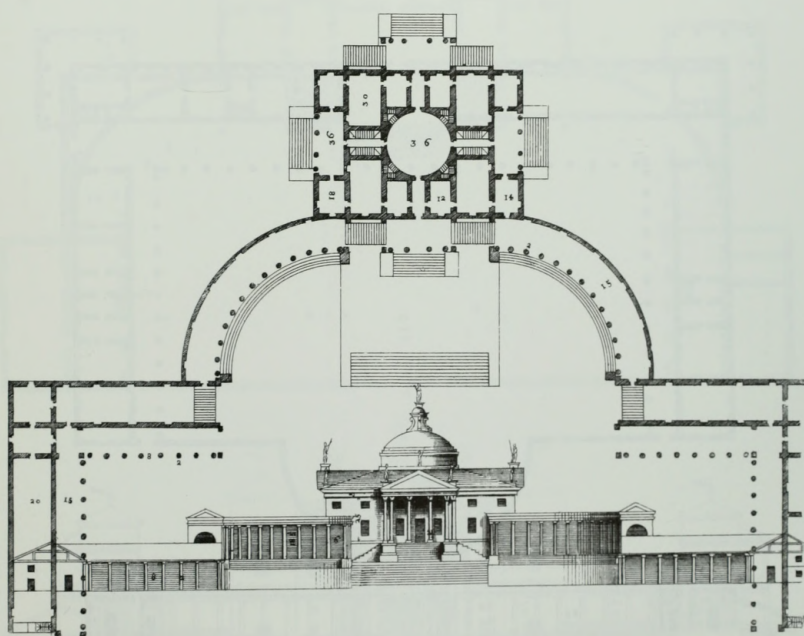
Plate 47. THE designs that follow, are of the fabrick belonging to Count OTTAVIE THIENE, at *Quinto*, his villa. It was begun by the Count MARC ANTONIO, his father, of happy memory, and by Count ADRIANO, his uncle. The situation is very beautiful, having on one part the *Tesina*, and on the other a branch of the said river, which is pretty large. This palace has a loggia before the gate, of the Dorick order: through this one passes into another loggia, and from that into a court, which has on the sides two loggia's; on the one, and on the other end of these loggia's, are the apartments or rooms, some of which have been adorned with paintings by Messer GIOVANI INDEMIO VINCENTINO, a man of a very fine genius. Opposite to the entrance one finds a loggia, like that at the entrance; from which one enters into an atrio of four columns; and from that into the court, which has portico's of the Dorick order, and serves for the use of the villa. There are no principal stairs that correspond with the whole fabrick, because the part above is intended only for stores, and places for servants.

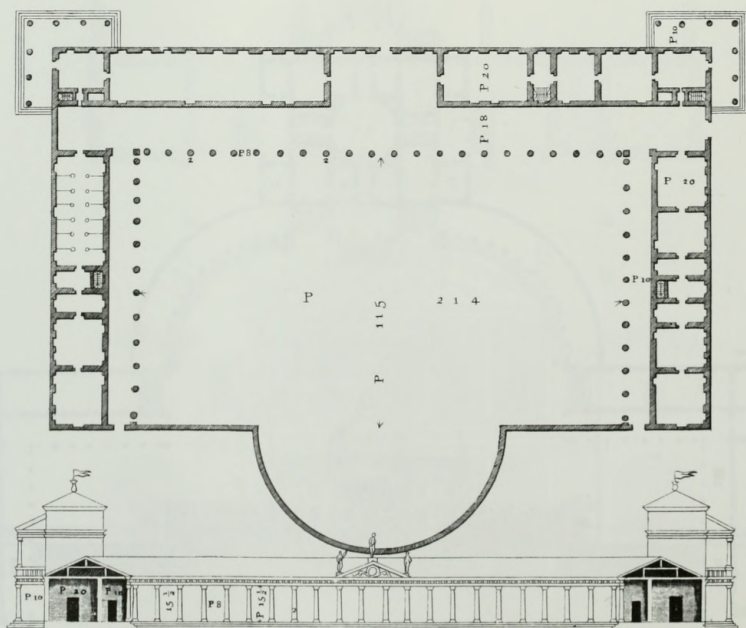
Plate 48. AT *Lonedo*, a place in the *Vicentine*, is the following fabrick, belonging to Signor GIROLAMO DE GODI. It is placed upon a hill that has a beautiful prospect, and near a river that serves for a fish-pond. To make this place commodious for the use of a villa, courts have been made, and roads upon vaults, at no small expence. The fabrick in the middle, is for the habitation of the master, and of the family. The master's rooms have their floor thirteen feet high from the ground, and are with ciellings; over these are the cellars, and the part underneath, that is, in the height of the thirteen foot, are disposed the cellars, the places to make wines, the kitchens, and such like other places. The hall reaches, in height, up to the roof, and has two rows of windows. On either side of this body of the fabrick, there are courts, and the covered places for the necessaries of a villa. This fabrick has been adorned with paintings of a beautiful invention by Messer GUALTIERA PADOVANO, by Messer BATTISTA DEL MORO VERONESE, and by Messer BATTISTA VENETIANO. Because this gentleman, who is a very judicious man, in order to bring it to all the excellency and perfection possible, has not spared any cost, and has pitched on the most singular and excellent painters of our time.

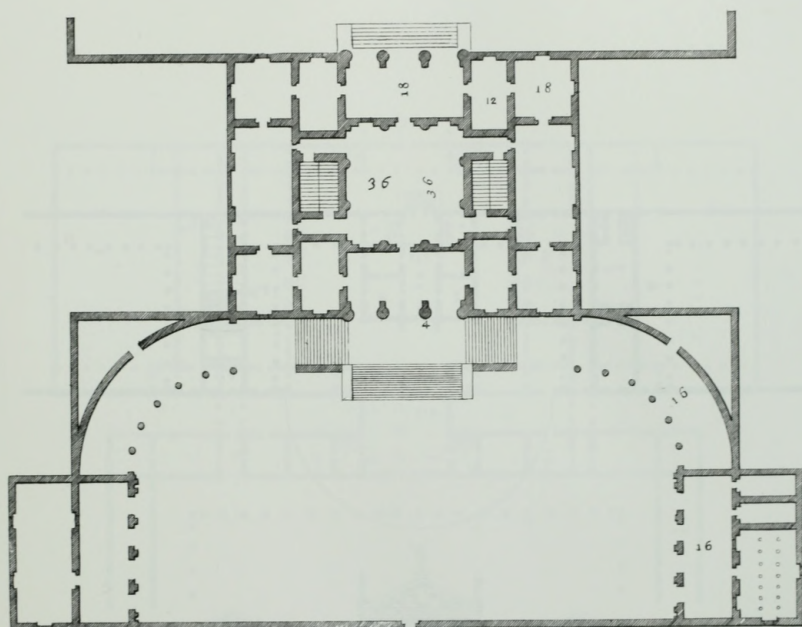
Plate 49. AT *Santa Sofia*, a place five miles from *Verona*, is the following fabrick belonging to Signor Conte MARC ANTONIO SAREGO. It is placed in a very beautiful situation, that is, upon a hill of a most easy ascent, which discovers a part of the city, and between two small vales. All the hills about it are very agreeable, and abound with most excellent water, therefore this fabrick is adorned with gardens and marvellous fountains. This place, for its agreeableness, was the delights of the Señora DALLA SCALLA; and by some vestigia, that are

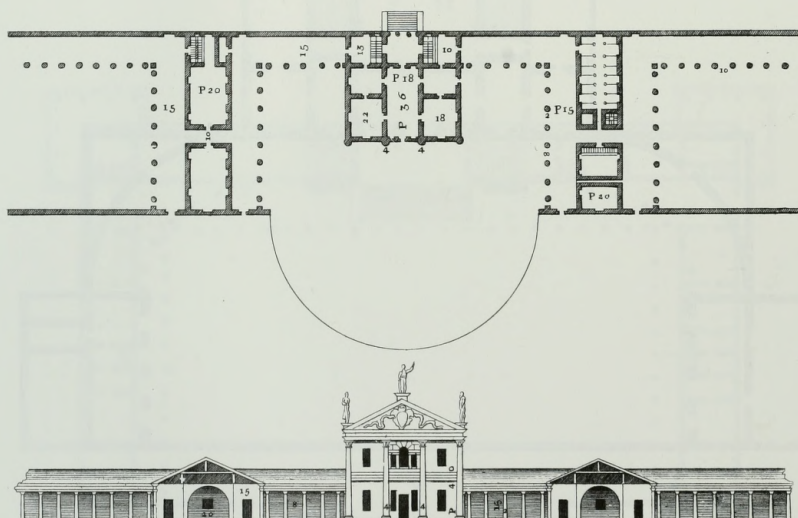


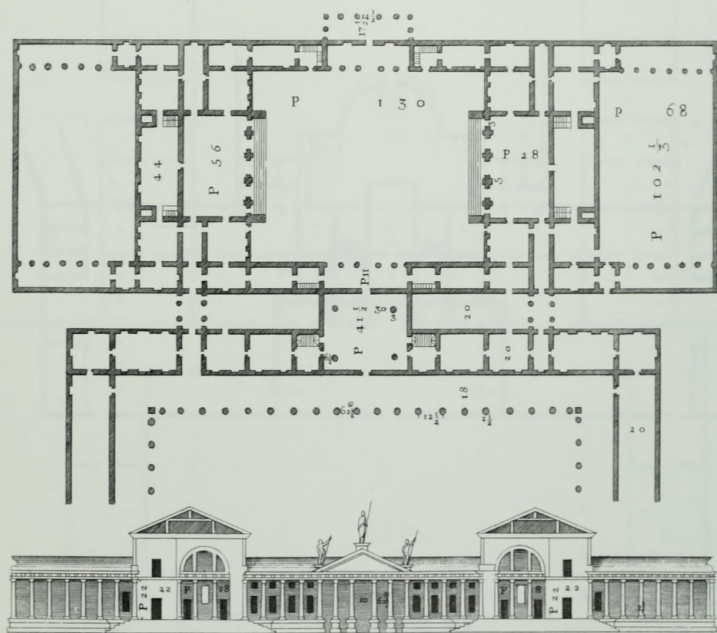


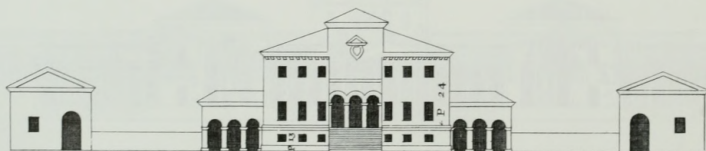
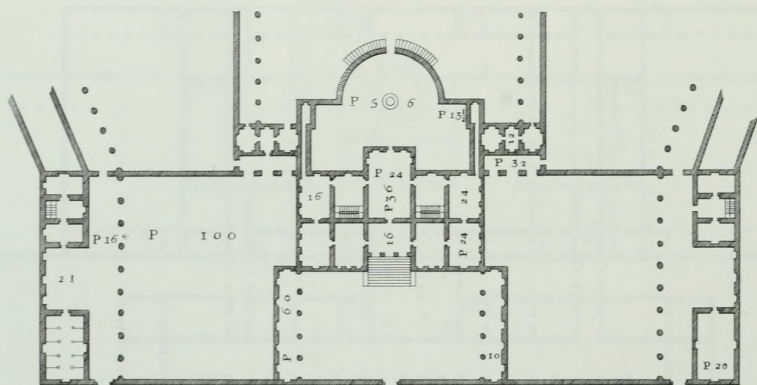


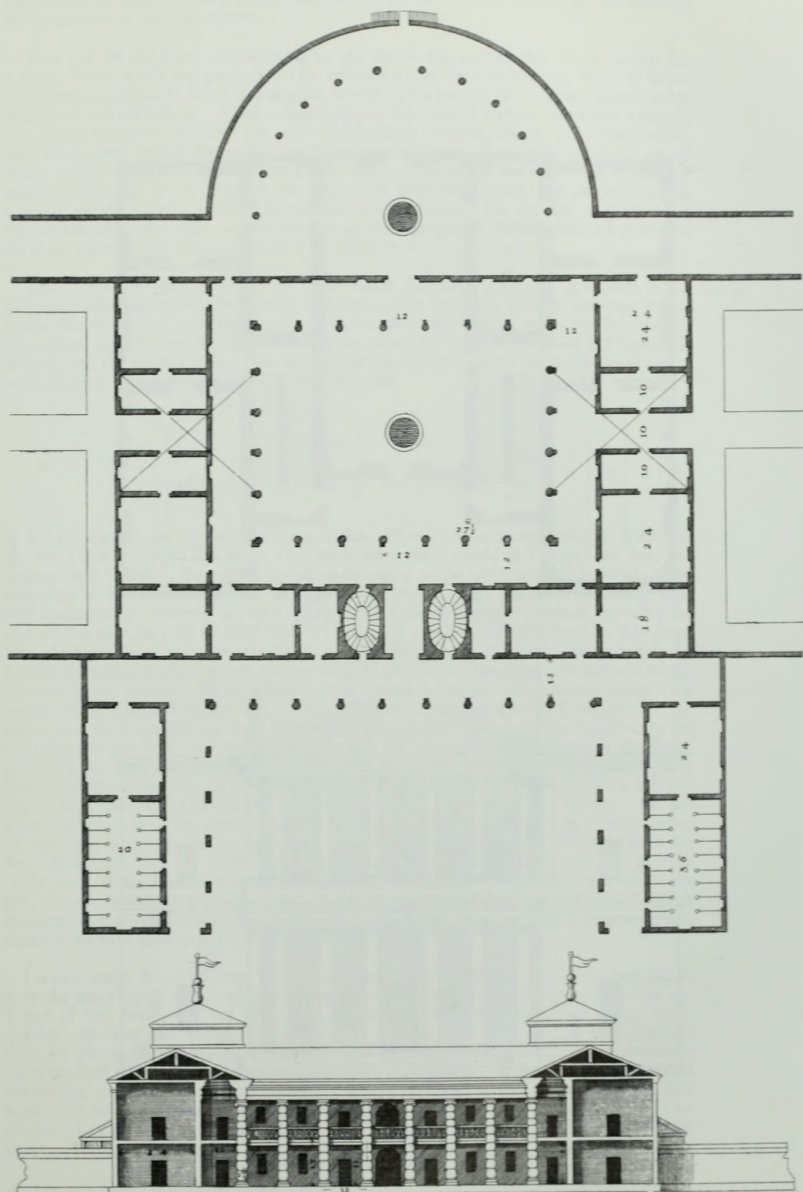


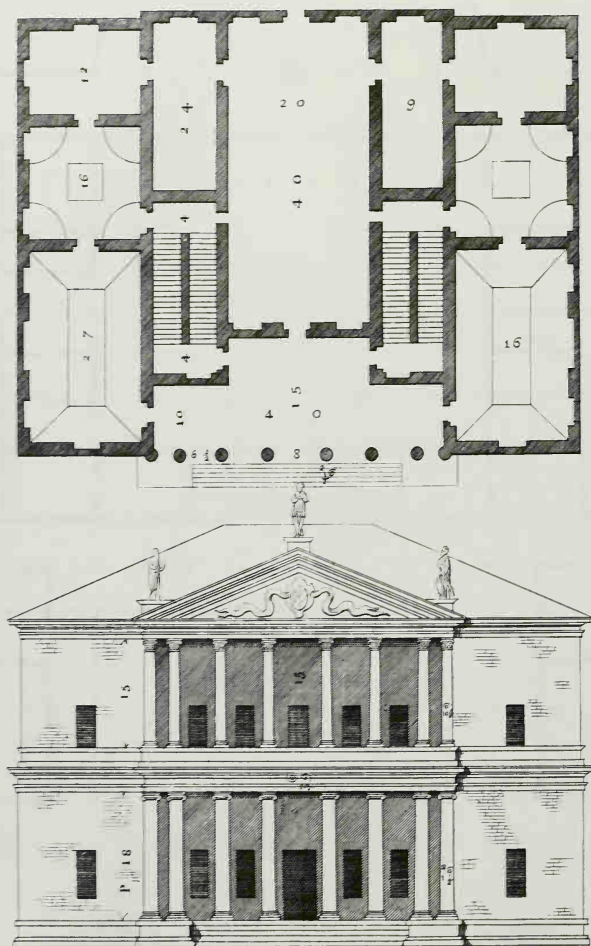












are there to be seen, one may comprehend, that in the time of the *Romans*, it was also held by the antients in no small esteem.

THE part of this house which serves for the use of the master, and of the family, has a court, round which are portico's. The columns are of the Ionick order, made of unpolished stones; as it should seem a villa requires, to which plain and simple things are more suitable than those that are delicate. These columns support the outward cornice, that forms a gutter; into which the water falls from the roof. Behind these columns, that is, under the portico's, there are pilasters which support the pavement of the loggia above, that is, of the second floor. In this second floor there are two halls, the one opposite to the other; the largeness of which is expressed in the design of the plan, with lines that intersect one another, and are drawn from the outward walls of the fabrick to the columns. On the side of this court is that for the use of the villa; on the one and on the other part of which, there are covertures for those conveniences that are required in villa's.

THE following fabrick belongs to Signor Conte ANIBALE SAREGO, at a place in the *Plaine de Cologne*, called *la Misa*. A pedestal, four foot and a half high, forms a base to the whole fabrick; and at this height is the pavement of the first rooms; under which there are the cellars, the kitchens, and other rooms for the use of the family. The said first rooms are vaulted, and the second cield. Near this fabrick there is the court for the necessities of a villa, with all those places that are suitable to such a use.

CHAP. XVI.

Of the VILLA's of the antients.

I HAVE hitherto put the designs of many fabricks, for villa's done by my direction. It remains that I should also put the design of a house for a villa, which, as *VITRUVIUS* says, the antients used to make; because all the places belonging to the habitation, and to the uses of the villa, may be seen in it exposed to that region of the heaven which is suitable for them. Nor shall I expatiate in referring to what *PLINY* says upon this subject; because my chief intent at this time, is only to shew how *VITRUVIUS* ought to be understood in this place. The principal front is turned to the south, and has a loggia, from which one goes into the *Plaine* 51. kitchen through a passage, which receives its light from above the places adjacent, and has the chimney in the middle. On the left hand there are the stables for oxen, whose mangers are turned to the fire, and to the east. The baths are also on the same part, which, for the rooms that these require, are at a distance from the kitchen, even with the loggia. On the right hand is the press, and other places for the oil, answerable to the places for the baths, and front the east, south, and west. Backwards there are the cellars, which receive their light from the north, and are far from noise, and from the heat of the sun. Over the cellars are the granaries, which receive their light from the same part of the heaven. On the right and left part of the court, there are the stables for horses, sheep, and other animals; the hay-lofts, the places for straw, and the bake-houses; all which ought to be far from the fire. Backwards one sees the master's habitation, the principal front of which is opposite to the front of the house for the uses of the villa: so that in these houses, built out of the city, the atrio's were in the back part. In this are observed all those considerations of which mention has been made before, when the design of the antient private house was given; and therefore we have now only considered what regards the villa.

I HAVE made the frontispiece in the fore-front in all the fabricks for villa's, and also in some for the city, in which are the principal gates; because such frontispieces shew the entrance of the house, and add very much to the grandeur and magnificence of the work. Besides, the fore-part being thus made more eminent than the rest, is very commodious for placing the ensigns or arms of the owners, which are commonly put in the middle of the front. The antients also made use of them in their fabricks, as is seen in the remains of the temples, and other publick edifices; from which, as I have said in the preface to the first book, it is very likely that they took the invention, and the reasons for private edifices or houses. *VITRUVIUS*, in the last chapter of his third book, teaches how they are to be made.

CHAP. XVII.

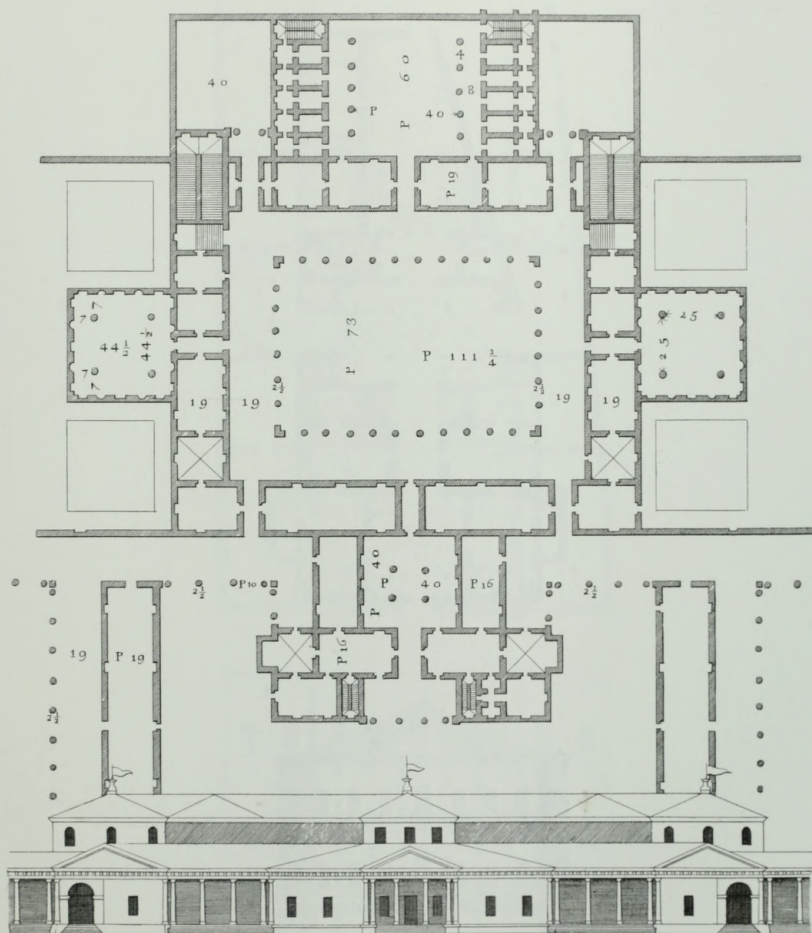
Of some INVENTIONS, according to divers situations.

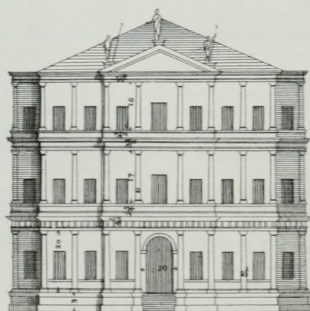
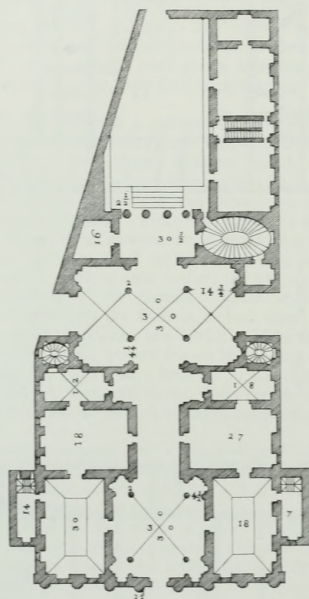
MY intention was to speak only of those fabricks which were either compleated, or begun, and carried on so far that one might soon expect them to be finished: but knowing that it is very often necessary to conform one's self to the situation, as one does not always build in open places, I was afterwards persuaded that the annexing to the foregoing designs some few inventions, made by me at the request of divers gentlemen, would not be deviating from our purpose; and which they have not executed, for those reasons which ordinarily happen; because of their difficult situations, and the method I have observed in accommodating in them the rooms, and the other places, that they might have a correspondence and proportion the one to the other, may (as I imagine) be of no small utility.

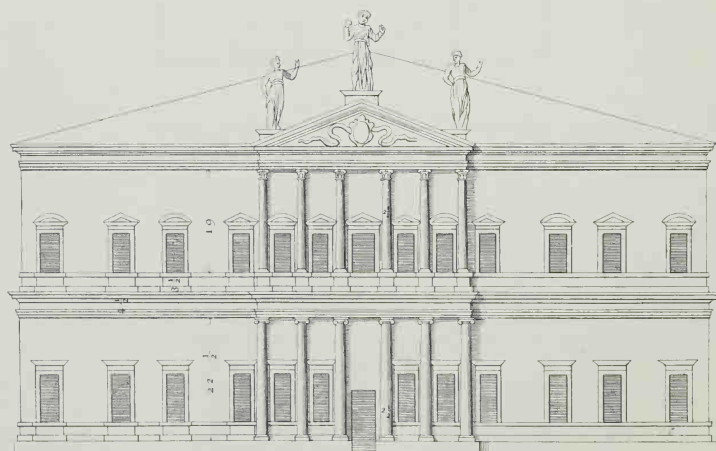
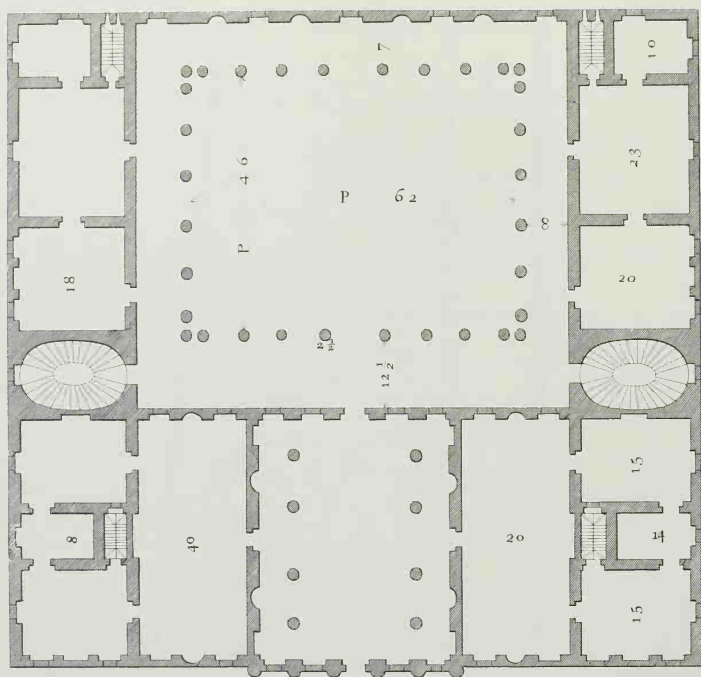
Plate 52. THE situation of the first invention is pyramidal. The base of the pyramid comes to the principal front of the house, which has three orders of columns, that is, the Dorick, the Ionick, and the Corinthian. The entrance is square, and has four columns, which support the vault, and make the height proportionable to the breadth. On the one, and on the other part, there are two rooms, one square and two thirds long, and in height according to the first method for the heights of vaults. Near each there is a small room, and stairs to go up to the mezzati. At the head of the entrance I intended to make two rooms, one square and an half long, and then two small rooms in the same proportion with the stairs that should lead to the mezzati; and, a little farther, the hall, one square and two thirds long, with columns equal to those of the entrance. There would have been a loggia, in the flanks of which should have been the stairs in an oval form; and a little farther the court, on the side of which would have been the kitchens. The second rooms, that is, those of the second order, would have had twenty feet in height, and those of the third eighteen; but the height of each hall would have been up to the roof. And these halls would have had, even with the floor of the upper rooms, some corridors, which would have served to place persons of respect in, at the time of festivals, banquetings, and such like diversions.

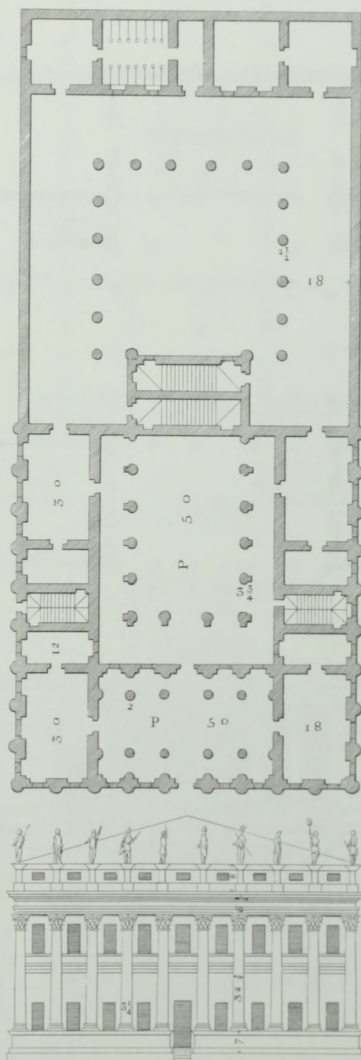
Plate 53. I MADE the following invention for a situation at *Venice*. The principal front has three orders of columns; the first is Ionick, the second Corinthian, and the third Composite. The entrance advances a little outwards, and has four columns equal to, and like those in the front. The rooms that are on the flanks have the height of their vaults according to the first method for the height of vaults. Besides these there are small rooms, closets, and the stairs that serve to the mezzati. Opposite to the entrance, there is a passage, through which one goes into another smaller hall, which on one side has a small court, from whence it receives light, and on the other, the principal and larger stairs, of an oval form, void in the middle, and with columns round them, that support the steps. Farther, one enters into a loggia, through a passage, the columns of which are of the Ionick order, equal to those of the entrance. This loggia has an apartment on each side, like those of the entrance; but that which is on the left lessens a little by reason of the situation. Near this there is a court, with columns round it, that form a corridor, which serve the rooms backwards, where the women were to have been; and there the kitchen should have stood. The part above is like that below, except the hall over the entrance, which has no columns, and joins in height up to the roof, and has a corridor, or balcony, even with the third rooms, that would also have served to the windows above, because there would have been two orders of them in this hall. The smaller hall would have had the beams even with the vaults of the second rooms; and these vaults would have been three and twenty feet high. The rooms of the third order would have been ciled, and eighteen feet high. All the doors and windows would have faced, and have been over one another; and all the walls would have had their share of the weight. The cellars, the places to wash clothes in, and the other magazines, would have been accommodated under ground.

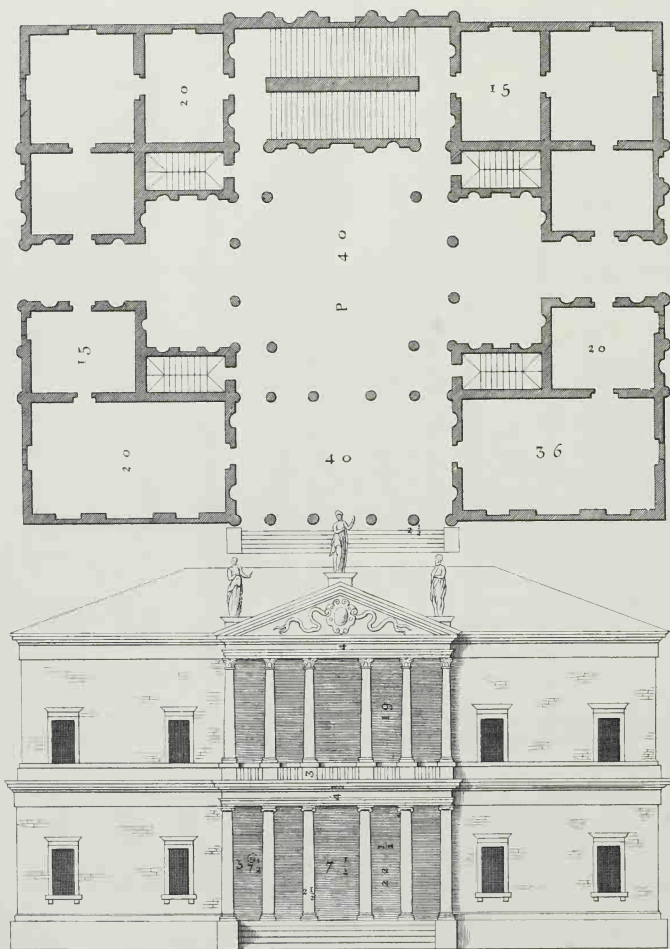
Plate 54. I MADE the following invention at the request of the Count FRANCESCO, and Count LODOVICO DE TRISSINI, brothers, for a situation belonging to them at *Vicenza*; according to which, the house would have had a square entrance, divided into three spaces by columns of the Corinthian order, that its vault might have had strength and proportion. On the flanks there would have been two apartments, with seven rooms in each, including three mezzati, to which the stairs would have served that were on one side of the small rooms. The height of the greater rooms would have been seven and twenty feet, and of the middling and smaller eighteen. Farther in would the court have been found, encompassed with
loggia's

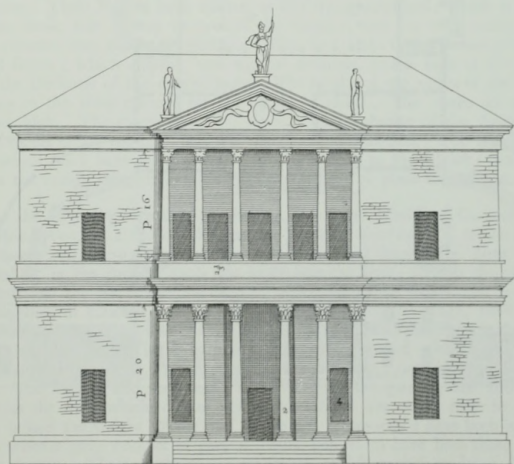
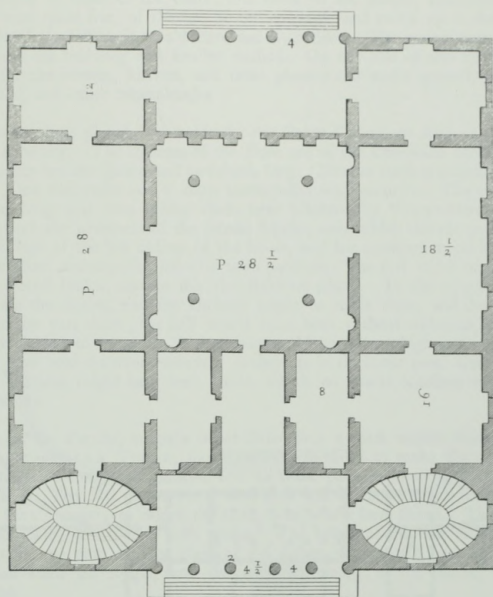


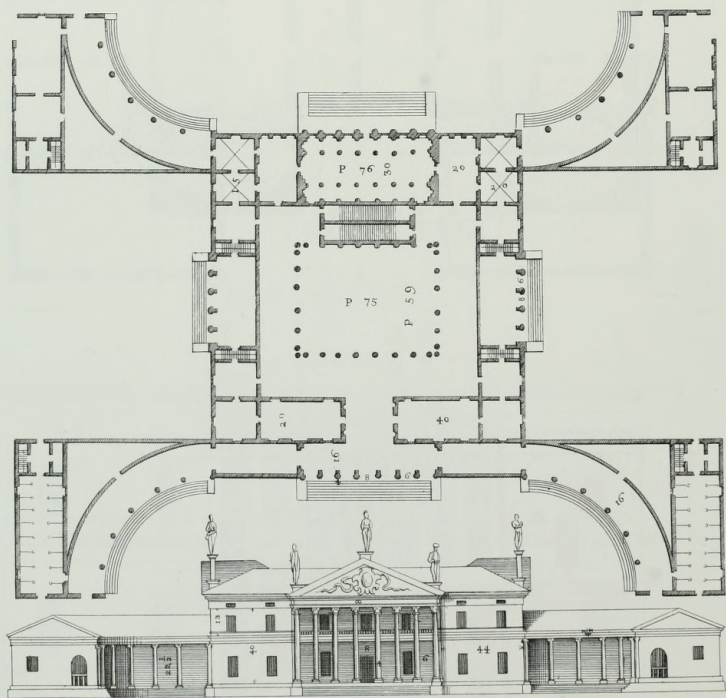












loggia's of the Ionick order. The columns of the first order of the front wou'd have been Ionick, and equal to those of the court; and those of the second, Corinthian. The hall wou'd have been quite free, of the size of the entrance, and raised up to the roof. Even with the floor of its soffita, it wou'd have had a corridor. The greater rooms wou'd have been ceiled, and the middling and smaller vaulted. On one side of this court wou'd have been rooms for the women, kitchen, and other places; and under ground, the cellars, the places for wood, and other conveniencies.

THE invention here placed, was made for the Count GIACOMO ANGARANO, for a site Plate 55. of his in the same city. The columns of the front are of the Composite order. The rooms near the entrance are one square and two thirds long. Next to them is a closet, and over that a mezzato. One then passes into a court encompassed with portico's. The columns are six and thirty feet long, and have behind them some pilasters, by VITRUVIUS called Parastatice, that support the pavement of the second loggia; over which there is another uncover'd, even with the floor of the last ceiling of the house, and has corridors round it. Farther one finds another court, encompassed likewise with portico's. The first order of the columns is Dorick, the second Ionick, and in this the stairs are placed. In the opposite part to the stairs, there are the stables, and the kitchens might be made there, and the places for servants. As to the part above, the hall wou'd have been without columns, and its ceiling wou'd have reached up to the roof. The rooms wou'd have been as high as they are broad; and there wou'd have been closets and mezzati, as they are in the lower part. Over the columns in the front a corridor might have been made, which on several occasions would have been very commodious.

IN *Verona*, at the *Portoni*, vulgarly called *Della Brà*, a most notable situation, the Count Plate 56. GIO. BATTISTA DELLA TORRE, sometime since intended to make the under placed fabrick, which wou'd have had gardens, and all those parts required in a commodious and delightful place. The first rooms wou'd have been vaulted, and over all the small ones there wou'd have been mezzati; to which the small stairs wou'd have served. The second rooms, that is, those above, wou'd have been ceiled. The height of the hall wou'd have reached up to the roof; and even with the plane of the soffita, there wou'd have been a corridor or balcony; and from the loggia, and the windows placed in the flanks, it wou'd have received light.

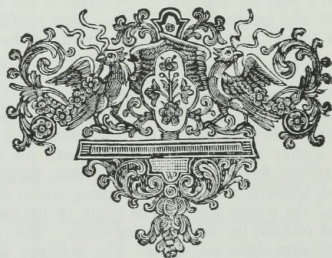
I MADE also the following invention for the Cavalier GIO. BATTISTA GARZADORE, a *Vi-* Plate 57. *centine* gentleman, in which are two loggia's, one forwards, and the other backwards, of the Corinthian order. These loggia's have soffites, as also the ground hall; which is in the inmost part of the house, that it may be cool in the summer, and has two orders of windows. The four columns that appear, support the soffita, and make the pavement of the hall above strong and secure; which is square, and without columns, and as high as it is broad, and as much as the thickness of the cornice more. The height of the vaults of the greater rooms is according to the third manner for the height of vaults. The vaults of the closets are sixteen foot high. The rooms above are ceiled. The columns of the second loggia's are of the Composite order, the fifth part less than those underneath. The loggia's have frontispieces, which (as I have said,) give no small grandeur to the fabrick; making it more elevated in the middle, than it is in the flanks, and serve to place the ensigns.

I MADE the following invention at the request of the Clarissimo Cavalier il Sig. LEONARDO MOCENICO, for a site of his upon the *Brenta*. Four loggia's, which like arms tend to the circumference, seem to receive those that come near the house. Near these loggia's are the stables, in the part forwards that looks over the river; and on the part backwards, the kitchens, and the places for the steward, and the farmer. The loggia in the middle of the front is thick of columns, which, because they are forty foot high, have behind them some pilasters two feet wide, and one foot and a quarter thick, that support the floor of the second loggia. And farther in, one finds the court encompassed with loggia's of the Ionick order. The portico's are as wide as the columns are long; one diameter of the column excepted. The loggia's and the rooms that look over the gardens, are also of the same breadth, that the wall which divides one member from the other, may be placed in the middle to sustain the weight of the roof. The first rooms wou'd have been very convenient to eat in, when a great number of persons should happen to have been there, and are in a double proportion. Those of the angles are square, and have their vaults *à schifo*, as high up to the impost as the room is broad, and are cover'd one third of the breadth. The hall is two squares and an half long. The columns are put there to proportion the length and breadth to the height; and those columns wou'd have been in the ground hall only, that the hall above might have been quite free. The columns of the upper loggia's over the court are one fifth less than those underneath them, and are of the Corinthian order. The rooms
above

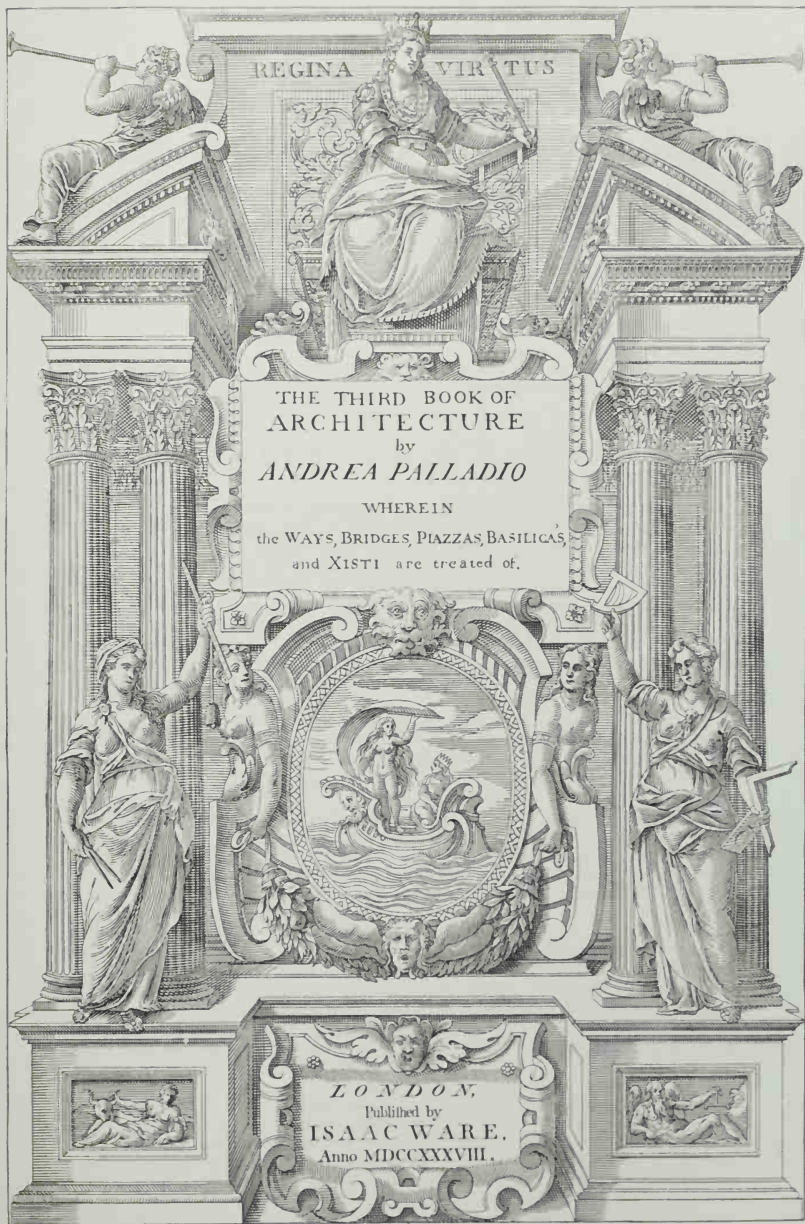
above are as high as they are broad. The stairs are at the end of the court, and ascend one opposite to the other.

AND with this invention, praise be to God, I have put an end to these two books; in which, with as much brevity as possible, I have endeavoured to put together, and teach easily, with words and figures, all these things that seemed to me most necessary, and most important for building well; and particularly for building private houses, that they may in themselves contain beauty, and be of credit and conveniency to the owners.

The END of the SECOND BOOK.



T H E



REGINA VIR TUS

THE THIRD BOOK OF
ARCHITECTURE
by
ANDREA PALLADIO

WHEREIN
the WAYS, BRIDGES, PIAZZAS, BASILICAS,
and XISTI are treated of.

LONDON,
Published by
ISAAC WARE,
Anno MDCCXXXVIII.

THE THIRD BOOK

O F

Andrea Palladio's ARCHITECTURE.

The PREFACE to the READER.

HAVING fully treated of private edifices, and taken notice of all the most necessary advancements that ought in them to be had; and having, besides this, put the designs of many of those houses, that have been by me directed, both within and without cities, and of those which (according to VITRUVIUS) were made by the antients; it is very proper, that, in directing my discourse to more excellent, and to more magnificent fabricks, I should now pass on to the publick edifices: in which, as they are made more stately, and with more exquisite ornaments than the private, and serve for the use and conveniency of every body, princes have therein a very ample opportunity to make the world acquainted with the greatness of their souls, and architects a very fine one to shew their capacity in beautiful and wonderful inventions.

I DESIRE therefore in this book, in which my antiquities begin, and in the others, which, God willing, shall follow, that so much the more attention may be applied, in considering the little that shall be said, and the designs that shall be given, as I have, with far greater fatigue, and much longer vigilancy, reduced those fragments that remained of the antient edifices, to such a form, that the observers of antiquity may (I hope) take delight therein, and the lovers of architecture may thence receive very great utility; there being much more to be learnt from good examples in a little time, by measuring and seeing the entire edifices, with all their parts, upon a small leaf, than in a long time from words, by which, with the imagination only, and still some difficulty, the reader is able to attain to a firm and certain knowledge of what he reads, and with much more difficulty will he put it in practise.

AND to every one, that is not altogether void of judgment, it may be very manifest, how good the method was, which the antients observed in building; since after so much time, and after so many ruins and mutations of empires, there still remain both in *Italy* and out of it, the vestiges of so many of their sumptuous edifices, by which we are able to get at a certain knowledge of the *Roman* virtue and grandeur, which perhaps had not otherwise been believed. I therefore, in this third book, (in placing the designs of the edifices contained in it) shall observe this order.

IN the first place, I shall put those of the streets, and of the bridges, as belonging to that part of architecture which regards the ornaments of cities and of provinces, and which serves for the universal conveniency of mankind. For, as in the other fabricks which the antients made, one may easily apprehend that they had no regard either to expence, or to any labour to bring them to that pitch of excellency, which has been granted them from our imperfection; so, in directing the roads, they took very great care, that they should be made in such a manner, that also in them might be known the grandeur and the magnificence of their minds. Wherefore, to make them both commodious

dious and short, they cut through mountains, dried up fens, and joined with bridges, and so made easy and plain, those places, that had been sunk, either by vales or torrents.

I SHALL, afterwards, treat of piazza's in the manner that VITRUVIUS shews us the *Greeks* and *Latins* made them, and of those places that ought to be distributed round the piazza's. And because, among these, that place is worthy of great consideration, where the judges administer justice, called by the antients *Basilica*, the designs of it shall be particularly set down. But because it is not sufficient, that the regions and the cities be well disposed and governed by most sacred laws, and have magistrates, who, as executors of the laws, keep the citizens in awe; if men are not also made prudent by learning, and strong and hearty by bodily exercise, that they may be able to govern both themselves and others, and to defend themselves from those who would oppress them; which is one principal reason why the inhabitants of some countries, when dispersed in many small places, unite themselves, and form cities: wherefore the antient *Greeks* made in their cities (as VITRUVIUS relates) some edifices, which they called *Palestræ* and *Xysti*, in which the philosophers assembled to dispute concerning the sciences, and the younger men were every day exercised; and at certain appointed times the people assembled there to see the wrestlers contend.

THE designs of those edifices shall also be inserted, and an end so put to this third book. After which, shall follow that of the temples belonging to religion, without which it would be impossible that civil society could be maintained.



THIS line is half of the *Vicentine* foot, with which the following edifices have been measured.

THE whole foot is divided into twelve inches, and each inch into four minutes.

CHAPTER I.

Of ROADS.

THE roads ought to be short, commodious, safe, delightful and beautiful; they will be short and commodious if made in a strait line, and if they be made ample, that so the carts and the cattle meeting, do not impede one another. And therefore it was an establish'd law among the antients, that the roads should not be narrower than eight foot, where they were strait; nor less than sixteen wide where they were crooked and winding. They will, besides this, be commodious if they are made even, that is, that there may not be any places, in which one cannot easily march with armies, and if they are not obstructed by water or rivers. We therefore read that the Emperor TRAJAN, regarding these two qualities, necessarily required in roads, when he repaired the most celebrated *Appian* way, which in many places was damaged by length of time, dried up fenny places, levelled mountains, filled up valleys, and erecting bridges where necessary, made travelling thereon very expeditious and easy.

ROADS will be safe if made on hills, or if, when made through fields, according to antient custom, they have a causeway to travel on, and if they have no places near them in which robbers and enemies can conveniently hide themselves; that so the travellers and the armies may be able to look about them, and easily discover if there should be any ambuscade laid for them. Those roads that have the three abovesaid qualities, are also necessarily beautiful and delightful to travellers, because of their strait direction from the city. The conveniency they afford, and besides being in them able to see at a great distance, and besides to discover a good deal of the country, whereby great part of the fatigue is alleviated, and our minds (having always a new prospect before our eyes) find great satisfaction and delight. A strait street in a city affords a most agreeable view, when it is ample and clean; on each side of which there are magnificent fabricks, made with those ornaments, which have been mentioned in the foregoing books.

As in cities beauty is added to the streets by fine fabricks: so without, they are adorn'd with trees; which being planted on each side of them, by their verdure enliven our minds, and by their shade afford very great conveniency. Of these kinds of roads there are many in the *Vicentine*; and among the rest, those that are at *Cigogna*, a villa belonging to the Signor Conte ODOARDO THIENI, are celebrated; and at *Quinto*, a villa belonging to the Signor Conte OTTAVIO, of the same family: which being designed by me, have been since adorned, by the diligence and industry of the said gentlemen. The roads that are thus made, afford very great conveniencies, because that by their strait direction, and by being somewhat raised above the remaining part of the fields, speaking of those which are without the city, in time of war, as I have said, the enemies may be discovered from a great distance, and so that resolution, which shall seem most convenient to the commander, may be taken; besides all which, at other times, with regard to the affairs that commonly happen among men, their brevity and conveniency will afford infinite advantages.

BUT because the streets are either within or without a city, I shall, in the first place, make particular mention of the qualities which those of a city ought to have; and then how those without are to be made. And since there are some that are called military, which pass through the middle of the city, and lead from one city to another, and serve for the universal conveniency of travellers, and are those through which armies march, and carriages are conveyed; and others not military, which departing from the military, either lead to another military way, or are made for the use and particular conveniency of some villa: I shall, in the following chapters, only treat of the military ones, omitting the non-military, because these ought to be regulated by them; and the more they shall be like them, the more they'll be commended.

CH A P. II.

Of the COMPARTMENT of ways within the cities.

IN the compartment or disposition of the ways within a city, regard ought to be had to the temperature of the air, and to the region of the heaven, under which the city is situated. For in those of a temperate and cool air, the streets ought to be made ample and broad; considering, that by their breadth the city will be much wholesomer, more commodious, and more beautiful; seeing that the less subtile, and the more freely the air comes, so much the less it will offend the head. The more the city, therefore, is in a cold place, and hath a subtile air, and where the edifices are made very high, so much the wider the streets ought to be made, that they may, in each of their parts, be visited by the sun. And as to conveniency, there is no doubt, that, as much better room may be allowed to men, to cattle, and to carriages in broad than in the narrow streets, broad ones are much more convenient than the narrow; it being manifest, that as there is much more light in the broad ones, and also that as one side is not so much obstructed by the other, its opposite, one is able, in the large ones, much better to consider the beauty of the temples, and of the palaces, whereby the eye receives greater contentment; it adds besides a greater ornament to the city.

BUT the city being in a hot country, its streets ought to be made narrow, and the houses high, that by their shade, and by the narrowness of the streets, the heat of the site may be tempered; by which means it will be more healthy. This is known by the example of *Rome*, which, according to CORNELIUS TACITUS, grew hotter, and less healthy, after NERO, to make it beautiful, had widened its streets. In such case, however, for the greater ornament and conveniency of the city, the streets most frequented by the principal arts, and by passengers, ought to be made spacious, and adorned with magnificent and sumptuous fabricks, that foreigners who pass through it, may easily incline to believe, that to the beauty and largeness of this, the other streets of the city may also correspond.

THE principal streets, which we have called military, in the cities ought to be so comparted, that they may be straight, and lead from the gates of the city in a direct line to the greatest and principal piazza; and sometimes also, the site permitting it, lead in the same manner directly to the opposite gate; and according to the greatness of the city, by the same line. Of such streets, between the said principal piazza, and any of the gates you please, there ought to be one or more piazza's, made somewhat less than the before-said principal piazza.

THE other streets, especially the more noble of them, ought also to be made, not only to lead to the principal piazza, but also to the most remarkable temples, palaces, portico's, and other publick fabricks.

BUT in this compartment of the streets, it ought to be observed, with the utmost diligence (as VITRUVIUS teaches us in the sixth chapter of his first book) that they should not in a direct line face some winds; that through them furious and violent winds may not be felt; but that they may, with more salubrity to the inhabitants, come broken, gentle, purified and spent, left the same inconveniency should be incurred which happened to those who in the island of *Lesbos* laid out the streets of *Mitylene*, from which city the whole island has now taken the name.

THE streets in a city ought to be paved; and we read, that under the consulship of M. ÆMILIUS, the censors began to pave in *Rome*, where some are still to be seen, which are all even, and are paved with irregular stones; which manner of paving, how it was done, shall be mentioned hereafter. But if one is willing to divide the place where men are to walk, from that which serves for the use of carts and of cattle, I should like that the streets were divided, that on the one and on the other part there were portico's made, through which the citizens might, under cover, go and do their business, without being molested by the sun, by the rains and snow: in which manner are almost all the streets of *Padua* disposed, a very antient city, and celebrated for learning. Or if no portico's be made, (in which case the streets will be more ample and pleasant) some margins are to be made on each side, paved with mattoni, which are baked stones, thicker and narrower than bricks, because they do not at all offend the feet in walking; and the middle part is to be left for the carts and cattle, and to be paved with flints, or any other hard stones.

THE streets ought to be somewhat concave in the middle, and slanting, that the water which falls from the houses may all run to one place, and have a freer course, whereby the streets are left clean, and are not the cause of bad air; as is the case when it stops in any place, and there putrifies.

CHAP. III.

Of the Ways without the city.

THE ways without the city ought to be made ample, commodious, having trees on either side, by which travellers may be defended from the scorching heats of the sun, and their eyes receive some recreation from the verdure. The antients took great care of these ways: that they might therefore always be in good repair, they established proveditors and curators of them; by whom many of them were made, of which there still remains some memory of their beauty and conveniency, although they have been impaired by time. But the *Flaminian* and the *Appian* are the most famous of them all; the first was made by FLAMINIUS, while he was consul, after the victory he had over the *Genoesi*. This way began from the gate *Flumentana*, now called *del Popolo*, and passing through *Tuscany*, and through *Umbria*, led to *Rimini*; from which city it was afterwards continued to *Bologna* by M. LEPIDUS, his colleague; and near the foot of the *Alps*, by windings, to avoid the fens, he carried it to *Aquileia*. The *Appian* took its name from APPIUS CLAUDIUS, by whom it was made with much skill and at great expence: thence, for its magnificence and wonderful artifice, it was by the poets called the *Queen of ways*. This street began from the *Coliseo*, and through the gate *Capena* reached to *Brindisi*. It was continued only to *Capua* by APPIUS; from thence forwards, there is no certainty who made it; and it is the opinion of some, that it was CÆSAR: because we read in PLUTARCH, that the care of this way being given to CÆSAR, he spent thereon a great deal of money. It was lastly repaired by the Emperor TRAJAN, who (as I have said before) by drying up fenny places, levelling mountains, filling up valleys, and by making bridges where it was necessary, made the travelling thereon both expeditious and agreeable. The *Via Aurelia* is also very much celebrated. It was so called from AURELIUS, a Roman citizen, who made it. It began from the gate *Aurelia*, now called *San. Pancratio*, and extending itself through all the maritime places of *Tuscany*, led to *Pisa*.

THE *Via Numentana*, the *Praenestina*, and the *Libicana*, were of no less renown. The first began from the gate *Viminalis*, now called *S. Agnesa*, and reached to the city of *Nomentum*;

mentum ; the second began from the gate *Esquilina*, which is now called *S. Lorenzo* ; and the third from the gate *Nevia*, that is, from the *Porta Maggiore* ; and these ways led to the city of *Præneste*, now called *Pelegrino*, and to the famous city of *Labicana*.

THERE were also many other ways mentioned and celebrated by writers, that is, the *Salara*, the *Collatina*, the *Latina*, and others ; all which took their names either from those who ordered them, or from the gates where they began, or from the places whither they led. But among them all, the *Via Portuense* must have been of the utmost beauty and convenience, which led from *Rome* to *Osilia* ; because (as ALBERTI saith he has observed) it was divided into two streets ; between the one and the other of which there was a course of stones a foot higher than the remaining part of the way, and which served for a division : by one of these ways people went, and by the other they returned, avoiding thereby the inconvenience of meeting ; an invention very commodious for the very great concourse of people that, from all parts of the world, was at *Rome* in those times.

THE antients made these their military ways in two manners ; that is, either paving them with stones, or by covering them all over with sand and gravel. The ways after the first manner, (from what one has been able to conjecture by some vestigia) were divided into three spaces. Upon that in the middle, which was higher than the other two, and which was somewhat raised toward the middle, that the water might run off and not settle there, those who were on foot travelled. This was paved with irregular stones, that is, of unequal sides and angles ; in which manner of paving (as it has been elsewhere said) they made use of a leaden rule, which they opened and shut according to the sides and angles of the stones : they therefore joined them exceeding well together, and that with great expedition. The other two spaces that were on each side, were made somewhat lower, and were covered with sand and small gravel, and on these went the horses.

EACH of these margins were as wide as half the breadth of the space in the middle, from which they were divided by rows of stones placed edge-ways, and there was at every such distance some stones placed end-ways, a foot higher than the remaining part of the street. Upon these the antients stepped when they were willing to mount on horse-back, as they did not make use of stirrups.

BESIDES these stones placed for the said use, there were other stones much higher, upon which, from place to place, were marked the miles of the whole journey ; and these ways were measured, and the said stones fixed by CNEUS GRACCHUS.

THE military ways after the second manner, that is, made of sand and gravel, were made by the antients somewhat raised in the middle, by means of which the water could not lodge there ; and being of a substance apt to dry quickly, and of itself, they were always clean, that is, without dirt or dust. Of this sort there is one to be seen in *Friuli*, which is called by the inhabitants of those places *la Postuma*, and leads into *Hungary*. There is another also in the *Paduan*, which beginning from the said city, in the place named *L'Argere*, passes through the middle of *Gigogna*, a villa belonging to Count ODOARDO, and to Count THEODORE DE THIENI, brothers, and leads to the *Alps*, which divide *Italy* from *Germany*.

THE following design is of the ways according to the first manner, from which one may know how the *Via Hostiensis* must have been made. It did not appear to me necessary to give a design of the second manner, because it is a very easy thing, as there is no need of any industry, provided they are but made rising in the middle, that the water may possibly not stand there.

Plate I.

A, is the space in the middle, on which the people on foot travelled.

B, are the stones that served to mount on horse-back.

C, are the margins covered with sand and gravel, on which the horses went.

C H A P . I V .

Of what ought to be observed in the building of BRIDGES, and of the site that ought to be chosen.

FORASMUCH as many rivers, by reason of their breadth, height, and rapidity, cannot be forded, the conveniency of bridges was first thought on. It may therefore be said, that they are a principal part of the way, and that they are but a street above water. They ought to have the same qualities that we have said were required in all other fabricks, that is, to be commodious, beautiful, and for a long time durable. They will be commodious when they are not raised above the rest of the way, and if they be raised, to have their ascent easy; and such place is to be chosen to build them in, as ought to be most convenient to the whole province, or to the whole city, according as they are to be built, either within or without the walls.

CHOICE ought therefore to be made of that place to which one may go from all parts easily, that is, in the middle of the province, or in the middle of the city, as NITOCRE Queen of *Babylon* did in the bridge she built over the *Euphrates*; and not in an angle, where it can be of use only to a few. They'll be beautiful and durable for a long time, if they are made after the manner, and with those measures that shall particularly be mentioned hereafter.

BUT in pitching on the site for building them, one ought to observe to chuse it so as may give hopes that the bridge there built will be perpetual, and where it may be made with as little expence as possible. That place therefore is to be chosen, in which the river shall be less deep, and shall have its bed or bottom even and durable, that is, of rock or stone, because (as has been said in the first book, when I spoke of the places to lay foundations on) stone and rock make very good foundations in waters: besides which, gulphs and whirlpools ought to be avoided, as also that part of the bottom, or bed of the river, which shall be gravelly or sandy; for sand and gravel being continually moved by the floods, this changes the bed of the river, and the foundations being thereby undermined, would of necessity occasion the ruin of the work. But when the whole bed of the river is gravel and sand, the foundations ought to be made as shall be directed hereafter, when I come to treat of stone bridges.

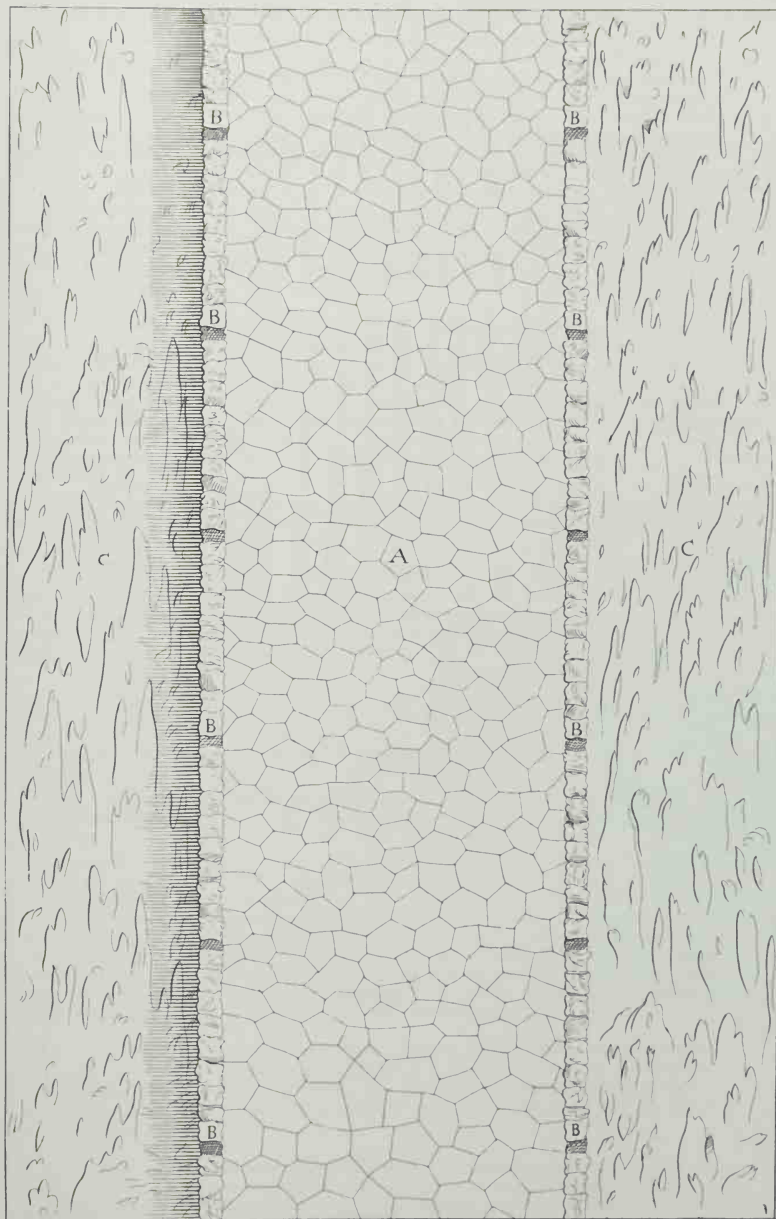
REGARD also is to be had, to chuse that site in which the river's course is direct; since the windings and crooked parts of the banks are subject to be carried away by the water; in such a case therefore the bridge would remain like an island, disunited from the banks: and also, because during the floods, the waters carry into the said windings, all the matter they wash from the banks and fields, which not being able to go directly down, stops other things, and clogging the pilasters, fills up the opening of the arches; whereby the work suffers in such a manner, that by the weight of the water only, it falls in time to ruin.

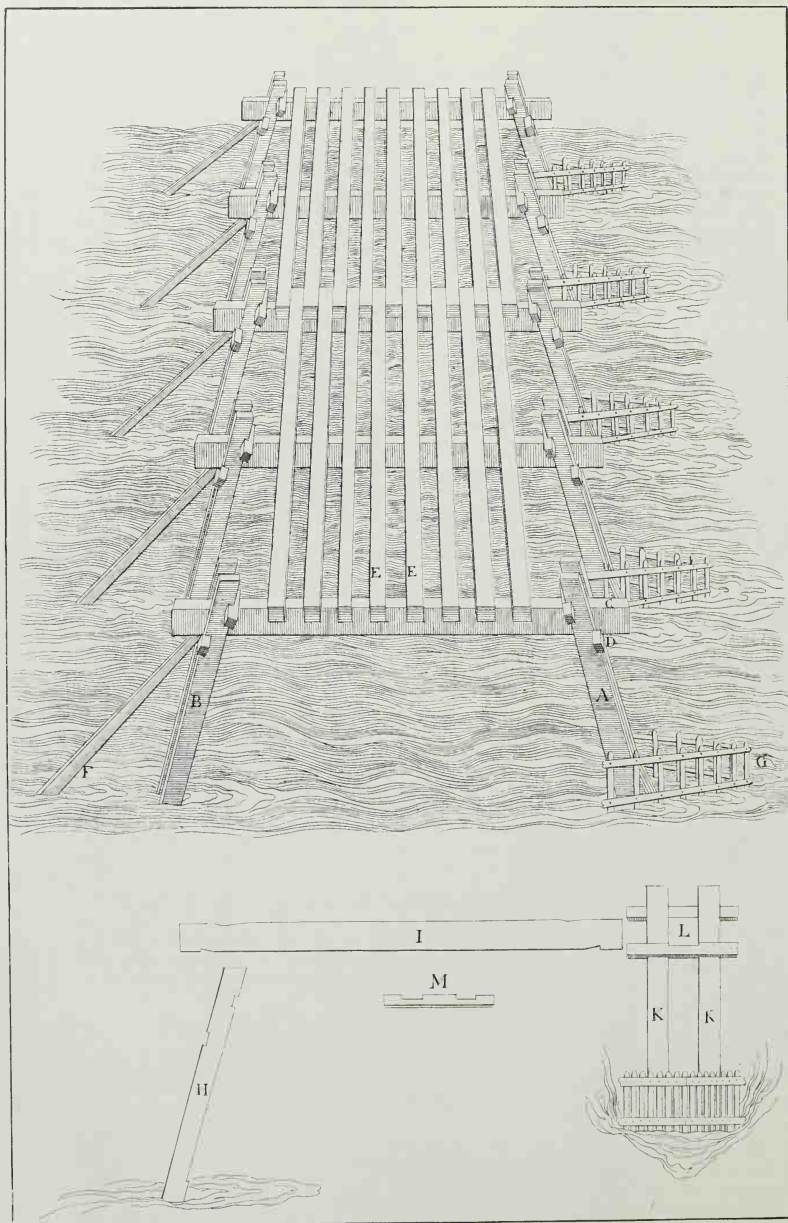
THE place therefore to be chosen for building bridges, ought to be in the middle of the country or of the city, and as convenient to all the inhabitants as possible, and where the river has a direct course, and its bed equal, perpetual, and shallow. But as bridges are either made of wood or of stone, I shall particularly mention the manner of both the one and the other, and shall give some designs of them, both antient and modern.

C H A P . V .

Of WOODEN BRIDGES, and of the advertencies which ought to be had in the building of them.

BRIDGES are made of wood, either upon one occasion only, like those which are made for all those accidents that usually happen in war; of which sort that is the most celebrated which JULIUS CÆSAR directed over the *Rhine*; or secondly, that they may perpetually serve for the conveniency of every body. After this manner we read that HERCULES built the first bridge that ever was made, over the *Tiber*, in the place where *Rome* was afterwards





afterwards built; when, after having killed GERVON, he victoriously led his herd through *Italy*. It was called the holy bridge, and was situated in that part of the *Tiber*, where afterwards the *Pons Sublicius* was built by ANCUS MARTIUS the King, which was likewise all of timber, and its beams were joined together with so much art, that one could take them away, and replace them according as necessity should require, there being neither nails nor any iron whatsoever in it. How it was constructed is not known; but by what writers say of it, that it was made upon great pieces of timber, which supported others, from which it took the name of *Sublicius*; because such timbers in the *Volsian* tongue were called *Sublices*.

THIS was the bridge that was defended by HORATIUS COCLES, with so much advantage to his native country, and glory to himself. This bridge was near *Ripa*, where there are still *vestigia* to be seen in the middle of the river, because it was afterwards made of stone by ÆMILIUS LEPIDUS the prætor, and restored by the Emperor TIBERIUS, and by ANTONINUS PIUS.

WOODEN bridges of this kind ought to be made in such a manner, that they may be very strong, and so tied together by large strong timbers, that there may not be any danger of their breaking, either thro' the great multitude of people, and of animals, or by the weight of the carriages and of the artillery that shall pass over them, nor liable to be ruined by the inundations and the floods in rivers. Those that are made at the gates of the cities, however, which we call draw-bridges, because they may be raised and let fall according to the will of those within, are usually paved, or covered with bars or plates of iron, that they may not be spoiled or broken by the wheels of carriages, and by the feet of cattle.

THE timbers, as well those which are fixed in the water, as those that form the length and breadth of the bridge, ought to be long and thick, according as the depth, the breadth, and the velocity of the river shall require.

BUT because the particulars are infinite, one cannot give a certain and determinate rule for them. Wherefore I shall give some designs, and shall mention their measures, from which every one may easily be able, according as occasion shall offer, of exercising the acuteness of his understanding, to take his measures and form a work that is worthy of praise.

CHAP. VI.

Of the BRIDGE directed by JULIUS CÆSAR over the Rhine.

JULIUS CÆSAR having (as he says in the fourth book of his Commentaries) resolved to pass the *Rhine*, that the Roman power might also be felt in *Germany*, and judging that it was not a very safe thing, nor worthy either of him, or of the Romans, to pass it in barks, ordered a bridge, an admirable work, and most difficult by reason of the breadth, height, and rapidity of the river. But how this bridge was built, (although he describes it) is, nevertheless, not known, as the force of some of the words by him used in the description of it, is not understood; so has it been variously set down in designs, according to diverse inventions. As I have also thought a little upon it, I would therefore not omit this opportunity of setting down the manner of it, which I imagined in my youth, when first I read the said Commentaries, because it agrees pretty much (in my opinion) with CÆSAR's words, and because it succeeds admirably well, as the effect has been seen in a bridge I have directed just without *Vicenza*, over the *Baciglione*.

IT is not my intention to confute the opinions of others, as they are all very learned men, and worthy of the utmost praise. For having left it in their writings as they understood it, and by means of their industry and fatigue, they have greatly facilitated the understanding of it to us. But before we come to the designs, I shall give the words of CÆSAR, which are these:

RATIONEM igitur pontis hanc instituit. Tigna bina sesquipedalia, paululum ab imo præcuta, dimensa ad altitudinem fluminis, intervallo pedum duorum inter se jungebat. Hæc cum machinationibus demissa in flumen defixerat, sistitque adegerat, non sublice modo directa ad perpendiculariculum, sed prona, ac fastigiata, ut secundum naturam fluminis procumberent: his item contraria duo ad eundem modum juncta intervallo pedum quadragenum ab inferiore parte contra
vin

vim atque impetum fluminis conversa statuebat. Hæc utraque insuper bipedalibus trabibus immixtis, quantum eorum tignorum junctura distabat, binis utrinque fibulis ab extrema parte distinebantur. Quibus disclusis, atque in contrariam partem revinctis, tanta erat operis firmitudo, atque ea rerum natura, ut quo major vis aquæ se incitavisset, hac arctius illigata tenerentur. Hæc directæ injecta materia contexebantur, ac longuriis, oratibusque consternebantur. Ac nibilo secius publicæ ad inferiorem partem fluminis oblique adigebantur, quæ pro pariete subiectæ, & cum omni opere conjunctæ, vim fluminis exciperent. Et aliæ, item supra pontem mediocri spatio, ut si arborum trunci, sive naves dejiciendi operis causa essent à Barbaris missæ, his defensoribus, earum rerum vis minuerentur, neu ponti nocerent.

THE sense of which words is, that he ordered a bridge in this manner. He joined two beams, each a foot and an half thick, two foot distant from each other, something sharp in the part below, and as long as the height of the river required; and having with machines fixed these beams in the bottom of the river, he drove them into it with a rammer, not directly plumb, but leaning in such a manner, as to be slanting according to the current of the water. Opposite to these, in the inferior part of the river, and at the distance of forty foot, he fixed two others, joined together in the same manner, slanting these against the strength and impetuosity of the river. Between these two beams he fastened other beams two foot thick, that is, equal to their distance from each other. They were held at each end by two braces, which being open, and bound contrary to each other, so great was the strength of the work, and such was the nature of the things, that by how much greater the strength of the water was, so much the firmer the whole kept braced together. These timbers were intermixed with other timbers, and covered with poles and hurdles. Besides which, in the lower part of the river, there were posts joined slanting, which were placed underneath instead of buttresses, and being united to the whole work, served to resist the strength of the river. There were others also joined in the part above the bridge, at a moderate space, that in case trunks of trees, or ships, should be sent down the river by the Barbarians to ruin the work, it might by these ramparts avoid their violence, and prevent them from hurting the bridge.

Plate 2. THUS CÆSAR describes the bridge by him ordered over the *Rhine*; to which description the following invention seems to me very conformable, all the parts of which are marked with letters.

- A, Are the two beams joined together one foot and an half thick, something sharp in the lower part, fixed in the bottom of the river, not upright, but leaning with the current, and two foot distant from each other.
- B, Are two other beams placed in the lower part of the river opposite to the above-mentioned, and distant from them the space of forty foot, and slanting against the current of the river.
- H, Is the form of one of the beams by itself.
- C, Are the beams two foot thick every way, that formed the breadth of the bridge, which was forty foot.
- I, Is one of the said beams.
- D, Are the beams, which being open, that is, divided one from the other, and bound contrary to each other, that is, one in the part within, and the other in the part without; the one above, and the other below the beams, two foot thick, that formed the breadth of the bridge, and give so great a firmness to the work, that the greater the violence of the water, and the more the bridge was laden, so much the more it united, and the firmer it was.
- M, Is one of the beams.
- E, Are the beams that were put length-ways on the bridge, and were covered with plates and hurdles.
- F, Are the posts placed in the lower part of the river, which being slanting, and joined with the whole work, resisted the violence of the stream.
- G, Are the posts placed in the part above the bridge to defend it in case the enemy should send trees or ships down the river to ruin it.
- K, Are two of those beams that were joined together, and not driven in the river directly plumb, but slanting.
- L, Is the head of the beams that formed the breadth of the bridge.

C H A P. VII.

Of the BRIDGE of CISMONE.

THE *Cismone* is a river, which falling from the mountains that divide *Italy* from *Germany*, runs into the *Brenta*, a little above *Bassano*. And because it is very rapid, and that by it the mountaineers send great quantities of timber down, a resolution was taken to make a bridge there, without fixing any posts in the water, as the beams that were fixed there were shaken and carried away by the violence of the current, and by the shock of the stones and trees that by it are continually carried down: wherefore Count GIACOMO ANGARANO, who owns the bridge, was under the necessity of renewing it every year.

THE invention of this bridge is, in my opinion, very worthy of attention, as it may Plate 3. serve upon all occasions, in which the said difficulties shall occur; and because that bridges thus made, are strong, beautiful, and commodious: strong, because all their parts mutually support each other; beautiful, because the texture of the timbers is very agreeable and commodious, being even and in the same line with the remaining part of the street. The river where this bridge was ordered, is one hundred foot wide; the breadth is divided into six equal parts; and at the end of each part (excepting at the banks, which are strengthened with pilasters of stone) the beams are placed, that form the bed, and breadth of the bridge; upon which, a little space being left at their ends, were placed other beams lengthways, which form the sides. Over these, directly upon the first, the *colonelli* on each side were disposed (so we call those beams vulgarly, that in such works are placed directly upright.) These *colonelli* are bound with the beams (which, as was said, formed the breadth of the bridge) with irons which we call cramps, passing through a hole, made for that purpose in the heads of the said beams, in that part which advances beyond the beams that form the sides.

THESE cramps, because they are in the upper part along the said upright and plain *colonelli*, are perforated in several places. And in the under part, near the said thick beams, by one hole only, sufficiently large, they were driven into the *colonello*, and fastened afterwards underneath with iron bolts, made for that purpose; they therefore made the whole work to be in a manner united. The beams that form the breadth, and those of the sides being as it were, of one piece with the *colonelli*, support the beams that form the breadth of the bridge; and those are also supported by the arms that go from one *colonello* to the others, whereby all the parts are supported the one by the other; and their nature is such, that the greater the weight upon the bridge, so much the more they bind together, and increase the strength of the work. All the said arms, and the other beams that form the texture of the bridge, are but one foot broad, and but three quarters thick. But those beams that form the bed of the bridge, that is, those that are laid long ways, are a great deal smaller.

- A, *The flank of the bridge.*
- B, *The pilasters that are on the banks.*
- C, *The heads of the beams that form the breadth.*
- D, *The beams that form the sides.*
- E, *The colonelli.*
- F, *The heads of the cramps, with the iron bolts.*
- G, *Are the arms, which bearing contrary to each other, support the whole work.*
- H, *Is the plan of the bridge.*
- I, *Are the beams that form the breadth, and advance beyond the sides, near which the holes are made for the cramps.*
- K, *Are small beams that form the bed of the bridge.*

CHAP. VIII.

Of three other INVENTIONS, according to which wooden bridges may be made, without fixing any posts in the water.

WOODEN bridges may be made, without posts in the water, like the bridge on the *Cismona*, after three other manners; of which I would not omit giving the designs, because they are of a most beautiful contrivance, and may be more easily understood by every one who shall have made himself master of the terms made use of in the said bridge on the *Cismona*; because these also consist of beams placed cross ways, of colonelli, of cramps, and of beams placed long ways, that form the sides.

THE bridges, therefore, after the first invention, are to be made after this manner: the banks being first fortified with pilasters, as necessity shall require, one of the beams that forms the breadth of the bridge is to be placed at some distance from them, and then the beams that form the sides, are to be disposed upon it, which with one of their heads are to lie upon the bank, and be fastened to it; after which, upon these, directly plumb with the beams placed for the breadth, the colonelli are to be fixed, which are to be fastened to the said beams with cramps of iron, and supported by the braces well fastened to the heads of the bridge; that is, in the beams that form the sides upon the bank: then leaving as much space as has been left from the said beam for the breadth to the bank, the other beam for the breadth is to be placed, and fastened in the same manner with the beams that shall be placed upon them lengthways of the bridge, and with the colonelli, and the colonelli to be supported by their braces, and thus continue from one order to another, as far as shall be requisite. Observing always in such bridges as these, that in the middle of the breadth of the river, there may be a colonello, in which the braces in the middle meet, and that other beams be fixed in the upper part of the colonelli, which joining from one colonello to the other will keep them united, and will form, with the braces in the head of the bridge, the portion of a circle, less than a semicircle. And in this manner, making every brace support its colonello, and every colonello support the beam for the breadth, and those that make the sides, whereby every part bears its own weight.

BRIDGES made after this manner, are wide at the heads, and grow narrow towards the middle of their length. There are none in *Italy* made after this manner; but conversing with Messer ALESSANDRO PICHERONI, a *Mirandolese*, he told me he had seen one in *Germany*.

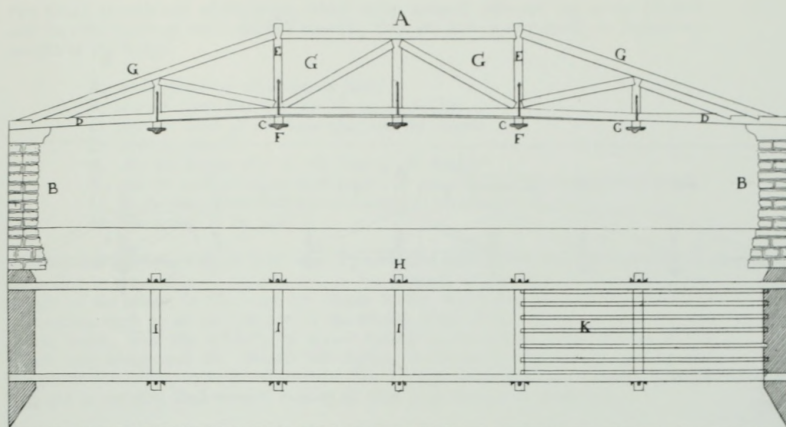
Plate 4.

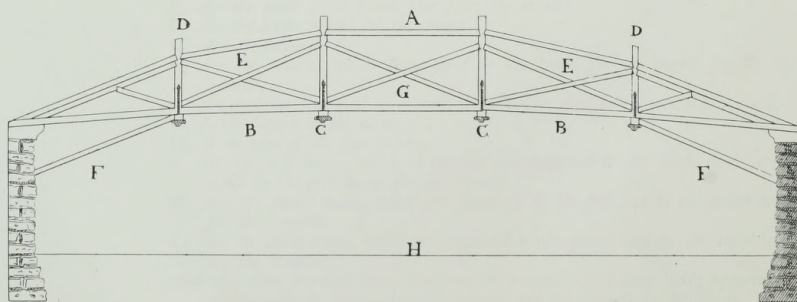
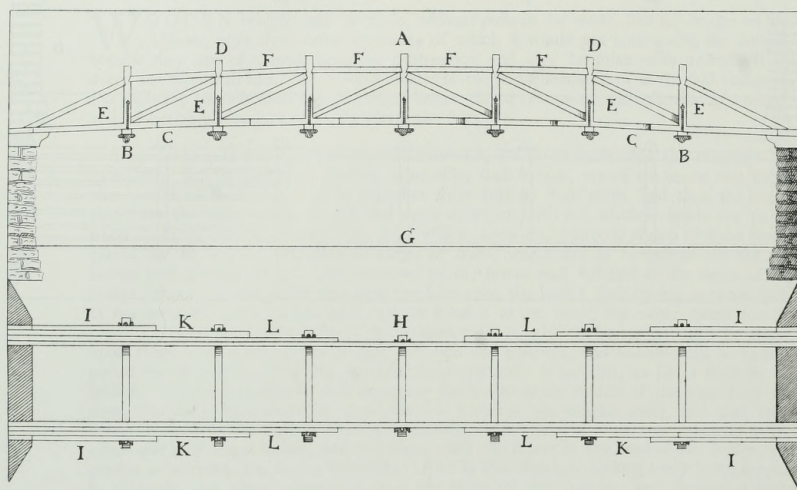
- A, Is the elevation of the flank of the bridge.
 - B, Are the heads of the beams that form the breadth.
 - C, Are the beams placed for the length.
 - D, Are the colonelli.
 - E, Are the braces, which being fixed in the beams for the length, support the colonelli.
 - F, Are the beams that bind one colonello with the other, and form a portion of a circle.
 - G, Is the bottom of the river.
 - H, Is the plan of the said bridge.
 - I, Are the first beams, which at one end are supported by the bank, and at the other by the first beams for the breadth.
 - K, Are the second beams, which are supported by the first and by the second beam for the breadth.
 - L, Are the third beams, which are supported by the second and by the third beam for the breadth.
- And then there are those beams that form the breadth (as I have said) supported by the colonelli, to which they are fastened, and the colonelli by the braces.

Plate 4.

THE invention of the following bridge has the upper part, which is what supports all the weight, made of a portion of a circle less than a semicircle, and has the braces, that go from one colonello to another, so disposed, that in the middle of the spaces which are between the colonelli, they cross each other.

THE beams that form the floor of the bridge, are bound to the colonelli with cramps, as they are in the above mentioned invention. And for a greater strength, one might add two





two beams at each end of the bridge, which being fastened with one end in the pilasters, and the other reaching under the first colonelli, they would help very much to support the weight of the bridge.

- A, *Is the upright of the bridge in flank.*
- B, *Are the beams that form the sides of the bridge.*
- C, *Are the heads of the beams that form the breadth.*
- D, *Are the colonelli.*
- E, *Are the braces, that is, the fence of the bridge.*
- F, *Are the beams placed under the bridge, at each end, that help to support the weight.*
- G, *Is the floor of the bridge.*
- H, *The bottom of the river.*

THIS last invention may be made with a greater or a smaller arch than it is here designed, Plate 5. according to the quality of the site, and as the greatness of the river shall require. The height of the bridge, in which are the fences, or the braces that go from one colonello to another, must be an eleventh part of the breadth of the river. All the mortices that are made, ought, from the colonelli, to answer exactly to the centre, which will make the work very strong; and the colonelli will support the beams for the breadth, and for the length of the bridge, as in the above said. The bridges, after these four manners, may be enlarged as necessity shall require, making all their parts stronger in proportion.

- A, *Is the upright of the bridge in flank.*
- B, *Is the floor of the bridge.*
- C, *Are the colonelli.*
- D, *Are the braces that fence and support the colonelli.*
- E, *Are the heads of the beams that form the breadth of the bridge.*
- F, *Is the bottom of the river.*

CHAP. IX.

Of the bridge of BASSANO.

NEAR *Bassano*, a country situated at the foot of the *Alps* which separates *Italy* from Plate 6. *Germany*, I have directed the following wooden bridge over the *Brenta*, a most rapid river, that discharges itself into the sea near *Venice*, and was by the antients called *Medacus*, to which, (as *Livy* relates in his first Decad) *CLEONIMUS* the *Spartan* came with a naval army before the Trojan war. The river, in the place where the bridge was made, is one hundred and eighty foot wide. This breadth is divided into five equal parts, because the two banks being very well fortified, that is, the heads of the bridge, with beams of oak and of *larix*, four orders of piles were made in the river, thirty four foot and an half distant the one from the other. Each of these orders consists of eight beams thirty foot long, and a foot and an half thick every way, and distant two foot one from the other: hence the whole length of the bridge comes to be divided into five spaces, and its breadth is twenty six foot. Upon the said orders were placed some cross beams, according to the said breadth (this sort of beams so placed, are vulgarly called *correnti*) which being nailed to the beams driven in the river, hold them all together, joined and united. Upon these *correnti*, plumb on the said beams, were placed eight other beams, which make the length of the bridge, and reach from one order to the other. And because the distance between the said orders is very great, hence with difficulty the beams placed length ways, could have been able to support the weight that might have been put upon them, when it should have been great, some beams were placed between these and the *correnti*, that serve for *modiglions*, and support part of the weight: besides which, other beams were placed, which being fastened in those that were driven into the river, and leaning the one towards the other, were united with another beam placed in the middle of the said distance under each beam for the length. These beams so placed, represent an arch, having the fourth part of its diameter in height; and so the work becomes beautiful in its form; and strong, because the beams that form the length of the bridge, are thereby doubled in the middle.

UPON these are put other beams cross ways, which make the plan or floor of the bridge, and project something more than the remaining part of the work, and appear like the *modiglions*

modiglions of a cornice. On each side of the bridge are placed the columns that support the roof, and serve as a loggia, and make the whole work very commodious and beautiful.

- + *Is the line of the surface of the water.*
- A, *Is the upright of the flank of the bridge.*
- B, *Are the orders of piles driven into the river.*
- C, *Are the heads of the corrente.*
- D, *Are the beams that make the length of the bridge, upon which are seen the heads of those that form the floor.*
- E, *Are the beams, which leaning one towards the other, are united with other beams placed in the middle of the distance, that is, between the orders of piles; hence in the said place the beams come to be double.*
- F, *Are the columns that support the roof.*
- G, *Is the upright of one of the heads of the bridge.*
- H, *Is the plan of the orders of piles with the buttresses which binder the said piles being shaken by the timber that comes down the river.*
- I, *Is the scale of ten feet, with which the whole work is measured.*

C H A P. X.

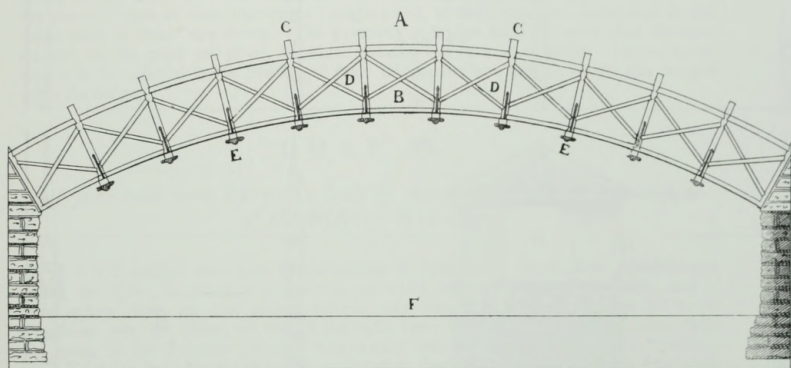
Of STONE BRIDGES, and what ought to be observed in the building of them.

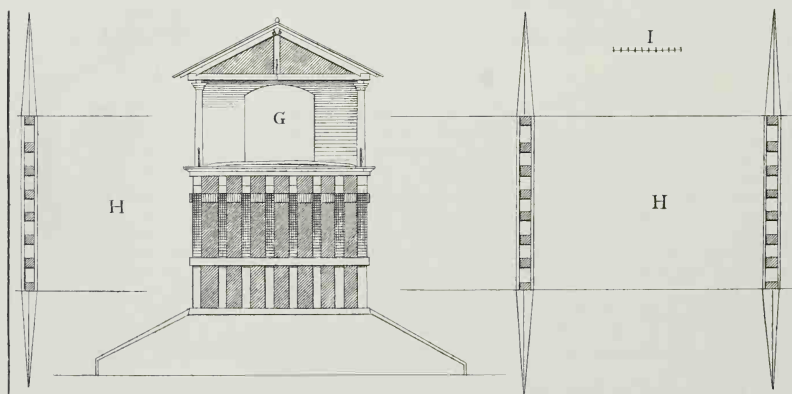
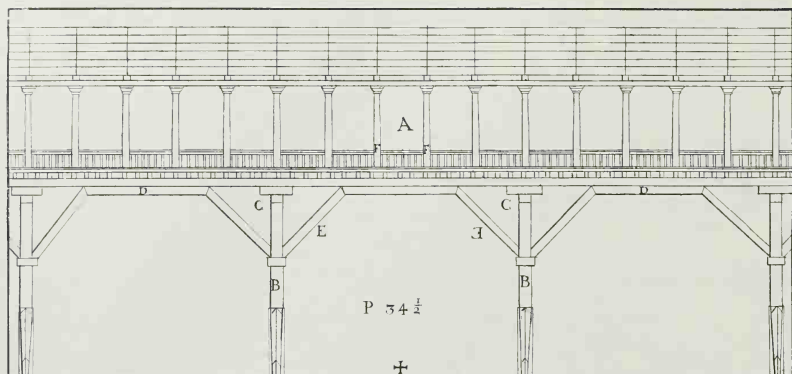
MEN at first made bridges of wood, as being attentive to their present necessity only; but since they have begun to have a regard for the immortality of their name, and when riches gave them spirit, and conveniency to do greater things, they began to build with stone, which is more durable, of greater expence, and of more glory to the builders. In these, four things ought to be considered; that is, the heads, made in the banks; the pilasters, that are sunk into the rivers; the arches, that are supported by the pilasters; and the pavement, which is made upon the arches. The heads of bridges ought to be made very firm and solid, since they not only serve to support the weight of the arches as the other pilasters do, but they keep the whole bridge united besides, and prevent the arches from opening; and therefore they must be made where the banks are of stone, or at least of a solid soil. And if banks thus made very firm by nature cannot be had, they must be made firm and strong by art; making there other pilasters and other arches, so that if the banks should be ruined by the water, the way to the bridge may not be interrupted.

THE pilasters that are made for the breadth of the river, ought to be in number even; as well because we see that nature has produced all those things of this number, which being more than one, are to support any weight, as the legs of men, and all the other animals can justify: as also because this same compartment is more agreeable to be looked at, and renders the work more firm; because the course of the river in the middle, (in which place it is naturally more rapid, as being farther from the banks) is free, and doth not damage the pilasters by continually shaking them. The pilasters ought to be so comparted, as to fall in that part of the river where the stream is less rapid.

THE greatest current of the waters, is where those things gather together that swim upon it, which may easily be known at the increase of the river. Their foundations must be made in that time of the year when the waters are lowest, that is, in autumn: and if the bottom of the river be of stone, or of tofo, or of scaranto, which as I have said (in the first book) is a sort of earth, that is partly stone, the foundations will be had without the fatigue of digging; because these sorts of bottoms are an excellent foundation of themselves. But if the bottom of the river be of gravel or sand, one must dig until the solid ground is found; and if that be difficult, some of the gravel or sand must be dug out, and then piles, made of oak, must be driven there, which, with the iron points that are made to them, must reach the solid and firm bottom.

To lay the foundations of the pilasters, one ought to inclose but one part of the river only, and build in that, that the water may have its course by the other part left open; and thus proceed from one part to another. The pilasters ought not to be thinner than the sixth part of the breadth of the arch; nor ordinarily thicker than the fourth. They must be made with large stones, which are to be joined together with cramps, and with iron or metal





metal nails, that by such concatenations they may come to be all as of one piece. The fronts of the pilasters are commonly made angular, that is, that they have in their extremity a rectangle; and some are also made sometimes semicircular, that they may cut the water, and that those things which are carried down by the impetuosity of the river, may, by striking against them, be thrown off from the pilasters, and pass through the middle of the arch.

THE arches ought to be made firm and strong, and with large stones, which must be well joined together, that they may be able to resist the continual passing of carts, and support the weight, that occasionally may be conveyed over them. Those arches are very firm that are made semi-circular, because they bear upon the pilasters, and do not shock one another. But if by reason of the quality of the site, and the disposition of the pilasters, the semicircle should offend by reason of the too great height, making the ascent of the bridge difficult, the diminished must be made use of, by making arches, that have but the third part of their diameter in height; and, in such case, the foundations in the banks must be made very strong. The pavement of bridges must be made after the same manner, as the ways are paved, of which mention has been made before. Hence, as all that is to be observed in the building of stone bridges has been seen, it is time that we pass on to the designs.

CHAP. XI.

Of some celebrated BRIDGES built by the antients, and of the designs of the bridge of RIMINO.

MANY bridges were built by the antients in divers places. But in *Italy*, especially over the *Tyber*, they built a great many, of which some are still to be seen intire; and of some others there are the antient vestigia only remaining. Those that are still to be seen intire, over the *Tyber*, are that of the castle *Santo Angelo*, formerly called *Ælius*, from the name of the Emperor *ÆLIUS ADRIANUS*, who built thereon his own sepulchre. The *Fabricius*, built by *FABRICIUS*, now called *Ponte Quattro Capi*, from the four heads of *JANUS*, or of *TERMINUS*, which are placed on the left hand going upon this bridge. By means of this bridge, the island of the *Tyber* is joined to the city. The *Cestius*, now called of *San. Bartolomeo*, which from the other side of the island passes to *Transstevere*. The bridge called *Senatoriarius* from the senators, and *Palatinus* from the mountain that is near it, made of rustick work, which at present is called of *Santa Maria*. But those bridges of which the antient vestigia are only seen in the *Tyber*, are, the *Subicius*, called also *Lepidus*, from *ÆMELIUS LEPIDUS*, which being first of wood, he made it of stone, and it was near *Ripa*. The *Triumphal*, the pilasters of which are to be seen opposite to the church of *Santo Spirito*. The *Janiculensis*, so called for being near mount *Janiculus*, which as it was rebuilt by Pope *SIXTUS IV.* now is called *Ponte Sisto*. And the *Milvius*, now called *Ponte Molle*, placed in the *Via Flaminia*, somewhat less than two miles distant from *Rome*; which does not retain any thing antient besides the foundations; and they say, that it was built in the time of *SILLA*, by *M. SCAURUS* the censor. There are also the ruins of a bridge built by *AUGUSTUS CÆSAR*, to be seen of rustick work, over the *Nera*, a very rapid river near *Narni*. And over the *Metauro* in *Umbria* at *Galgi*, another is to be seen of rustick work likewise, with some spurs in the banks, that support the street, and make it very strong.

BUT among all the celebrated bridges, that is recorded as a marvellous thing which *CALIGULA* made from *Pozzuolo* to *Baie*, in the middle of the sea, in length somewhat less than three miles; in which, they say, that he spent all the money of the empire. Exceeding great, and worthy of admiration, was that which *TRAJAN* built, to subdue the Barbarians over the *Danube*, opposite to *Transilvania*, on which were read these words:

PROVIDENTIA AUGUSTI VERE PONTIFICIS VIRTUS ROMANA QUID NON DOMET ?

SUBJUGO ECCE RAPIDUS ET DANUBIUS.

THIS bridge was afterwards ruined by *ADRIAN*, that the Barbarians might not be able to pass it, to the damage of the Roman provinces; and its pilasters are still to be seen in the middle

middle of the river. But considering, that of all the bridges I have seen, that at *Rimino*, a city in *Flaminia*, seems to me to be the most beautiful, and the most worthy of consideration, as well for its strength, as for its compartment and disposition. It was built, I judge, by *AUGUSTUS CÆSAR*. I have given the designs of it, which are those that follow. It is divided into five arches, the three middle ones are equal, and five and twenty foot in breadth, and the two next the banks are less, that is, only twenty foot broad. All those arches are semicircular, and their *modeno* is the tenth part of the void of the greater, and the eighth part of the void of the lesser. The pilasters are in thickness, a little less than half the void of the greater arches. The angle of the spurs, that cut the water, is a right one, which I have observed that the antients made in all their bridges; because it is stronger than the acute one, and therefore less exposed to be ruined by the trees, or by other matters that should be carried down by the river. Directly over the pilasters, in the sides of the bridge, are some tabernacles, in which formerly there must have been statues. Over these tabernacles, according to the length of the bridge, there is a cornice, which although it is plain, affords a beautiful ornament to the whole work.

Plate 7.

- A, *Is the said cornice over the tabernacles of the bridge.*
 B, *Is the surface of the water.*
 C, *Is the bottom of the river.*
 D, *A scale of ten foot, with which this bridge is measured.*

C H A P. XII.

Of the BRIDGE of Vicenza, that is over the Bacchiglione.

Plate 8. THERE run through *Vicenza* two rivers, one of which is called the *Bacchiglione*, and the other the *Rerone*. The *Rerone*, as it goes out of the city, enters into the *Bacchiglione*, and immediately loses its name. Over these rivers are two ancient bridges; of that over the *Bacchiglione*, the pilasters and one arch, still intire, are to be seen near the church of *S. Maria de gli Angioli*. The remaining part is all modern work. This bridge is divided into three arches; that in the middle is thirty foot wide, the other two are but two and twenty foot and an half in breadth; which was done that the river might have in the middle a freer course. The pilasters are in thickness the fifth part of the void of the lesser arches, and the sixth of the greater. The arches have in height the third part of their diameter. Their *modeno* is in thickness the ninth part of the lesser arches, and the twelfth of that in the middle, and are wrought in the manner of an architrave. In the extrem parts of the length of the pilasters, under the imposts of the arches, some stones project forward, which in building of the bridge, served to support the beams, upon which were made the centerings of the arches. And, in this manner, the danger of the floods carrying away the beams, to the ruin of the work, was avoided; which had it been done otherwise, it would have been necessary to drive them into the river, to make the said centerings.

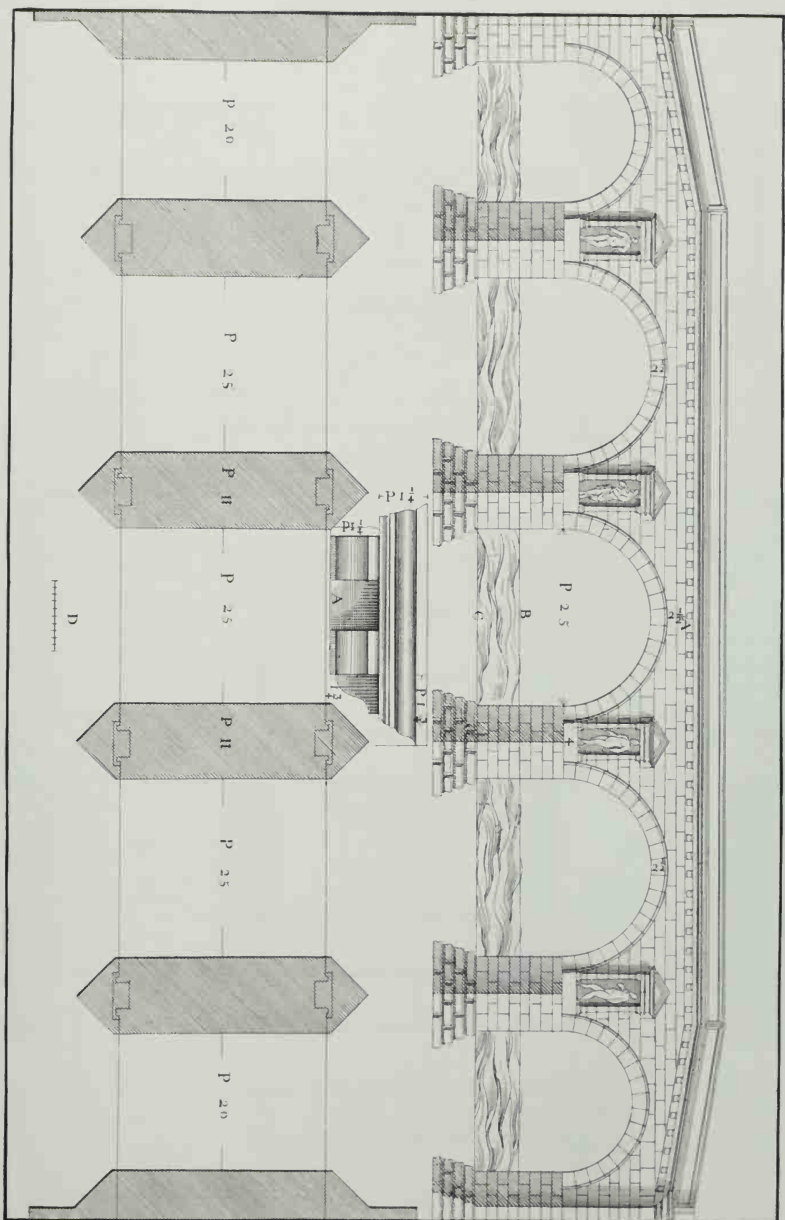
- A, *Is the breastwork of the bridge.*
 C, *Is the modeno of the arches.*
 D, *Are the stones that project from the remaining part of the pilasters, and serve for the centring of the arches.*
 E, *Are the heads of the bridge.*

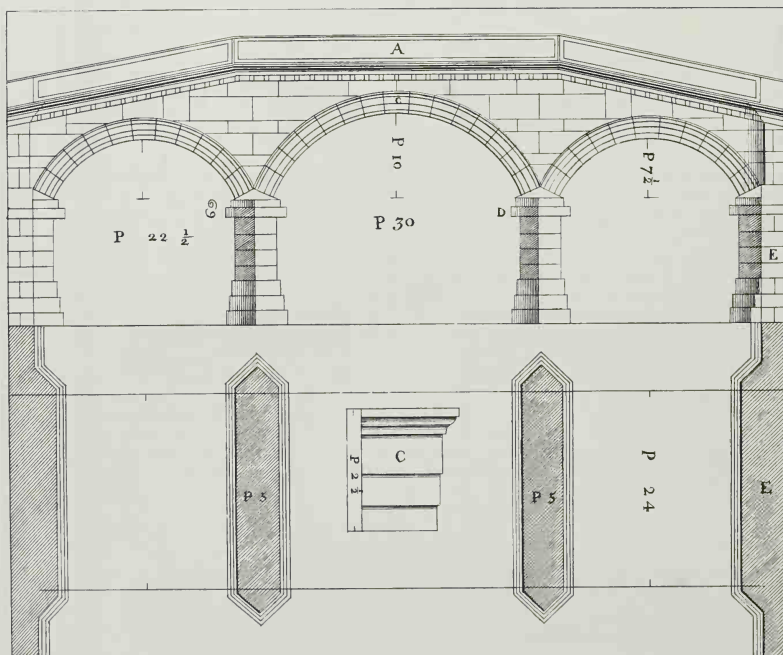
C H A P. XIII.

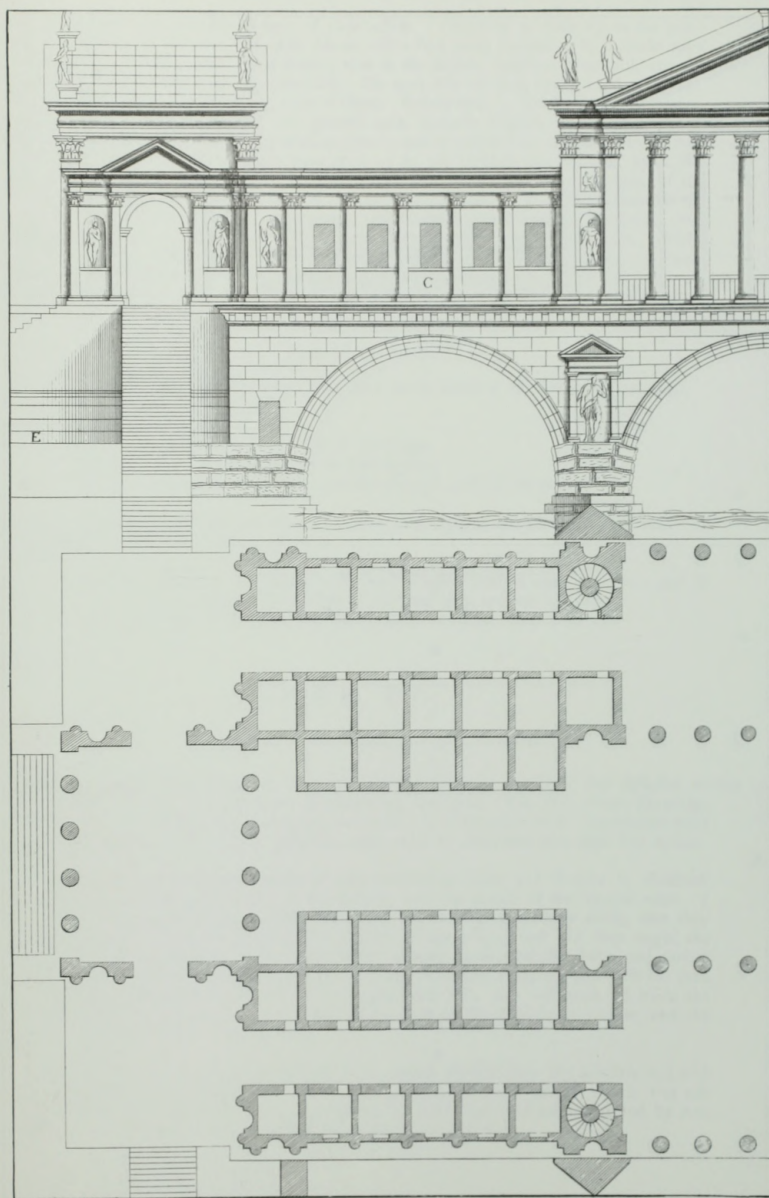
Of a STONE BRIDGE of my invention.

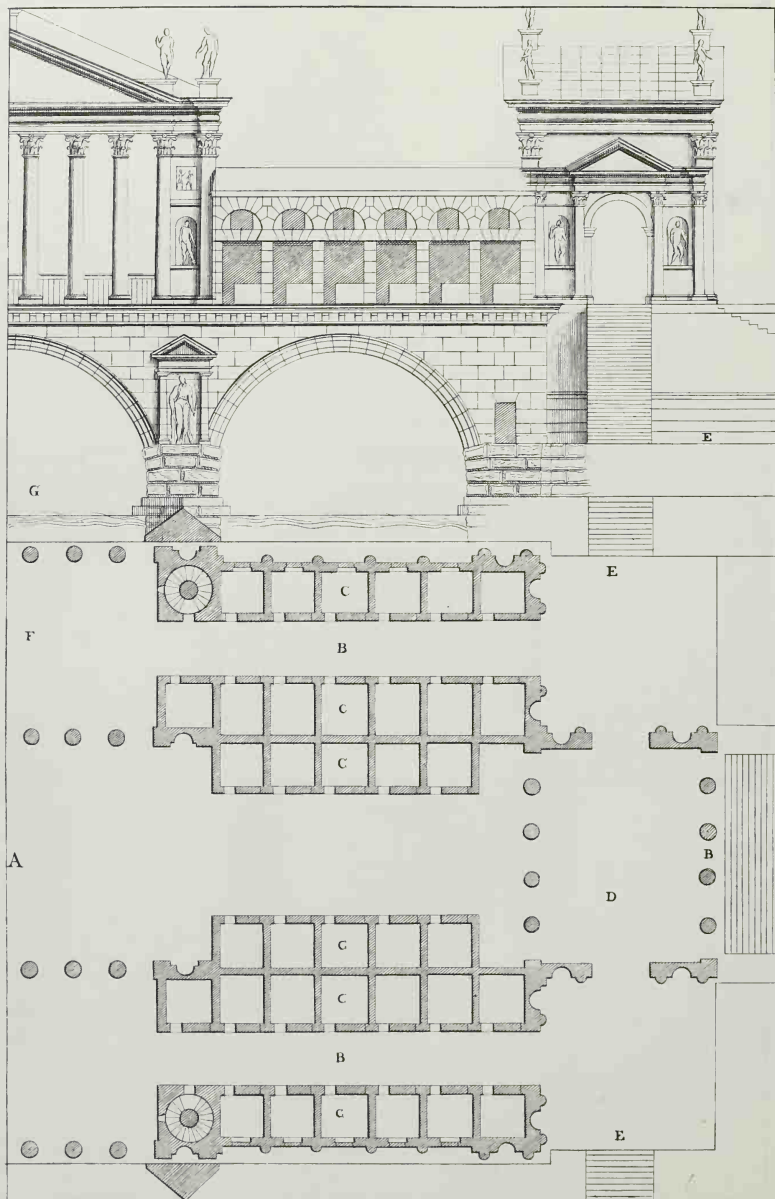
Plate 9,
and 10.

THE invention of the following bridge, is, in my opinion, very beautiful, and well adapted to the place where it was to have been built; which was in the middle of a city, that is one of the greatest, and of the most noble in *Italy*, and is the metropolis of many other cities, and where there is a very great traffick carried on, almost from every part of the world. The river is very broad, and the bridge would have been in the very spot where









where the merchants assemble to treat of their affairs. Therefore, to keep up to the grandeur and dignity of the said city, and also to add a very great income to it, I made upon the bridge, in its full breadth, three streets; that in the middle, ample and beautiful, and the other two, one on each side, somewhat less. On each side of these streets I ordered shops, so that there would have been six rows of them. Besides this, in the heads of the bridge, and in the middle, that is, upon the greatest arch, I made loggia's, in which the merchants might have assembled to negotiate together; and it would have afforded conveniency, and very great beauty. One might have gone up to the loggia's, in the heads, by a few steps; and level with them would have been the floor of all the remaining part of the bridge. It ought not to seem a novelty that loggia's are made upon bridges, because the bridge *Ælius* in *Rome*, of which mention has been made in its place, was covered over with loggia's, with columns of bronzo, with statues, and with other curious ornaments. Besides which, on this occasion, for the above-mentioned reasons, it was almost necessary to make them. In the proportions of the pilasters, and of the arches, the same order has been observed, and the same rules that have been laid down in the above-mentioned bridges, which every one may easily find out of himself.

Parts of the plan.

- A, *Is the beautiful and ample street made in the middle of the breadth of the bridge.*
- B, *Are the lesser streets.*
- C, *Are the shops.*
- D, *Are the loggia's in the heads of the bridge.*
- E, *Are the steps that go up to the said loggia's.*
- F, *The loggia's in the middle upon the greatest arch of the bridge.*

THE parts of the upright correspond to those of the plan, and therefore may easily be understood, without any farther explication.

- C, *The upright of the shops, in the part without, that is over the river; and in the plate appears the upright of the same shops towards the street.*
- G, *Is the line of the surface of the water.*

C H A P. XIV.

Of another BRIDGE of my invention.

MY opinion being asked by some gentlemen concerning a bridge they designed to Plate 11. build of stone, I made them the following invention. The river where the bridge was intended, is one hundred and eighty foot wide. I divided this whole breadth into three voids, making that in the middle sixty foot wide, and the other two forty eight foot apiece.

THE pilasters that support the arches were twelve foot thick, and so were in thickness the fifth part of the void of that in the middle, and the fourth of the smaller voids. I somewhat altered, in these, the ordinary measures, making them very thick, that they might project out from the body of the breadth of the bridge; and that they might the better resist the impetuosity of the river, which is very rapid, and the stones and timber that might be carried down by it. The arches would have been a segment of a circle less than a semicircle, that the ascent of the bridge might have been easy and plain. I made the modeno of the arches the seventeenth part of the void of the arch in the middle, and the fourteenth of the void of the other two.

THIS bridge might have been adorned with niches directly over the pilasters and with statues; and a cornice along its sides would have had a good effect: which was also sometimes done by the antients, as one may see in the bridge of *Rimino*, ordered by AUGUSTUS CÆSAR, the designs of which have been given before.

- A, *The surface of the water.*
- B, *The bottom of the river.*
- C, *The stones that project, for the use abovesaid.*
- D, *The scale of ten foot, by which the whole work is measured.*

C H A P. X V .

Of the BRIDGE of Vicenza, that is upon the Rerone.

Plate 12. **T**HE other antient bridge, that (as I have said) is in *Vicenza*, over the *Rerone*, is vulgarly called *Il ponte dalle Beccarie*, because it is near the greatest butchery of the city. This bridge is intire, and very little different from that which is over the *Bacchiglione*, because it is also divided into three arches, and has the arch in the middle greater than the other two. All these arches are of a segment of a circle less than a semicircle, and without any ornament at all. The little ones are in height the third part of their breadth; that in the middle, is something less. The pilasters are in thickness the fifth part of the diameter of the lesser arches; and they have in their extremities, under the impost of the arches, the stones that project for the above said reasons.

BOTH these bridges are made with stone from *Colloza*, which is a soft stone, and is cut with a saw like wood. There are four bridges at *Padoua*, made after the same proportions of these two at *Vicenza*; three of which have only three arches, and are the bridge of *Altina*, that of *San Lorenzo*, and that which is called *Ponte Corvo*; and one has five, and is, that which is called *Ponte Molino*. In all these bridges it is to be observed, that the greatest care imaginable has been taken in joining the stones together, which (as I have before observed) is extremely requisite in all fabricks.

C H A P. X V I .

Of the PIAZZE, and of the edifices that are made round them.

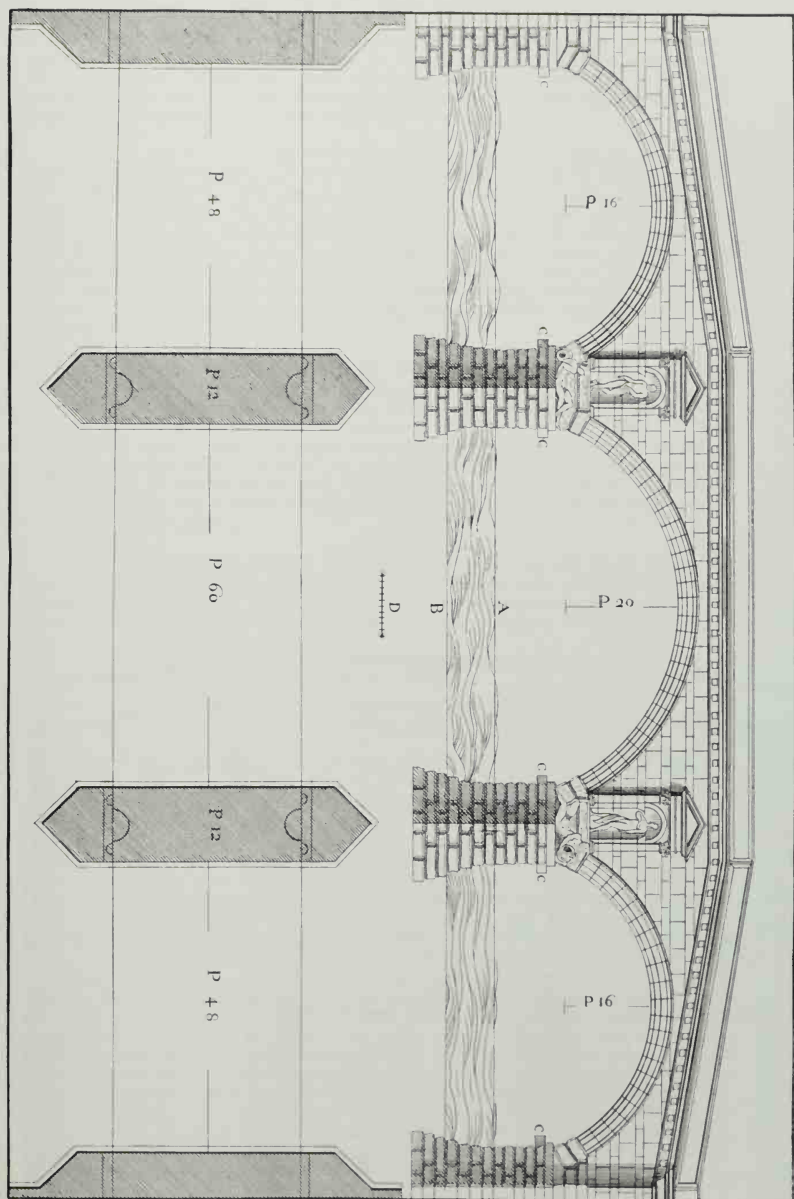
BESIDES the streets, of which mention has been made above, it is necessary that in cities, according to their bigness, there should be more or fewer piazze comparted, in which people assemble to contract for things useful and necessary for their wants: and as they are applied to different uses, so a proper and convenient place ought to be given to each. Those ample places are left in cities, besides the said conveniency, that there the people assemble to walk, to discourse, and bargain in; they afford also a great ornament, when at the head of a street, a beautiful and spacious place is found, from which the prospect of some beautiful fabrick is seen, and especially of some temple. But as it is of advantage, that there be many piazze dispersed through the city, so it is much more necessary, magnificent, and honourable, that there be one principal, which truly may be called publick. These principal piazze ought to be made of such bigness, as the multitude of the citizens shall require, that it may not be small for their conveniency and use, or that, through the small number of people, they may not seem uninhabited. In sea-port towns they must be made near the port; and in inland cities they must be made in the middle of them, that they may be convenient for every part of the city.

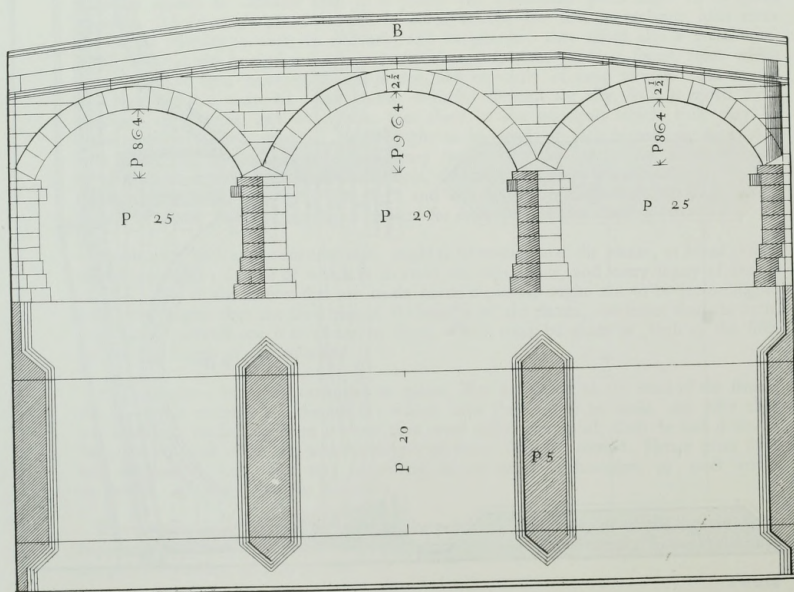
PORTRICO'S, such as the antients used, ought to be made round the piazze, as broad as their columns are high; the use of which is to avoid the rain, snow, and every injury of the air and sun. But all the edifices that are made round a piazza, ought not to be (according to ALBERTI) higher than the third part of the breadth of the piazza, nor lower than the sixth. And to the portico's one is to ascend by steps, which must be made as high as the fifth part of the length of the columns.

ARCHES give a very great ornament to piazze that are made at the head of the streets, that is, in the entrance into the piazza; which, how they are to be made, and why they were antiently made, and from whence they were called triumphal, shall be laid down at large, in my book of arches, and the designs of many shall be inserted. Hence great light will be given to those, that may be willing in our times, or hereafter, to erect arches to princes, to kings, and to emperors.

BUT, returning to the principal piazza, the palace of the prince, or of the signory (as it happens either to be a principality or a republick) ought to be joined thereto, so ought the mint the publick treasury, and the prisons.

T H E S E





THESE last were antiently made of three forts; the one for those that were debauched and leud, who were kept there in order to their reformation, which now are ordinarily assigned to mad-folks; the second fort was for debtors, and this is still in use among us; the third is where the malefactors, either already condemned, or such as are to be tried, are kept: which three forts are sufficient, since the errors of men proceed either from immodesty, or from contempt, or from wickedness.

THE mint, and the prisons ought to be placed in very secure places, and be very ready at hand, encompassed with high walls, and well guarded against the violence and the treachery of the seditious citizens. The prisons may be made healthy and commodious, because they have been instituted for the safe-keeping and not for the torment and pain of criminals, or of other men; therefore their walls in the middle must be made of very large live stones, bound together with cramps, and with nails of iron or metal, and then coated on both sides with bricks: because, in so doing, the humidity of the live stones will not make them unhealthy, neither will they want for security. Passages must also be made round them; and the rooms for the keepers near, that they may easily hear if the prisoners should contrive any thing.

BESIDES the treasury and the prisons, the curia shou'd be joined to the piazza, which is the place where the senate meets to consult on affairs of state. This must be made of such bigness, as the dignity and number of the citizens shall seem to require; and if it be square, whatever it shall be in breadth, adding one half more, that shall be its height. But if its form shall be longer than it is broad, the length and breadth must be added together, and the half of the whole sum shall be taken for the height to the roof. In the middle of the height, large cornices ought to be made round the walls, which must project forward, that the voice of those who dispute, may not be lost in the height of the curia, but reflected back, the better to come to the ears of the auditors.

ON the part facing the warmest region of the heaven, on one side of the piazza, the basilica must be made, that is, the place where justice is administered, whither great part of the people and men of business resort; of which I shall make particular mention, after I have shewn how the Greeks and Latins made their piazze, and have given the designs of them.

CHAP. XVII.

Of the PIAZZE of the Greeks.

THE Greeks, according to VITRUVIUS, in the first chapter of the fifth book, ordered the piazze in their cities in a square form, and made ample and double portico's round them, consisting of many columns, that is, one diameter and an half of a column distant the one from the other, or at most two diameters. These portico's were as broad as the columns were long. Hence, as they were double, the place to walk in came to be as broad as twice the length of the column, and therefore very commodious and ample. Upon the first columns, which (with regard to the place where they were) in my opinion, must have been of the Corinthian order, there were other columns, a fourth part less than the first: these had a poggio under them, as high as conveniency required; because these upper portico's were also made to walk in, and to discourse, and where people might conveniently be to see the spectacles that might be exhibited in the square, either out of devotion or pleasure. All these portico's ought to be adorned with niches and statues, because the Greeks took great delight in such ornaments. Near to these piazze, although VITRUVIUS, when he teaches how they were ordered, does not make mention of those places, there ought to be the basilica, the curia, the prisons, and all the other places usually joined to piazza's, of which mention has been made before. Besides which (as he says in the seventh chapter of the first book) the antients used to make near the piazze, the temples consecrated to MERCURY and ISIS, as to Gods presiding over business and merchandize: and in *Pola*, a city of *Istria*, two are to be seen upon the piazze; the one like the other, for form, grandeur, and for ornaments. I have drawn them in the design of these piazze on one side of the basilica. The plan and elevation of which, with all their particular members, shall be seen more distinctly in my book of temples.

A, *The piazza.*

B, *The double portico's.*

C, *The basilica where the judges had their tribunal.*

U

D, *The*

- D, *The temple of Isis.*
 E, *The temple of MERCURY.*
 F, *The curia.*
 G, *The portico, and the little court before the mint.*
 H, *The portico, and the little court before the prisons.*
 I, *The door of the atrio, from which one enters the curia.*
 K, *The passages round the curia, through which one comes to the portico's of the piazza.*
 L, *The vault of the portico's of the piazza.*
 M, *The vault of the portico's within.*
 N, *The plan of the walls of the small courts, and of the temples.*
 P, *The passages round the mint and the prisons.*

Plate 14. THE elevation that follows the plan, is of one part of the piazza.

C H A P. XVIII.

Of the PIAZZE of the Romans.

THE Romans, and the Italians (as VITRUVIUS says in the above-mentioned place) departing from the custom of the Greeks, made their piazze longer than they were broad; so that the length being divided into three parts, two were given to the breadth, because of the gratuities in them made to the gladiators. This form was much more commodious for that purpose than the square one; and for this reason also they made the intercolumniations of the portico's, that were round the piazze, of two diameters and a quarter of a column, or of three diameters, that the sight of the people might not be obstructed by the closeness of the columns. The portico's were as broad as the columns were long, and they had banker's shops under them. The columns above were made one fourth part less than those below, because the under parts, with respect to the weight they bear, ought to be firmer than those above, as was said in the first book. In the part facing the hottest region of the heaven they placed the basilica, which I have marked in the design of these piazze, two squares in length; and in the part within there are portico's round it, the third part of the space in the middle in breadth. Their columns are as long as the place is broad, and they may be made of the most acceptable order.

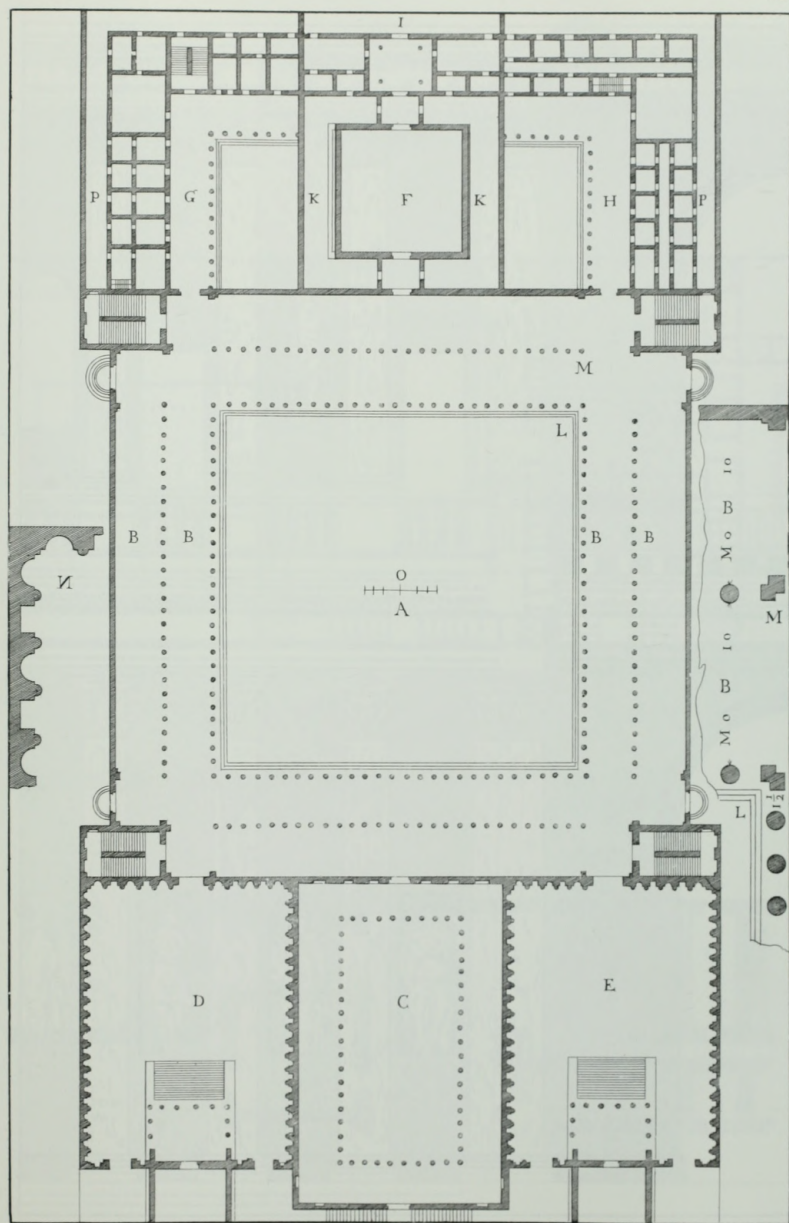
IN the part facing the north, I have placed there the curia, one square and an half in length; its height is half the length and breadth put together. This was the place (as I have said above) where the senate met to consult about matters of state.

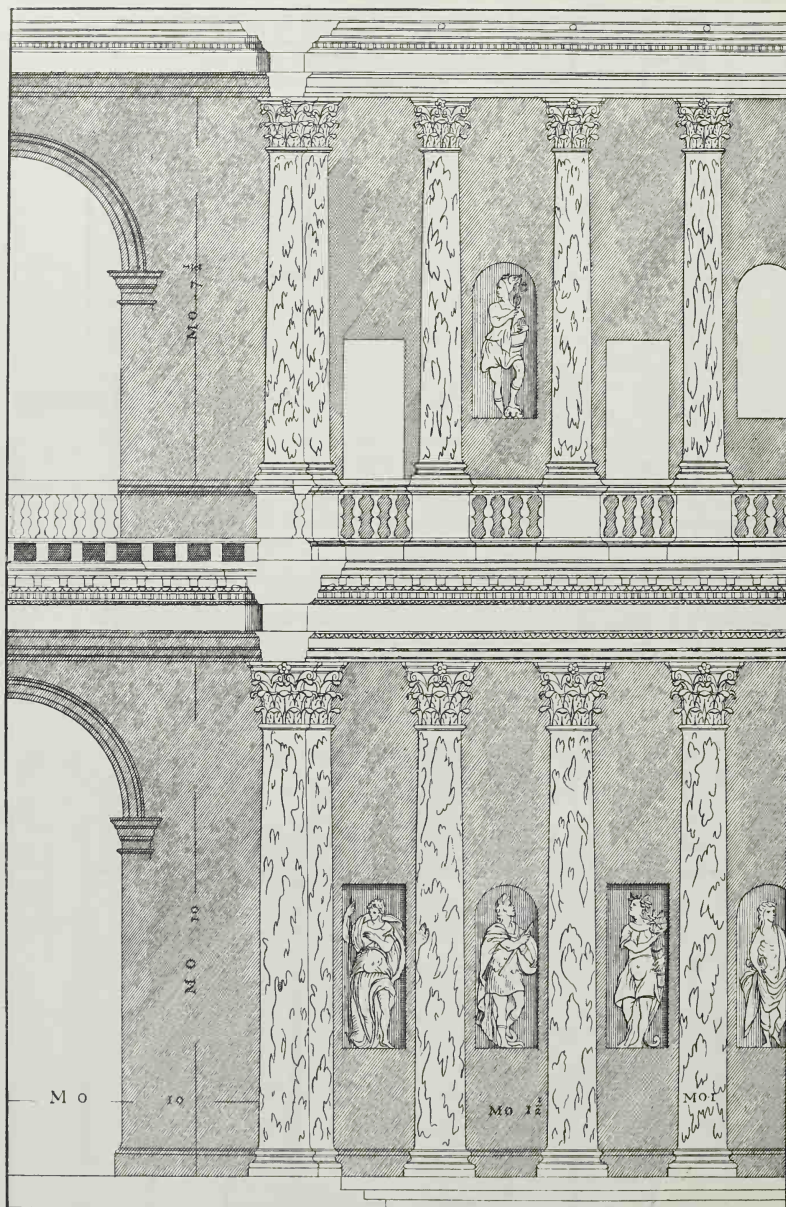
Plate 15.

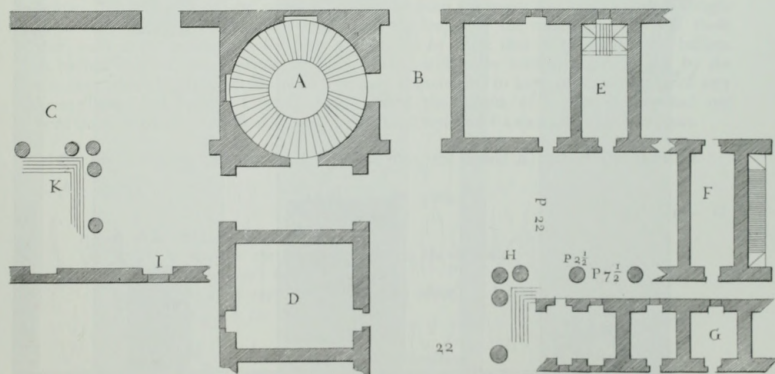
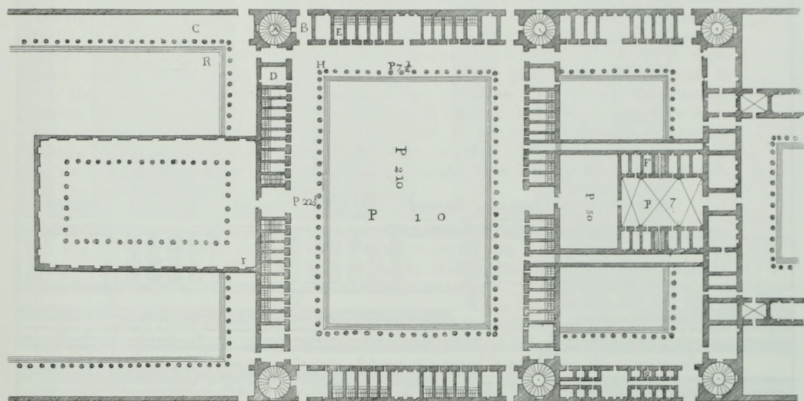
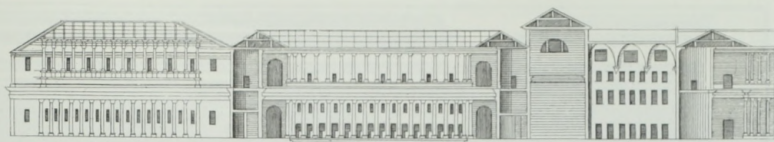
- A, *The winding stairs, void in the middle, which lead to the places above.*
 B, *The passage through which one enters into the portico's of the piazza.*
 C, *Portico's, and the little court on one side of the basilica.*
 D, *{*
 E, *{ The places for the bankers, and for the most honourable arts of the city.*
 F, *Is the place for the secretaries, whither the deliberations of the senate were remitted.*
 G, *The prisons.*
 H, *Is the return of the portico's of the piazza.*
 I, *The entrance into the basilica, by one side.*
 K, *The return of the portico's that are in the small courts on one side of the basilica.*

ALL the said parts are made by a larger scale, and countermarked with the same letters.

Plate 16. THE elevation that follows in a large form, is of one part of the portico's of the piazze.









C H A P. XIX.

Of the antient BASILICA'S.

FORMERLY those places were called basilica's, in which the judges sat under cover to administer justice, and where sometimes great and important affairs were debated. Hence we read, that the tribunes of the people caused a column to be taken away, which obstructed their seats, from the *Basilica Portia* (in which justice was administer'd) that stood near the temple of ROMULUS and REMUS at Rome, and which now is the church of *San. Cosmo e Damiano*. Of all the antient basilica's, that of PAULUS ÆMILIUS was very much celebrated, and reckoned among the marvels of the city. It stood between the temple of SATURN and that of FAUSTINA, on which he spent one thousand five hundred talents, given him by CÆSAR, which amount, by computation, to about nine hundred thousand crowns. They ought to be made adjoining to the piazze, as was observed in the above-said, which were both in the *Forum Romanum* and facing the warmest region of the heaven, that the merchants, and those that had law-suits, might in winter-time, without being incommoded by the bad weather, go and remain there without inconvenience. They ought not to be made narrower than one third part, nor wider than the half of the length, if the nature of the place does not hinder it, or if one is not compelled to alter the measure of this compartment.

OF this kind of edifice there is not the least antient vestigium remaining; wherefore, according to what VITRUVIUS mentions in the above-cited place, I have made the following designs; in which the basilica, in the space in the middle, that is, within the columns, is two squares long.

THE portico's that are on the sides, and in the part where the entrance is, are in breadth the third part of the space in the middle. Their columns are as long as they are broad, and may be made of any order one pleases. I have not made a portico in the part opposite to the entrance, because a large nich seems to me to suit there very well, made of a segment of a circle less than a semicircle, in which the tribunal of the prætor, or of the judges, may be, if they are many, to which there must be an ascent by steps, that it may have the greater majesty and grandeur. I do not deny, nevertheless, but that portico's may also be made all round them, as I have done in the basilica's represented in the designs of the piazze. Through the portico's one goes to the stairs that are on the sides of the said nich, which lead to the upper portico's. These upper portico's have their columns the fourth part less than those below. The poggio, or the pedestal, that is between the upper and lower columns, ought to be made in height one fourth part less than the length of the columns above, that those that walk in the upper portico's, may not be seen by those that do business in the basilica. A basilica at *Fano*, was ordered by VITRUVIUS, with other compartments, which by the measures which he gives the said place, one may comprehend to have been an edifice of very great dignity and beauty. I would have inserted the designs of it here, if they had not been done, with the utmost diligence, by the most reverend BARBARO in his *Vitruvius*.

OF the following designs, the first is the plan, the second is part of the elevation.

PARTS of the plan.

- A, *The entrance into the basilica*
- B, *Is the place for the tribunal opposite to the entrance.*
- C, *Are the portico's round it.*
- D, *Are the stairs that lead to the parts above.*
- E, *Are the places for the filth.*

Plate 17.

PARTS of the elevation.

- F, *The profile of the place, made there to place the tribunal opposite to the entrance.*
- G, *The columns of the portico's below.*
- H, *Is the poggio, in height a fourth part less than the columns of the upper portico's.*
- I, *The columns of the said upper portico's.*

Plate 18.

CHAP. XX.

Of the BASILICA's of our times, and of the designs of that of Venice.

AS the antients made their basilica's, that men in winter and summer might have a place to assemble, and treat about their occasions and affairs; so in our times in every city, both in *Italy* and out of it, some publick halls are made, which may rightly be called basilica's, because, that near to them is the habitation of the supreme magistrate. Hence they come to be a part of it. [The word basilica properly signifies a royal house.] Here also the judges attended to administer justice to the people.

THE basilica's of our times differ in this from the antients, viz. the antient ones were upon, or even with the ground, and ours are raised upon arches, in which are shops for divers arts, and the merchandizes of the city. There the prisons are also made, and other places belonging to publick business. Besides which, the modern basilica's have portico's in the part within, as has been seen in the above mentioned designs; and the antient, on the contrary, either had no portico's, or had them in the part without upon the piazza.

OF these modern halls there is a very noble one at *Padoua*, a city illustrious for its antiquity, and celebrated for learning throughout the world, in which the gentlemen every day assemble, and it serves them as a covered piazza.

THE city of *Brescia*, magnificent in all her actions, has lately made one which for its largeness and ornaments is wonderful. And another is at *Vicenza*, of which only I have put the designs, because the portico's it has round it are of my invention; and because I do not doubt but this fabrick may be compared with the antient edifices, and ranked among the most noble, and most beautiful fabricks, that have been made since the antient times; not only for its grandeur, and its ornaments, but also for the materials, which is all very hard live stone, and all the stones have been joined and banded together, with the utmost diligence. It would be unnecessary to put down the measures of every part, because they are all marked in their places, in the designs.

Plate 19. IN the first plate, the plan and the elevation are designed, with the plan of the pilasters in a large form.

Plate 20. IN the second is designed one part of the elevation in a larger form.

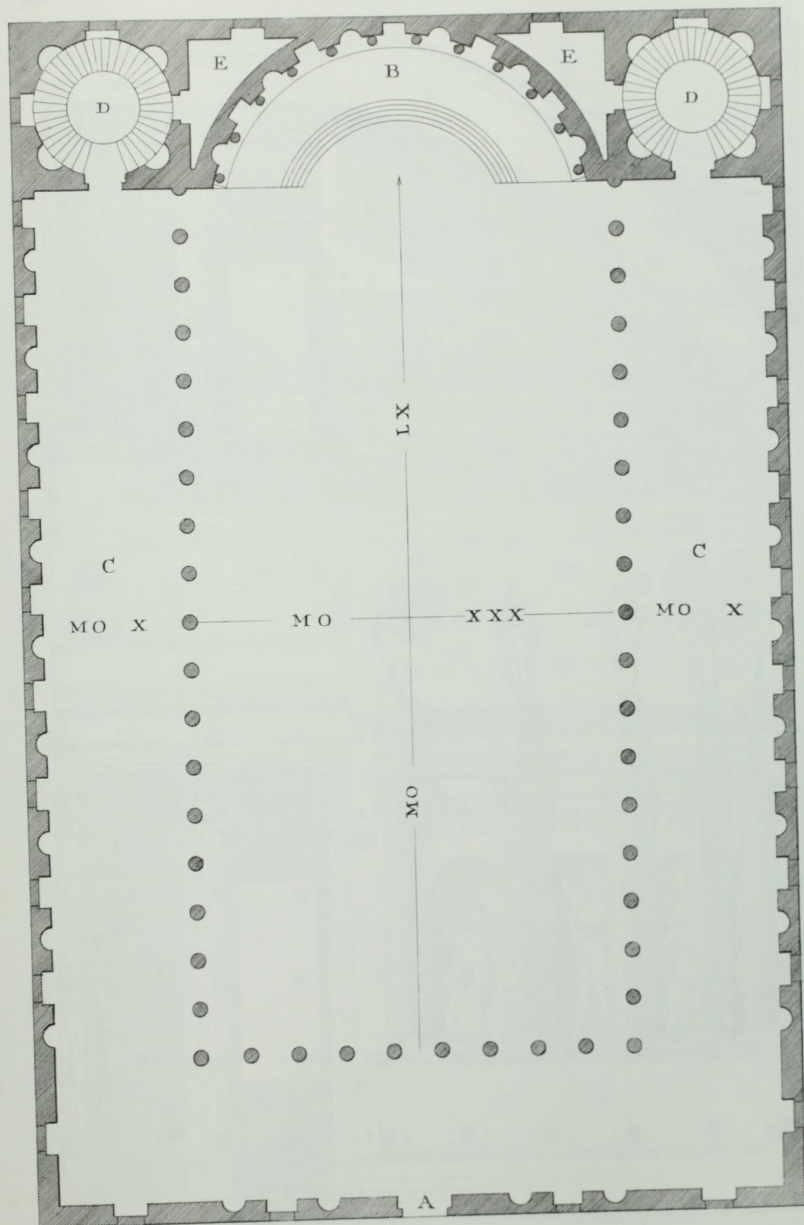
CHAP. XXI.

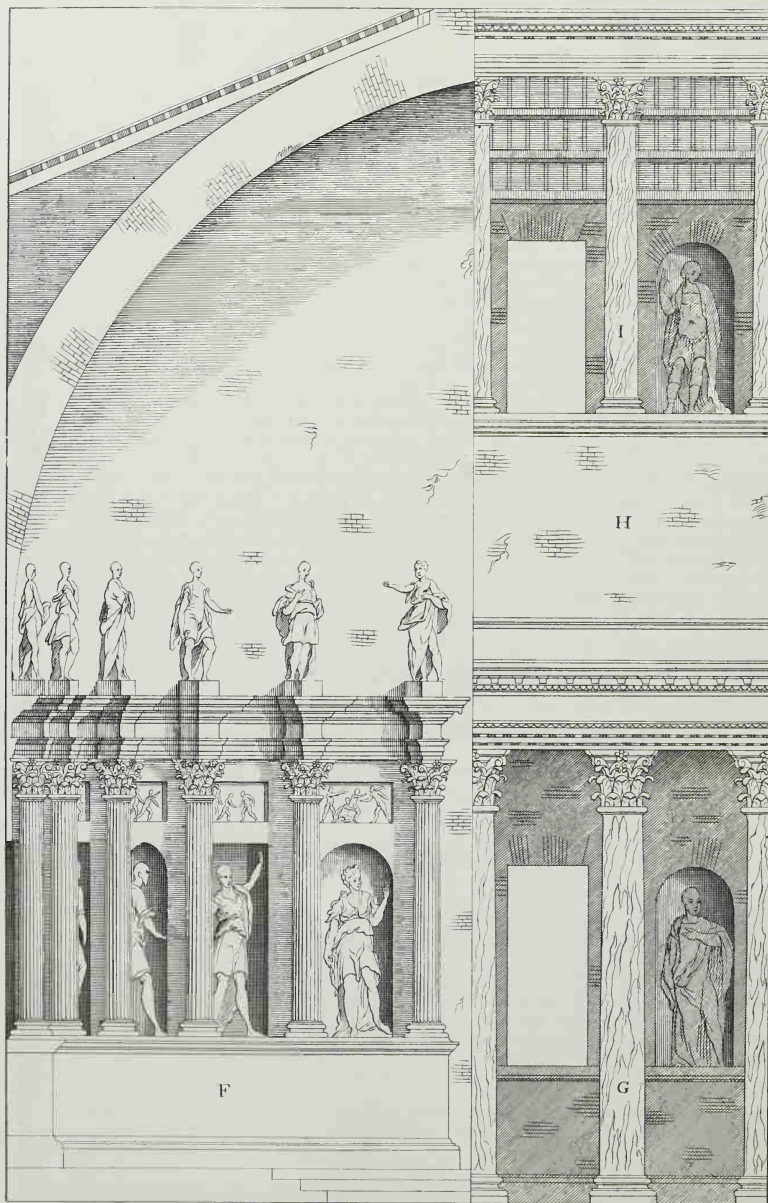
Of the PALESTRA's and of the XYSTI of the Greeks.

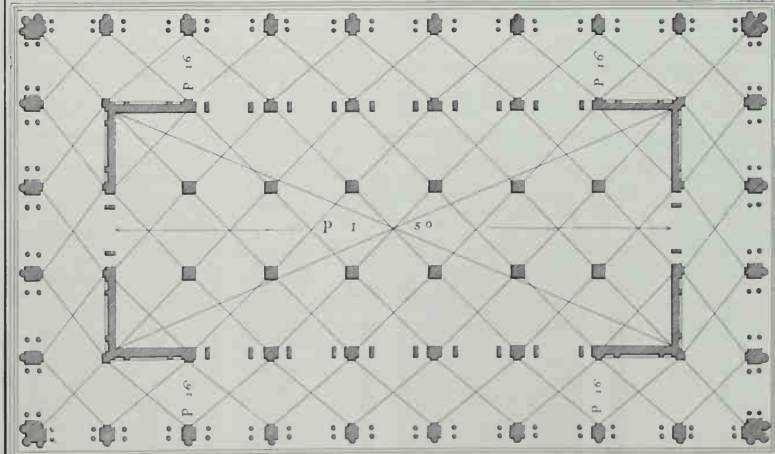
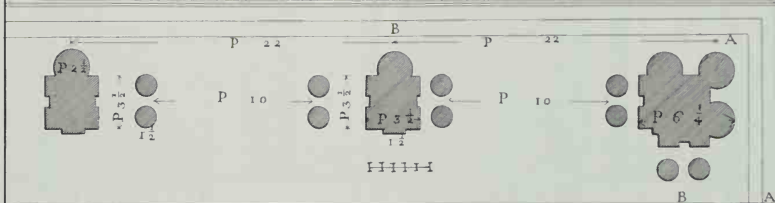
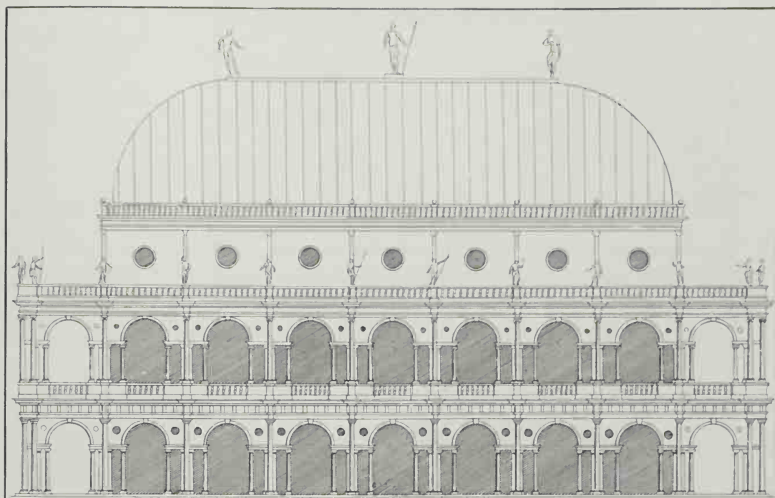
HAVING treated of ways, of bridges, and of piazza's, it remains that mention should now be made of those edifices made by the antient Greeks, into which men went to exercise themselves; and it is very likely, that at the time the cities of Greece were governed as a republick, in every city there was one of these edifices; where the young men, besides the learning of sciences, by exercising their bodies in the things belonging to the art of war, such as to know the orders, to throw the bar, to wrestle, to manage their arms, to swim with a weight upon their shoulders, they became fit for action, and for all the accidents of war. Hence they could afterwards, by their valour, and military discipline, tho' but a few in number, overcome a very numerous army.

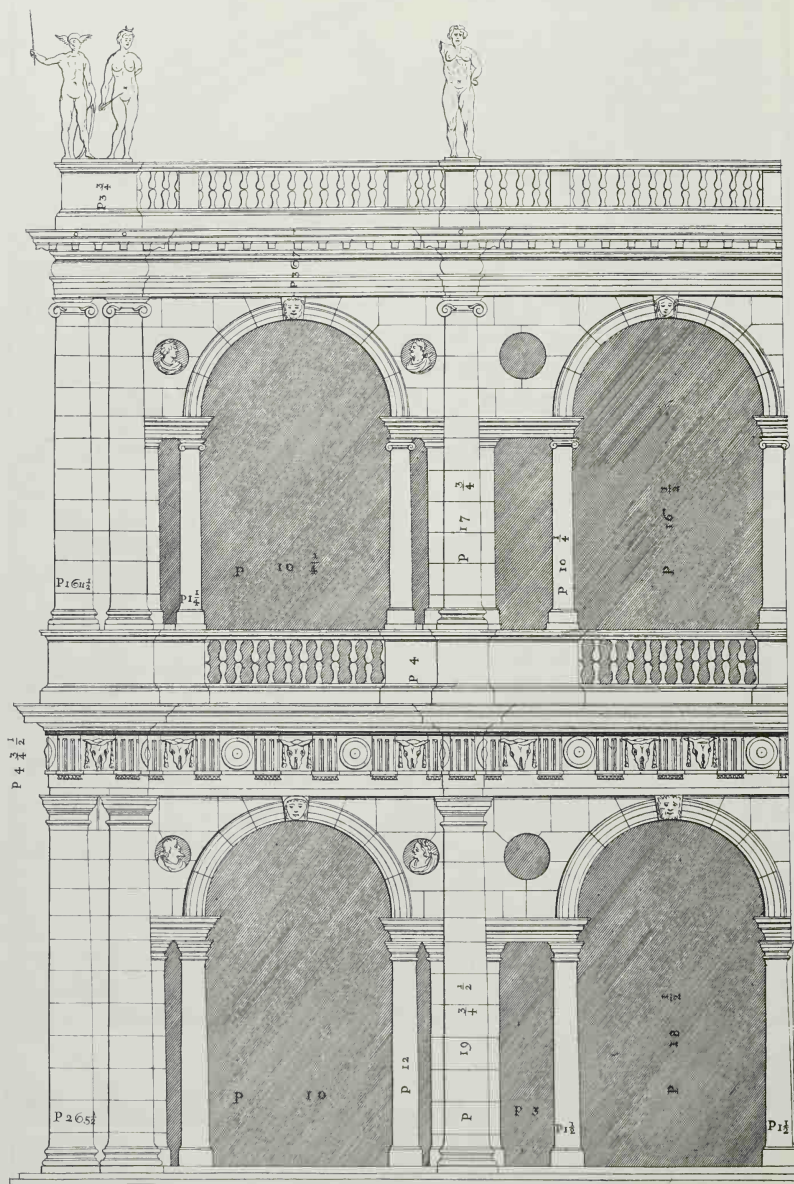
THE Romans, after their example, had the *Campus Martius*, in which the youth were publicly exercised in the said military actions, from which proceeded wonderful effects, and their notable victories in battle.

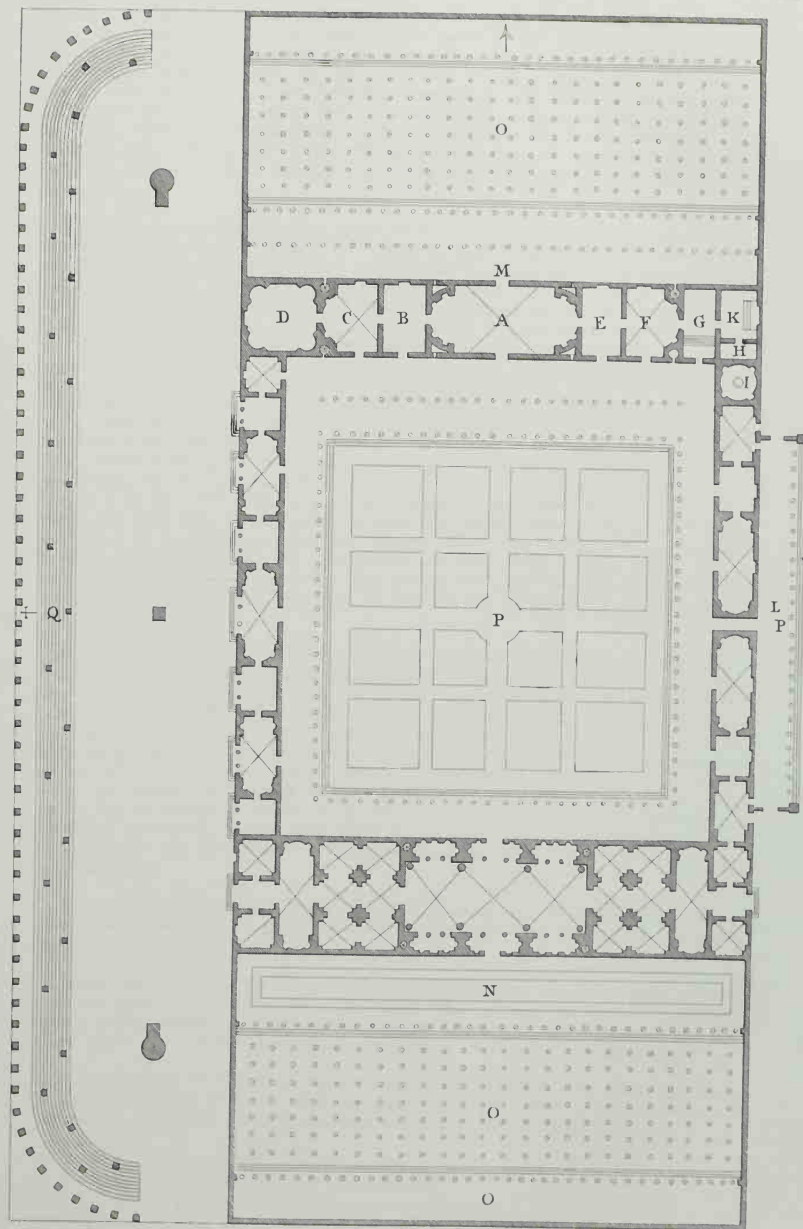
CÆSAR writes in his Commentaries, that being on a sudden attacked by the *Nervii*, and seeing that the seventh and twelfth legion were in a manner so confined, that they could not fight, commanded













commanded that they should extend and place themselves one on the flank of the other, that they might have an opportunity of handling their arms, and not be surrounded by the enemies; which being immediately done by the soldiers, he obtained the victory, and they the immortal name of being brave, and well disciplined: since, in the very heat of battle, when things were full of danger and confusion, they performed that, which to many in our times would seem a thing very difficult to be done, even when the enemies are at a distance, and when there is convenience both of time and place. Of such like glorious actions the Greek and Latin histories are almost all full; and there is no doubt but that it proceeded from their continual exercising of the young men.

FROM this exercise, the said places, which (as VITRUVIUS relates, in the eleventh chapter of his fifth book) the Greeks built, were by them called *Palestra's* and *Xifli*, and their disposition was this. In the first place they designed the square piazza, two stadia in circumference; that is, of two hundred and fifty paces; and on three sides thereof they made simple portico's, and under them ample halls, in which were the men of letters, such as philosophers, and the like, disputing and discoursing. On the fourth side, which was turned to the south, they made double portico's, that the rains driven by the winds, might not enter them far, in winter; and that the sun might be kept off in summer. In the middle of this portico was a very great hall, one square and an half in length, where the young men were instructed. On the left hand of which, was the place where the girls were instructed; behind that, the place where the wrestlers powdered themselves; and farther on, the rooms for cold washing, or what now we call cold bathing, which comes to be in the turning of the portico. On the left of the place for the young men, was the place where they anointed their bodies, in order to be the stronger; and near to it the cold room, where they undressed themselves; and farther on, the warm room, where they made a fire, from whence one came into the hot room. This room had on one part of it the *laconicum*, which was the place where they sweated, and on the other the room for hot bathing; because these prudent men were willing to imitate nature, which from an extreme cold, leads gradually to an extreme heat; and that one might not on a sudden, from the cold room, enter into the hot one, but intermediately thro' the warm one.

ON the outside of the said places there were three portico's, one on the side where the entrance was, which might be made towards the east or west; the other two were, one on the right, and the other on the left; one placed towards the north, and the other towards the south. That which faced the north, was double, and in breadth what the columns were long. The other, facing the south, was simple, but much larger than either of the above-said, and was divided in this manner: the space of ten foot was left on the side of the columns, and on that of the wall, which space is by VITRUVIUS called the margin; by two steps six foot broad, one descended into a floor, not less than twelve foot in breadth, in which, during the winter season, the wrestlers might exercise themselves under cover, without being interrupted by those that stood under the portico to look on; who also, by reason of the said lowness of the place where the wrestlers were, could see better.

THIS portico was properly called *Xiflus*. The *Xifli* were so made, that between two portico's there might be groves and plantations, and the streets between the trees paved with mosaic work.

NEAR the *Xiflus*, and the double portico, the covered places to walk in were designed, by them called *Peridromis*; in which, in winter, when the sky was serene, the wrestlers might exercise themselves. The *stadium* was on one side of this edifice, and was the place where the multitude could stand commodiously to see the wrestlers engage.

FROM this kind of edifices the Roman Emperors took example, who ordered the baths to delight and please the people, as being places where men went to recreate and wash themselves; of which in the following book I shall treat, God willing.

- A, The place where the boys were instructed.
- B, The place where the girls were instructed.
- C, The place where the wrestlers powdered themselves.

X

Plate 21.

D, The

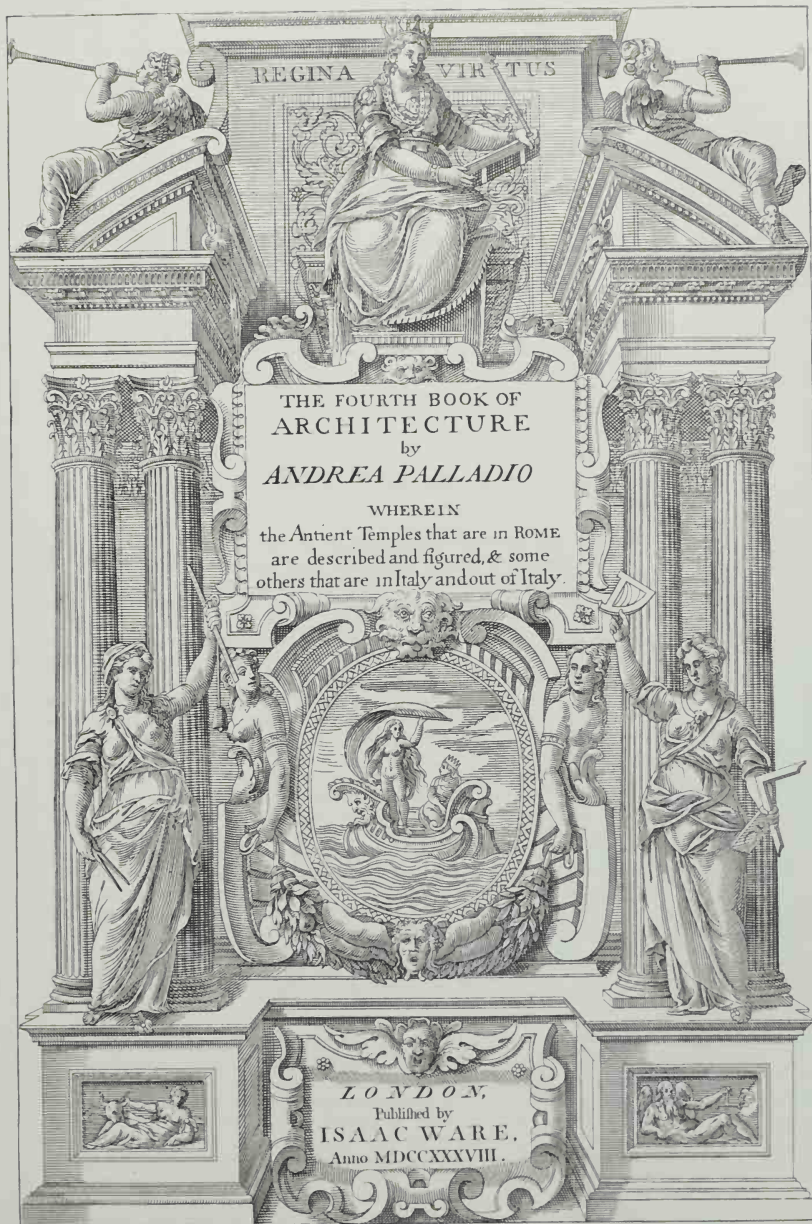
- D, *The cold bath.*
 E, *The Place where the wrestlers anointed themselves.*
 F, *The cold room.*
 G, *The warm room, through which one proceeds to the furnace.*
 H, *The hot room, called the sweating room.*
 I, *The laconicum.*
 K, *The hot bath.*
 L, *The outward portico before the entrance.*
 M, *The outward portico towards the north.*
 N, *The outward portico towards the south, where in the winter season the wrestlers exercised themselves, called Xistus.*
 O, *The groves between two portico's.*
 P, *The uncovered places to walk in, called Peridromis.*
 Q, *Stadium, where the multitude stood to see the wrestlers engage.*
 +, *The east.*
 O, *The south.*
 P, *The west.*
 ∴, *The north.*

THE other places made in the design are eisdre and schools.

The END of the THIRD BOOK.



THE



REGINA VIR TUS

THE FOURTH BOOK OF
ARCHITECTURE
by
ANDREA PALLADIO

WHEREIN
the Antient Temples that are in ROME
are described and figured, & some
others that are in Italy and out of Italy.

LONDON,

Published by
ISAAC WARE,
Anno MDCXXXVIII.



THE FOURTH BOOK

O F

Andrea Palladio's

ARCHITECTURE.

The PREFACE to the READER.

IF upon any fabrick labour and industry may be bestowed, that it may be compared with beautiful measure and proportion; this, without any doubt, ought to be done in temples; in which the maker and giver of all things, the almighty and supream God, ought to be adored by us, and be praised, and thanked for his continual benefactions to us, in the best manner that our strength will permit. If, therefore, men in building their own habitations, take very great care to find out excellent and expert architects, and able artificers, they are certainly obliged to make use of still much greater care in the building of churches. And if in those they attend chiefly to conveniency, in these they ought to have a regard to the dignity and grandeur of the Being there to be invoked and adored; who being the supream good, and highest perfection, it is very proper, that all things consecrated to him, should be brought to the greatest perfection we are capable of. And indeed, if we consider this beautiful machine of the world, with how many wonderful ornaments it is filled, and how the heavens, by their continual revolutions, change the seasons according as nature requires, and their motion preserves itself by the sweetest harmony of temperature; we cannot doubt, but that the little temples we make, ought to resemble this very great one, which, by his immense goodness, was perfectly completed with one word of his; or imagine that we are not obliged to make in them all the ornaments we possibly can, and build them in such a manner, and with such proportions, that all the parts together may convey a sweet harmony to the eyes of the beholders, and that each of them separately may serve agreeably to the use for which it shall be appointed. For which reason, although they are worthy to be much commended, who being guided by an exceeding good spirit, have already built temples to the supream God, and still build them; it does not seem, nevertheless, that they ought to remain without some little reprehension, if they have not also endeavoured to make them in the best and most noble form our condition will permit.

HENCE, because the antient Greeks and Romans employed the utmost care in building the temples to their Gods, and composed them of the most beautiful architecture, that they might be made with so much greater ornaments, and in greater proportion, as that they might be suitable for the God to whom they were consecrated; I shall shew in this book the form and the ornaments of many antient temples, of which the ruins are still to be seen, and by me have been reduced into designs, that every one may know in what form, and with what ornaments churches ought to be built. And although there is but a small part of some of them to be seen standing above-ground, I nevertheless from that small part, (the foundations that could be seen being also considered) have endeavoured, by conjecture, to shew what they must have been when they were entire. And in this VITRUVIUS has been a very great help to me; because, what I saw, agreeing with what he teacheth us, it was not difficult for me to come at the knowledge of their aspect, and of their form.

BUT to the ornaments, that is, the bafes, columns, capitals, cornices, and fuch like things, I have added nothing of my own; but they have been meafured by me with the utmoft attention, from different fragments, found in the places where thefe temples flood. And I make no doubt, but that they, who fhall read this book, and fhall confider the designs in it carefully, may be able to underftand many places, which in VITRUVIUS are reputed very difficult, and to direct their mind to the knowledge of the beautiful and proportionable forms of temples, and to draw from them various very noble inventions; making ufe of which in a proper time and place, they may fhew, in their works, how one may, and ought to vary, without departing from the precepts of the art, and how laudable and agreeable fuch variations are.

BUT before we come to the designs, I fhall, as I ufually do, briefly mention thofe advertences, that in building of temples ought to be obferved; having alfo taken them from VITRUVIUS, and from other very excellent men, who have written of fo noble an art.

CHAPTER I.

Of the SITE that ought to be chofen for the building of temples.

TUSCANY was not only the firft to receive architecture into *Italy*, as a stranger, from whence the order called Tufcan had its meafures; but alfo the things belonging to the Gods, which the greateft part of the world, led into blind error, adored. She was miftrefs of the neighbouring people, and fhewed what fort of temples, and in what place, and with what ornaments, refpecting the quality of the Gods, they ought to be built; which obfervations, although in many temples one may fee, they have not been confidered, I fhall briefly relate neverthelefs, how they have been left us by writers; that fuch as delight in antiquity, may remain in this part fatisfied, and that the mind of every one may be roused and inflamed to employ all fuitable care in the building of churches; becaufe it would be a very unfeemly, and a blameable thing, that we, who have the true worthip, fhould be out-done in this point, by thofe who had no light of truth.

AND, becaufe the places, in which facred temples are to be built, are the firft things that ought to be confidered, I fhall make mention of them in this chapter.

I SAY therefore, that the antient Tufcans directed that the temples dedicated to VENUS, to MARS, and to VULCAN, fhould be made without the city, as to thofe who incited men's minds to lasciviousnefs, to wars, and to broils; and within the city to thofe that prefided over chaftity, over peace, and good arts; and that to fuch Gods, into whose care particularly the city might be put; and thofe to JUPITER, JUNO, and to MINERVA, whom they alfo esteemed to be protectors of the city.

TEMPLES fhould be built upon very high places, in the middle of the country, and on a rock. And to PALLAS, to MERCURY, and to ISIS, becaufe they prefided over artificers and merchants, they ufually built temples near the piazza's, and fometimes over the very piazza; to APOLLO, and to BACCHUS near the theatre; to HERCULES near the circus, and the amphitheatre.

THOSE to ÆSCULAPIUS, to HEALTH, and to thofe Gods by whose medicines they thought men recovered their health, they built in places extreamly healthy, and near wholefom waters; that by coming from a bad and a peftilential air, to a good wholefome one, and by drinking thofe waters, the infirm might the fooner, and with lefs difficulty, be cured, whereby a zeal for religion might be encreafed.

AND, to the reft of the other Gods, they likewife thought it neceffary to find places to build their temples, purfuant to the properties that they attributed to them, and to the manner of their facrifices. But we, who are by the fpecial grace of God freed from that darknefs, having departed from their vain, and falfe fuperftition, fhall chufe thofe fites
for

for temples, that shall be in the most noble, and most celebrated part of the city, far from dishonoured places, and on beautiful and ornamented piazza's, in which many streets finish, whereby every part of the temple may be seen with its dignity, and afford devotion and admiration to whomever sees and beholds it. And if in the city there be hills, the highest part of them is to be chosen; but in case there be no elevated places, the floor of the temple is to be raised, as much as is convenient, above the rest of the city. One is besides to ascend to the temple by steps; since the ascent alone to a temple is what affords greater devotion and majesty.

THE fronts of temples must be made to face the greatest part of the city, that religion may seem to be placed as the safe-guard and protectrix of the citizens.

BUT if temples are built without the city, then their fronts must be made to face the publick streets, or the rivers, if they are built near them; that passengers may see them, and make their salutations and reverences before the front of the temple.

CHAP. II.

Of the forms of TEMPLES, and of the decorum to be observed in them.

TEMPLES are made round, quadrangular, of six, eight, and more sides; all which terminate in the capacity of a circle, in the form of a cross, and of many other forms and figures, according to the various inventions of men, which, when they are done with beautiful and suitable proportions, and distinguished by elegant and ornamented architecture, they deserve to be praised. But the most beautiful, and most regular forms, and from which the others receive their measures, are the round, and the quadrangular; and therefore VIRUVIUS only mentions these two, and shews us how they are to be comparted, as shall be inserted when the compartment of temples comes to be treated of. In temples that are not round, one ought carefully to observe, that all the angles be equal, let the temple be of four, of six, or of more sides and angles.

THE antients had a regard to what was suitable to every one of their gods; not only in the choice of the places in which they were to build temples, as has been said before; but also in the choice of the form. Hence to the sun, and moon, because they continually revolve round the world, and by their revolution produce effects manifest to every body, they made temples of a round form, or at least such as came near to roundness; and thus also to VESTA, which they said was goddess of the earth, which we know is a round body.

TO JUPITER, as patron of the air, and of the heavens, they made temples uncovered in the middle, with portico's round them, as I shall hereafter observe. In the ornaments also, they had very great consideration to what God they built: therefore to MINERVA, to MARS, and to HERCULES, they made the temples of Dorick work; because to the Gods of the soldiery, of which they were made presidents, they said fabricks without delicacy and neatness were most suitable.

TO VENUS, to FLORA, to the Muses, to the Nymphs, and to the more delicate goddesses, they said temples ought to be made that were suitable to the blooming and tender virgin age: hence they gave the Corinthian work to them; it appearing to them, that delicate and blooming works, ornamented with leaves, and with voluta's, were more suitable to that age.

BUT to JUNO, to DIANA, to BACCHUS, and to other gods, whom neither the gravity of the first, nor the delicacy of the second, seemed to suit, they assigned Ionick works, which between the Dorick and Corinthian hold the middle place.

THUS we read, that the antients in building their temples endeavoured to observe the decorum, in which consists the most beautiful part of architecture. And therefore we also, that have no false gods, in order to observe the decorum concerning the form of temples, must chuse the most perfect, and most excellent. And since the round one is such, because it is the only one amongst all the figures that is simple, uniform, equal, strong, and capacious, let us make our temples round. For which purposes this figure is particularly fit, because it being inclosed by one termination only, in which is to be found neither beginning nor end, nor are they to be

distinguished one from the other; but having its parts similar one to another, and all participating of the figure of the whole; in a word the extrem being found in all its parts, equally distant from the middle, it is exceeding proper to demonstrate the infinite essence, the uniformity, and the justice of God.

BESIDES which, it cannot be denied, but that strength and perpetuity, is more sought after in churches, than in all other fabricks; since they are dedicated to the omnipotent and supreme God; and that in them are preserved the most celebrated and most memorable things of the city. Hence, and for this reason also, it ought to be said, that the round figure, in which there is never an angle, is particularly suited to temples.

TEMPLES ought also to be very capacious, that many people may there be able to assist at divine service. And among all the figures that are terminated by an equal circumference, none is more capacious than the round. Those churches also are very laudable, that are made in the form of a cross, which have their entrance in the part that representing the foot of the cross, and opposite to which should be the principal altar, and the choir; and in the two branches, that are extended from either side like arms, two other entrances, or two other altars; because that being fashioned in the form of the cross, they represent to the eyes of the beholders that wood from which depended our salvation. And of this form, I have made the church of *San. Giorgio Maggiore at Venice.*

TEMPLES ought to have ample portico's, and with larger columns than other fabricks require; and it is proper that they should be great and magnificent (but yet not greater than the bigness of the city requires) and built with large and beautiful proportions. Whereas, for divine worship, in which all magnificence and grandeur is required, they ought to be made with the most beautiful orders of columns, and to each order ought to be given its proper and suitable ornaments. They must be made of the most excellent, and of the most precious matter; that the divinity may be honoured as much as possible, both as well with the form, as matter: and if it were possible, they ought to be so made, that they might have so much beauty, that nothing more beautiful could be imagined; and so disposed in each of their parts, that those who enter there, may be astonished, and remain in a kind of extasy in admiring their grace and beauty.

Of all the colours, none is more proper for churches than white; since the purity of colour, as of the life, is particularly grateful to God. But if they are painted, those pictures will not be proper, which by their signification alienate the mind from the contemplation of divine things, because we ought not in temples to depart from gravity, or those things, that being looked on render our minds more enflamed for divine service, and for good works.

C H A P. III.

Of the aspects of TEMPLES.

BY aspect is understood the first view which a temple exhibits to such as approach it. The most regular and the best understood aspects of temples are seven, concerning which it seemed to me necessary to insert here, what VITRUVIUS says, in the first chapter of the first book, that this part, which, by reason of the little attention paid to antiquity, has been by many reputed difficult, and by few hitherto well understood, may be made easy and clear by what I shall mention of it, and by the designs that are to follow, which may serve as an example of what he teaches us. And I thought it proper to make use also of the names which he does, that they who shall apply themselves to the reading of VITRUVIUS, to which I exhort every one, may therein observe the same names, to the end that they may not seem to read of different things.

To come therefore to our purpose, temples are either made with portico's or without: those that are made without portico's may have three aspects; the one is named *Antis*, that is, fronted with pilasters, because the pilasters are called *Ante*, which are made in the angles or corners of the fabricks. Of the other two, the one is called *Profilos*, that is, fronted with columns; and the other *Amphiprofilos*. That which is called in *Antis*, must have two pilasters in the corners, that turn also on the sides of the temples, and in the middle of the front, between the said pilasters, two columns, must project forward, and sup-
port

port the frontispiece that shall be over the entrance. The other, which is called *Profilos*, must have more than the first, also columns in the corners opposite to the pilasters, and on the right and left in turning the corner, two other columns, that is, one on a side. But if in the part backwards the same disposition of columns is observed, and the frontispiece, then the aspect must be called *Amphiprofilos*.

Of the two first aspects of temples there are not in our days any remains, and therefore there shall be no examples of them in this book; neither did it seem to me necessary to make designs of them, the aspects of each of these being delineated in the plan, and the upright in the Commentary upon VITRUVIUS by Monsignor Reverendissimo BARBARO.

BUT if portico's are made to temples, they are either to be made round the temple, or in the front only. Those that have portico's in the fore front only, it may be said also that they have the aspect called *Profilos*. Those that are made with portico's round them, may be made with four aspects; because they either may be made with six columns in the front and in that backwards, and with eleven columns on each side, computing those in the angles; and this aspect is called *Peripteros*, that is, winged round, and the portico's round the cell come to be as broad as an intercolumniation.

ANTIEN temples are to be seen, that have six columns in the front, and have no portico's round them notwithstanding; but in the walls of the cell, in the part without, there are half columns, which accompany those of the portico, and have the same ornaments; as at *Nismes in Provence*. Of this sort also it may be said, that the temple of the Ionick order in *Rome* is, now the church of *Santa Maria Egiziaca*. These these architects made to make the cell larger, and to avoid expence; the same aspect of the alato round it remaining nevertheless to those who saw the temple in flank. Or if to temples eight columns be put in the front, and fifteen on the sides, with the angular ones; these come to have double portico's round them, and therefore their aspect is called *Dipteros*, that is, double winged.

TEMPLES may also be made, which have like the abovesaid, eight columns in front, and fifteen on the sides; but the portico's round them are not made double, because one order of columns is taken away. Hence these portico's come to be as broad as two intercolumniations, and the thickness of a column, and their aspect is called *Pseudodipteros*, that is, false winged round. This aspect was the invention of HERMOGENES, a very ancient architect, who in this manner made the portico's round the temples broad and convenient, to take off the expence and labour, without taking any thing from the aspect. Or, finally, they are so made, that in each front there be ten columns, and the portico's round them double, as in those that have the aspect *Dipteros*.

THESE temples had in the part within, other portico's with two orders of columns, one above the other, and these columns were less than those without. The roof came from the columns without to those within, and the whole space encompassed by the columns within was uncovered. Hence the aspects of these temples was called *Hipetebros*, that is, uncovered.

THESE temples were dedicated to JUPITER, as patron of heaven, and of the air. And in the middle of the court the altar was placed. Of this sort I believe the temple was, of which some small vestigia are to be seen upon *Monte Cavallo at Rome*; and that it was dedicated to JUPITER QUIRINALIS, and built by the emperors: because in VITRUVIUS's time (as he says) there was none.

CHAP. IV.

Of the five kinds of TEMPLES.

THE antients used (as has been before said) to make portico's to their temples, for the conveniency of the people, that they might have where to entertain one another, and to walk in without the cell, in which the sacrifices were offered, and to give greater majesty and grandeur to those fabricks. Hence, because the intervals that are between one column and the other, may be made of five sizes, according to these five kinds or manners of temples, that VITRUVIUS distinguishes: the names of which are *Picnostilos*, that is, thick
with

with columns; *Sifilos*, wider; *Diafilos*, still wider; *Arcofilos*, wider than is convenient; and *Eufilos*, which has reasonable and convenient intervals: of all which intercolumniations, how they be, and what proportions they ought to have, with the length of the columns, has been mentioned before in the first book, and the designs of them inserted.

IT is not necessary therefore to say here any thing more, than that the four first manners are defective. The two first, because the intercolumniations being but of one diameter and an half, or of two diameters of a column, are very little and narrow, (hence two persons a breast cannot enter into the portico's, but are obliged to go one behind the other,) and because the doors and their ornaments cannot be seen at a distance: and, finally, because that by the straitness of the spaces, walking round the temple is hindered. These two manners are nevertheless tolerable when the columns are made large, as may be seen in almost all the ancient temples.

THE third, as three diameters of a column can be put between the columns, the intercolumniations come to be very wide: hence the architraves split, by reason of the greatness of the spaces. But one may provide against this defect, by making over the architrave, in the height of the frieze, arches, or *remenati*, that support the weight, and leave the architrave free.

THE fourth manner, although not subject to the defect of the abovementioned, because architraves of stone, or of marble, are not made use of, but that over the columns beams of timber are put; one may nevertheless say that it is also defective, because it is low, and wide, and mean, and is properly of the Tuscan order; so that the most beautiful and the most elegant manner of temples is that which is called *Eufilos*, which is when the intercolumniations are of two diameters and a quarter of a column; because it serves exceedingly well for use, beauty and strength.

I HAVE called the manners of temples by the same names that *VITRUVIUS* makes use of, as I have also the aspects, not only for the abovementioned reason, but also because those names have already been received in our language, and that they are understood by every body, I shall therefore make use of them in the designs of the temples that shall follow.

CHAP. V.

Of the Compartments of TEMPLES.

ALTHOUGH in all fabricks it is requisite, that their parts should correspond together, and have such proportions, that there may be none whereby the whole cannot be measured, and likewise all the other parts; this however ought to be observed in temples with the utmost care, because they are consecrated to divinity, for the honour and reverence whereof one ought to work as beautifully and exquisitely as is possible. As therefore the round and quadrangular are the most regular forms for temples, I shall mention how each of these ought to be comparted; and shall also insert some things belonging to temples that we Christians make use of.

ROUND temples were antiently made, sometimes open, that is, without a cell, with columns that supported the cupola, like those that were dedicated to *JUNO LACINIA*; in the middle of which the altar was placed, and upon which the fire was never extinguished. These are comparted in this manner: the diameter of the whole space is so divided, that the temple is to take up three equal parts; one is given to the steps, that is, to the ascent to the floor of the temple, and two remain to the temple and the columns, which are placed upon pedestals, and are as high with the base and capital, as the diameter of the lesser course of steps, and the tenth part of their height in thickness.

THE architrave, the frieze, and the other ornaments, are to be made as well in this, as in all the other temples, according to what was said in the first book. But those that are made close; that is, with a cell, are either made with wings round them, or with one portico only in the front. Of those that have wings round them, the rules are these; in the first place, two steps are to be made round them, and upon them the pedestals are to be placed, on which the columns stand; the wings are as broad as the fifth

part of the diameter of the temple, taking the diameter in the part within the pedestals. The columns are as long as the cell is broad, and are the tenth part of their length in thickness.

THE tribuna, or cupola, must be raised above the architrave, frize, and cornice of the wings, one half of the whole work. Thus VITRUVIUS compares the round temples.

IN antient temples however there are no pedestals to be seen, but the columns begin from the floor of the temple: which pleases me much better, not only because the pedestal obstructs the entrance very much; as also because the columns, which begin from the ground, add more grandeur and magnificence. But if in round temples the portico is to be placed in the front only, then it must be made as long as the breadth of the cell, or an eighth part less, and may also be made shorter; but yet it must not be shorter than three quarters of the breadth of the temple, nor must it be made wider than the third part of its length.

IN quadrangular temples the portico's in the front must be made as long as the breadth of these temples. And if they are to be after the manner Eustilos, which is both beautiful and elegant, then they are to be thus comparted. If the aspect is to be made with four columns, all the front of the temple (excepting the projection of the bases of the columns, which are in the angles) must be divided into eleven parts and an half, and one of these parts shall be called a module, that is, a measure, with which all the other parts must be measured; because that by making the columns a module in thickness, four must be given to them, three to the intercolumniations in the middle, and four and a half to the other two intercolumniations, that is, two and a quarter each. If the front is to be of six columns, then it must be divided into eighteen parts; if of eight, into twenty four and an half; and if of ten, into thirty one: always giving of these parts one to the thickness of the columns, three to the void in the middle, and two and a quarter to each of the other voids. The height of the columns must be according to what they shall be, whether Ionick or Corinthian.

How the aspects of the other manners of temples ought to be regulated, that is, of Pseudostilos, Sestilos, Diastilos, and Arcofilos, has been fully set down in the first book, when we treated of intercolumniations.

BEYOND the portico one finds the anti-temple, and then the cell. The breadth is divided into four parts; eight of which are given to the length of the temple, and five of these eight are given to the length of the cell, including the walls, in which are the doors; and the other three remaining are for the anti-temple, which has on the sides two wings of wall, continued to the walls of the cell, in the ends of which are made two anti, that is, two pilasters as thick as the columns of the portico. And because it may happen that between these wings there may be, either little or much space, if the breadth be greater than twenty foot, between the said pilasters two columns may be put, and more also according as necessity shall require, directly opposite to the columns of the portico; the use of which will be to separate the anti-temple from the portico; and those three or more voids, which shall be between the pilasters, must be closed up with wood, or with marble parapets, leaving however the openings through which one may enter into the anti-temple. If the breadth be more than forty foot, other columns must be put in the part within, opposite to them, that shall have been put between the pilasters, and must be made of the same height of those without, but somewhat smaller, because the open air will lessen the thickness of those without, and the inclosed will not permit the smallness to be discerned of those within, and so they will appear equal.

AND altho' the said compartment answers exactly in temples of four columns, the same proportion and manner nevertheless do not suit the other aspects; because it is necessary that the walls of the cell should meet with the columns without, and be in a line. Hence the cells of these temples will be somewhat larger than what has been mentioned.

THUS the antients comparted their temples, as VITRUVIUS teacheth us, and were willing that a portico should be made, under which in bad weather men might avoid the sun, the rain, the hail, and the snow; and on solemn days be amused until the hour of sacrifice came on: but we, by omitting the portico's round the temples, build them very like basilica's, in which, as it has been said, portico's were made in the part within, as we now do in temples. Which happened, because the first who, enlightened by truth, gave themselves up to our religion, were accustomed, for fear of the Gentiles, to assemble in the basilica's of

private men: whence seeing that this form succeeded very well, because the altar was placed, with great dignity, in the place of the tribunal, and the choir stood very conveniently round the altar, and the remaining part was free for the people, it has not been altered since. And therefore in the compartment of the wings that we make in temples, what has been said, when we treated of basilica's, must be observed.

To our churches is joined a place separate from the remainder of the temple, which we call the sacristy; where are kept the sacerdotal vestments, the vessels, the sacred books, and the other things necessary for divine service, and here the priests dress themselves. Near to it are towers built, in which bells are hung to call the people to the divine offices, which are not made use of by any but christians. Near the temple the habitations for the priests are made; which ought to be commodious, with spacious cloisters, and fine gardens; and particularly the places for the sacred virgins ought to be secure, high, remote from noise, and from the sight of the people.

It is sufficient to have said thus much concerning the decorum, the aspects, the manners, and the compartments of temples, I shall insert now the designs of many ancient temples, in which I shall observe this order. First, I shall put the designs of the temples that are at *Rome*; afterwards those that are out of *Rome*; in other parts of *Italy*; lastly, those that are out of *Italy*. And for the sake of being better understood, and to avoid being tedious, and fatiguing to the readers, was I minutely to mention the measures of every part, I have marked them all with figures in the designs.

THE *Vicentine* foot, with which all the following temples have been measured, is in the second book, Page 39.

THE whole foot is divided into twelve inches, and each inch into four minutes.

CHAP. VI.

Of the designs of some ancient TEMPLES that are at Rome; and, first, of that of PEACE.

WE shall, for the sake of good omen, begin with the designs of the temple formerly dedicated to *PEACE*, of which the vestigia are to be seen near the church of *Santa Maria Nuova*, in the *Via Sacra*: and writers say, that it is in the same place where the *Curia* of *ROMULUS*, and *Hesilia* was first; then the house of *MENIUS*, the *Basilica Portia*, and the house of *CÆSAR*, and the portico that *AUGUSTUS* (after pulling down the said house of *CÆSAR*, which he thought too large and sumptuous an edifice) built, calling it after the name of *LIVIA DRUSILLA* his wife.

THIS temple was begun by the emperor *CLAUDIUS*, and finished by *VESPASIAN* after he returned victorious from *Judea*, in which he preserved all the vessels, and ornaments (which he carried in his triumph) of the temple of *Jerusalem*. One reads, that this temple was the greatest, the most magnificent, and the richest of the city; and certainly its vestigia, ruinous as they are, represent so much grandeur, that one may very well judge what it was when whole.

BEFORE the entrance there was a loggia of three spaces, made of brick; and the remainder was a continued wall equal to the breadth of the front. In the pilasters of the arches of the loggia in the part without, there were columns placed for ornament, the order of which followed also in the wall continued. Over this first loggia there was another uncovered, with its poggio; and directly over each column there must have been a statue. In the part within the temple there were eight marble columns of the Corinthian order, five foot four inches thick, and fifty three foot long, with the base and capital. The architrave, the frieze, and the cornice were ten foot and an half, and supported the vault of the middle nave. The base of these columns was higher than half the diameter of the column, and had the orlo thicker than the third part of its height; which they perhaps thus made, supposing that it thus would support the weight that was put upon them the better. Its projection was the sixth part diameter of the column. The architrave, the frieze, and the cornice, were carved with very beautiful inventions. The cimacium of the architrave is worthy of attention, being different from the others, and very gracefully made. The cornice has modillions instead of a goccio-
latio.

latio. The cafes of the rofes that are between the mogdilions are fquare; and they ought fo to be made, as I have obferved they are in all the ancient edifices.

WRITERS fay that this temple was burnt in the time of the emperor COMMODUS; but I can't fee how that can be fo, there not being the leaf in it wood. But it might eafily happen that it has been ruined by earthquakes, or fome other fuch accident, and afterwards reftored at fome other time, when what related to architecture was not fo well underftood as it was in the time of VESPASIAN. What makes me believe this, is becaufe the fculptures are not fo well made, or worked with that diligence that one obferves in thofe which are in the arch of TITUS, and of other edifices that were made in good times. The walls of this temple were adorned with ftatues, and with pictures, and all the vaults were made with a compartment of ftucco, neither was there any part but what was highly adorned. Of this temple I have made three draughts.

IN the firft the plan is designed.

Plate 1.

IN the fecond the upright of the outward part, of the part within, of the front, and of Plate 2. the inward part of the flank.

IN the third are the particular members.

Plate 3.

A, the bafe	} of the columns that fupport the middle nave.
B, the capital	
C, architrave, frize and cornice	
D, the compartment of ftucco made in the vaults.	

CHAP. VII.

Of the temple of MARS, the Avenger.

NEAR the tower of the *Cont's* the ruins are to be feen of the temple built formerly by AUGUSTUS to MARS the *Avenger*, to fulfil a vow he made, (when being together with MARK ANTONY at *Pharfalia*, againft BRUTUS and CASSIUS) to revenge the death of CÆSAR, he engaged and overcame them.

By thofe parts that remain, one comprehends that this was a moft adorned and marvellous edifice; and the forum that was before it muft have made it much more admirable, into which, one reads, thofe that returned into the city, conquerors and triumphant, carried the enfigns of the triumph and victory; and that AUGUSTUS, in its moft beautiful part placed two pictures, in which were represented the manner of giving battle, and triumphing; and two other pictures done by the hand of APOLLO, in one of which there were CASTOR and POLLUX, the goddeffs of VICTORY, and ALEXANDER the great; in the other a representation of a battle, and an ALEXANDER. There were two portico's, in which AUGUSTUS dedicated the ftatues of all thofe who returned triumphant to Rome.

OF this forum there are not any veftiges to be feen, unlefs thofe wings of wall, which are on the fides of the temple, fhould perhaps be part of it; which is very likely, from the many places for ftatues that are therein.

THE afpect of the temple is *alato a torno*, which we before have called, from VITRUVIUS, *peripteros*. And becaufe the breadth of the cell exceeds twenty foot, and there are columns placed between the two anti, or pilafters of the anti-temple oppofite to thofe of the portico, as has been before faid ought to be done in the like cafe, the portico is not continued round the temple: and alfo in the wings of the walls joined from one fide to the other, the fame order is not obferved in the part without, although all the parts correpond within. Hence one comprehends, that behind, and on one fide, there muft have been the publick ftreet; and that AUGUSTUS was willing to accommodate himfelf to the fite, not to incommode, nor take away the neighbouring houfes from their owners.

THE manner of this temple is the picnoftilos. The portico's are as large as the intercolumniations. In the part within, that is, in the cell, there is not the leaf mark or veftigium to be feen, neither is there any thing in the wall, whence it may pofitively be faid that there were either ornaments or tabernacles; however, as it is very likely that fome there were,

were, I have made them of my own invention. The columns of the portico's are of Corinthian work. The capitals are wrought in the manner of olive leaves. They have the abaco much larger than what is usually seen in others of the same order, regarding the bigness of the whole capital. The first leaves may be seen to swell a little in the place where they come forth, which gives them a good grace. These have very beautiful soffits, or what we call cielings, therefore I have made their profile and their aspect in a plan. Round this temple there were very high walls of peperino, which in the part without were of Rustick work; and in that within, they had many tabernacles, and places to place statues in.

AND that the whole might be perfectly seen, I have made seven plates of it.

Plate 4. IN the first there is all the plan in a small form; and all the elevation of as much as is to be seen of this edifice, as well in the part without, as in that within.

Plate 5. IN the second there is the upright of the flank of the portico, and of the cell.

Plate 7. IN the third there is the upright of half the front, with part of the walls that are on the sides of the temple.

Plate 6. IN the fourth there is the upright of the inward part of the portico, and of the cell, with the ornaments which I have added to it.

Plate 9. IN the fifth are the ornaments of the portico.

G, the capital.

H, the architrave, frieze and cornice.

I, the cielings of the portico, that is, the soffits.

Plate 8. IN the sixth, is designed the soffit of the portico, and how it turns in the anti, or pilasters of the anti-temple.

M, the soffit of the architrave between the columns.

Plate 10. IN the seventh are the other members.

A, the base of the columns of the portico, which also continues in the wall round the temple.

B, the cauriola, from which begin the divisions of the squares made for an ornament in the wall under the portico's.

C, the plan of the columns placed for the ornament of the tabernacles in the cell.

D, the base.

E, is the capital.

WHICH ornaments in the inside have been added by me, taken from some antient fragments found near this temple.

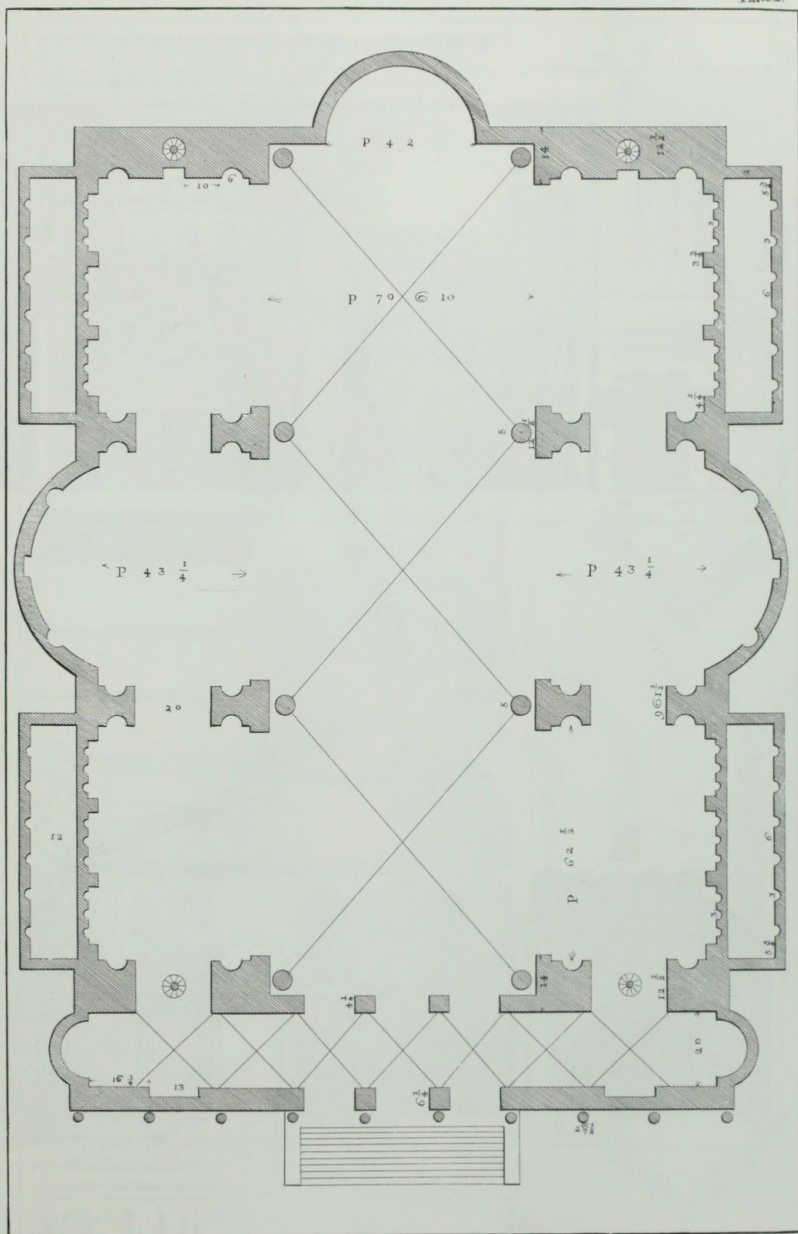
F, is the cornice that is seen in the wings of the walls, that form a piazza on the sides of the temple.

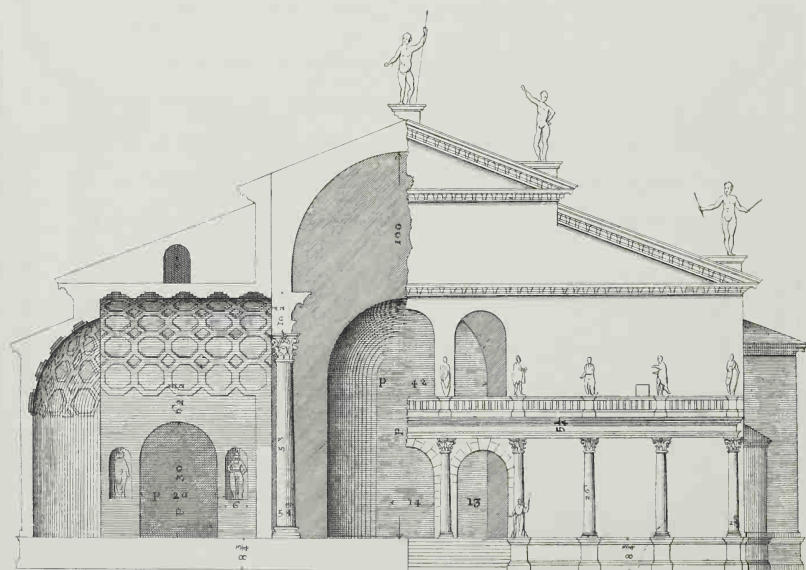
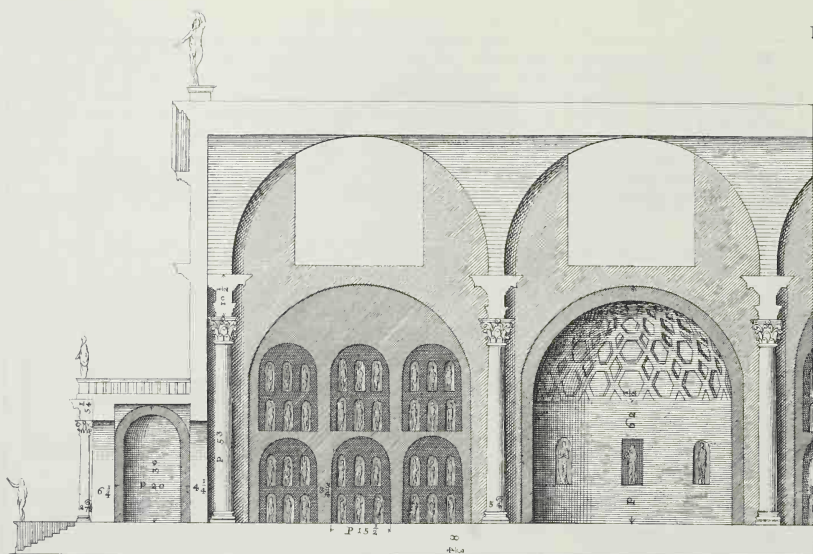
CHAP. VIII.

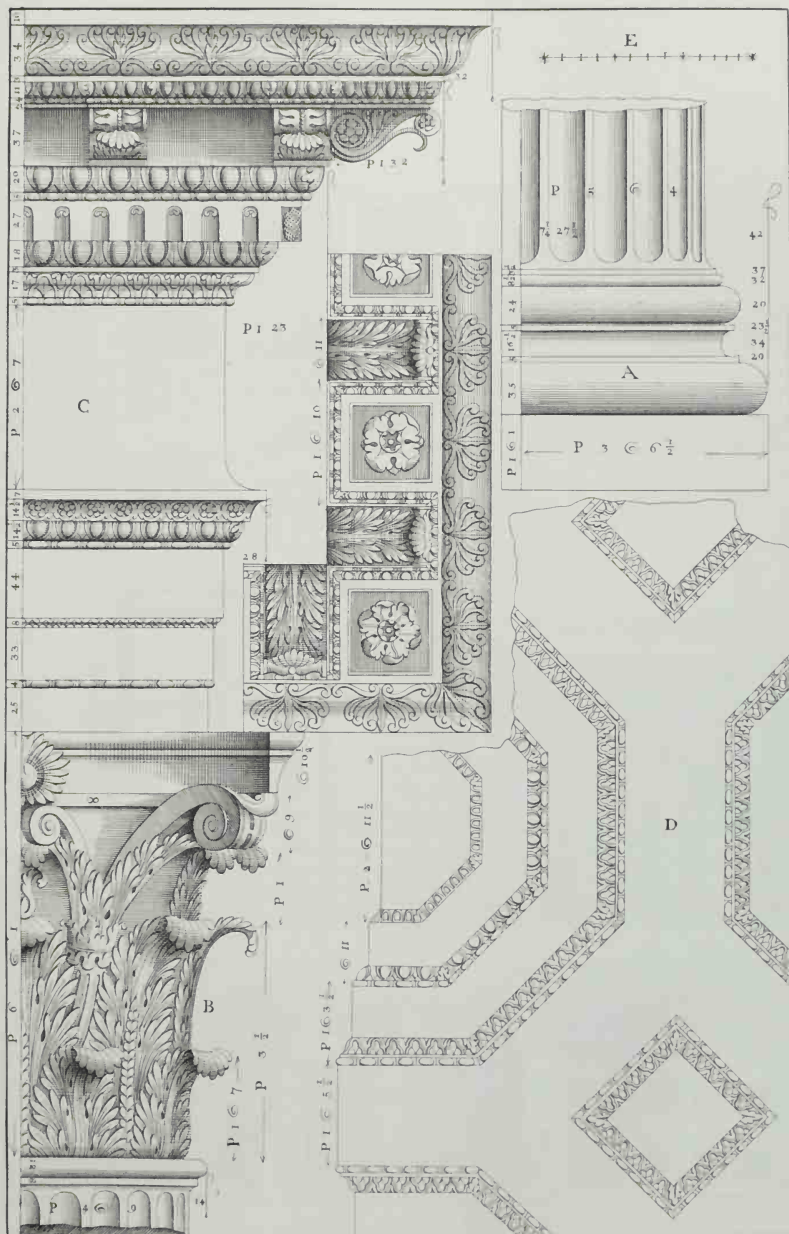
Of the temple of NERVA TRAJANUS.

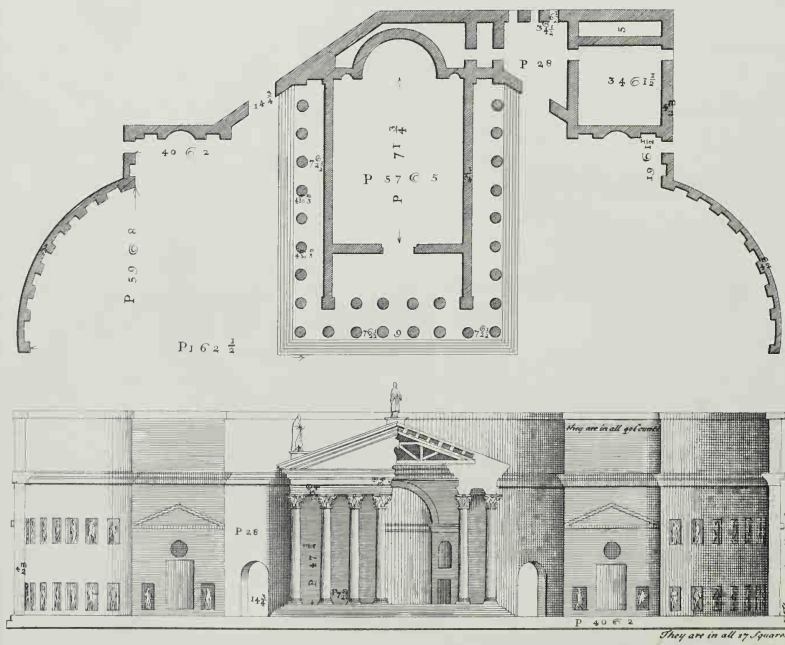
NEAR the said temple built by AUGUSTUS, the vestigia are to be seen of the temple of NERVA TRAJANUS, the aspect of which is the protilos; its manner is thick of columns. The portico, together with the cell, is in length somewhat less than two squares.

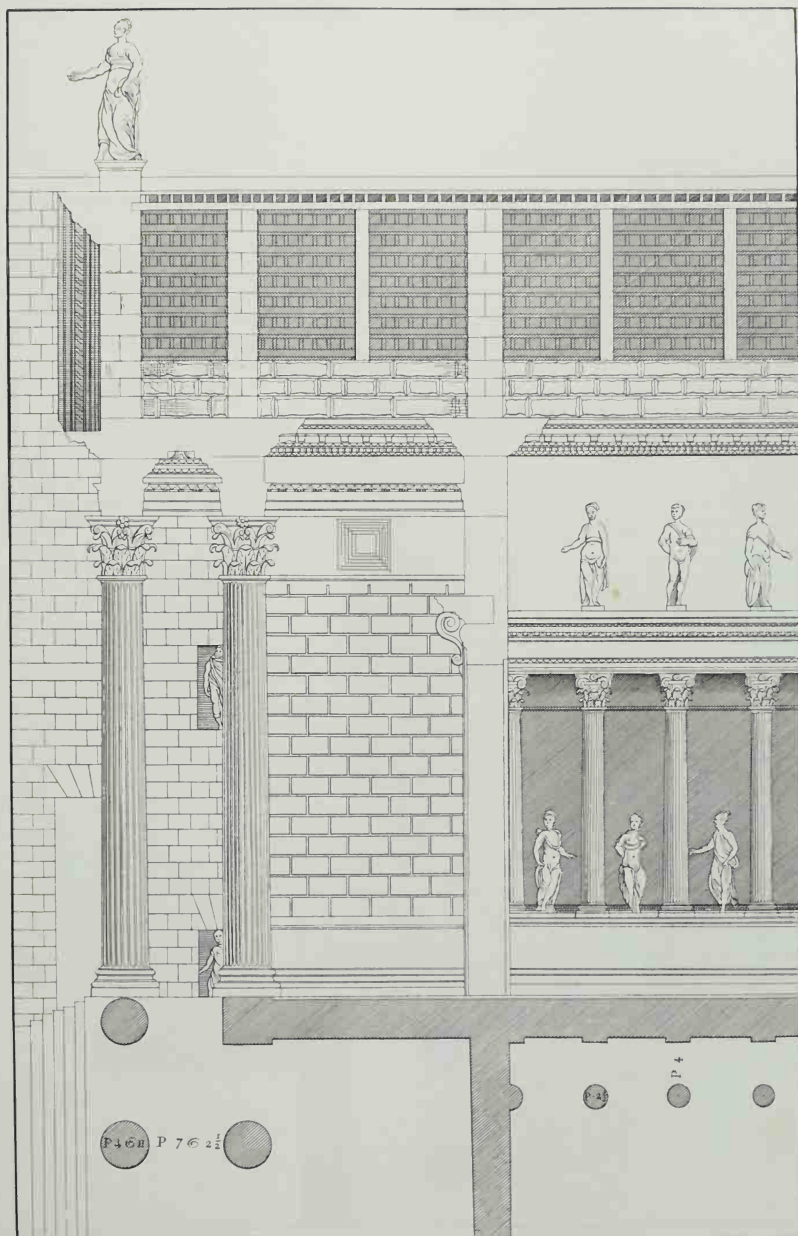
THE floor of this temple is raised from the ground with a basement that goes round the whole fabrick, and forms the sides of the stairs by which one ascends to the portico. In the



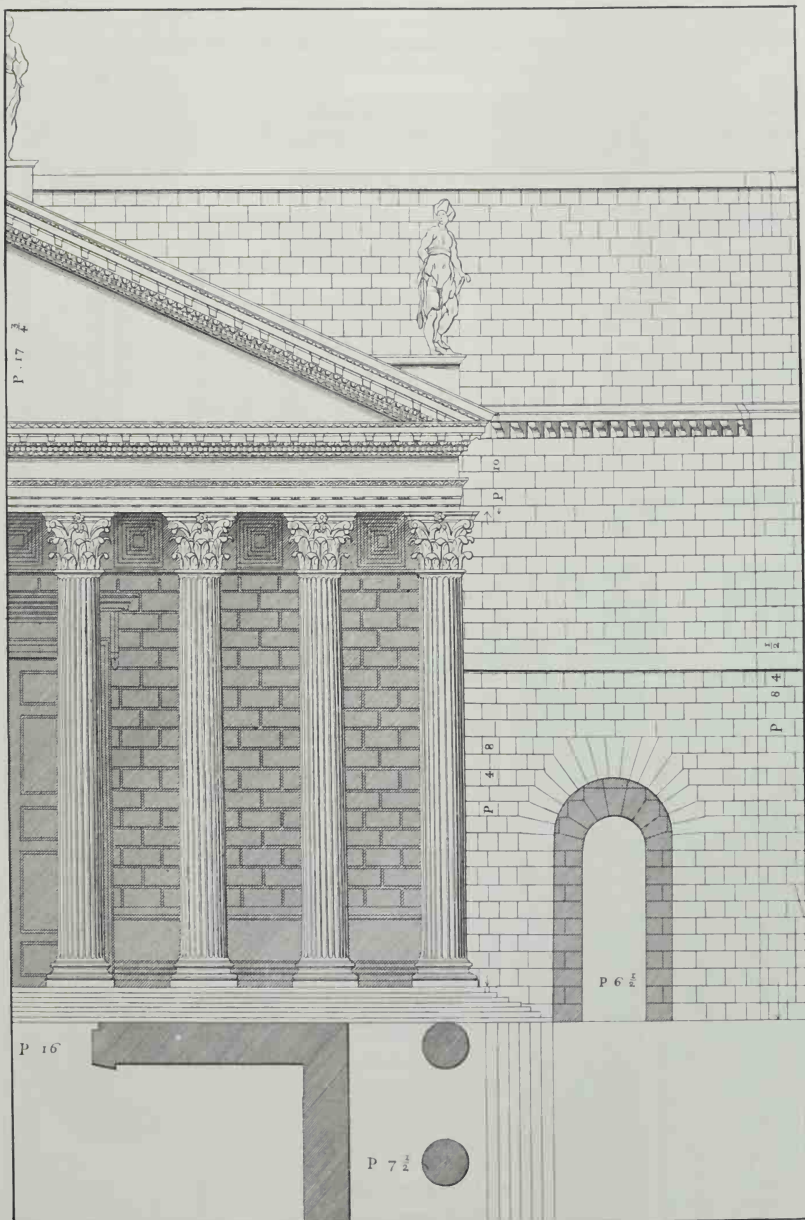


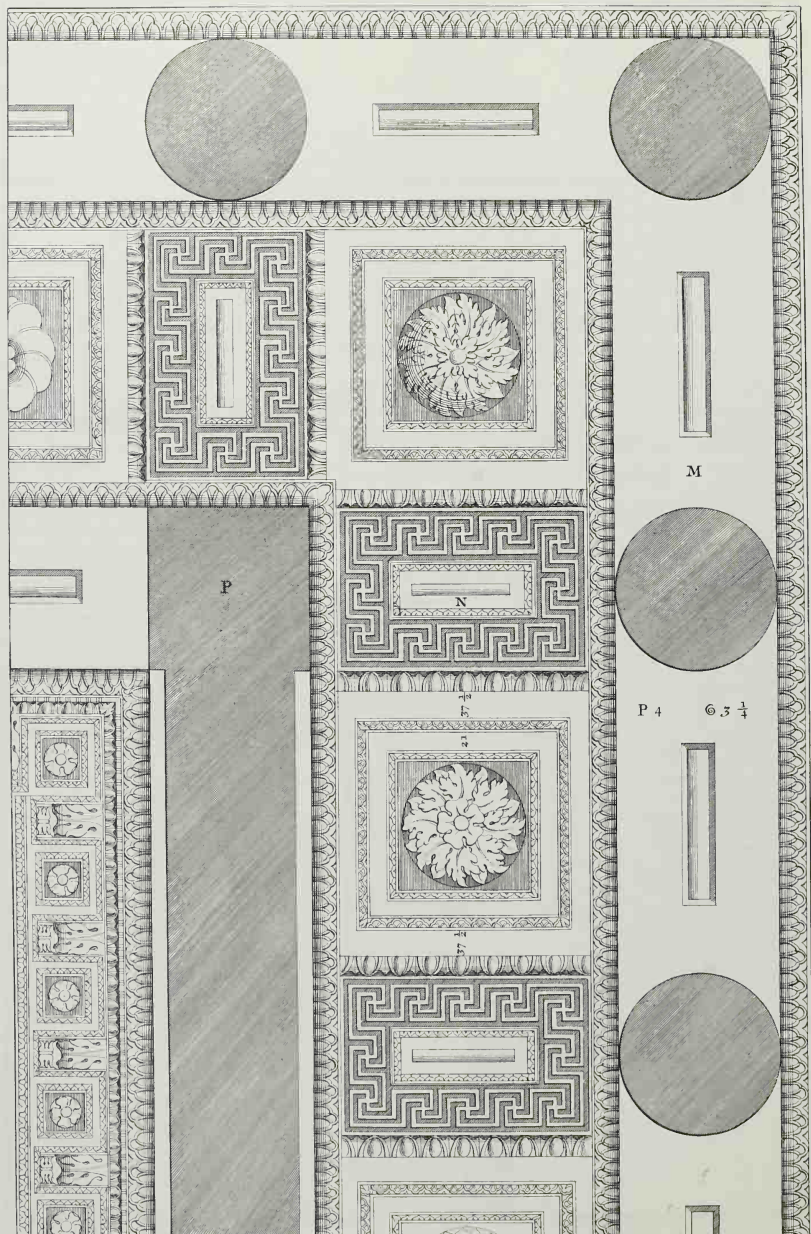














the extrem parts of those sides there are two statues, that is, one on each head of the bafement.

THE bafe of the columns is Attick, different in this from what VITRUVIUS teaches, and from what I have faid in the firft book, that there are in it two tondino's more, the one under the cavetto, and the other under the cimbia.

THE tongues of the capital are carved in the form of olive leaves, and those leaves are difpofed by fives, as are the fingers in the hands of men. I have obferved, that all the ancient capitals are made in this manner, and fucceed better, and have more grace than those in which the faid leaves are made by fours.

IN the architrave are very beautiful carved works, intaglio's, that divide one fascia from the other; and these intaglio's, and these divisions are on the sides of the temple only, because the architrave in the front, and the frize were made all even, that the infcription might conveniently be put there; of which these few letters are still to be seen, although jagged and fpoilt by time.

IMPEATOR NERVA CAESAR AVG. PONT. MAX.

TRIB. POT. II. IMPERATOR II. PROCOS.

THE cornice is very well carved, and has very beautiful, and very convenient projections. The architrave, the frize, and the cornice are, all together, the fourth part of the length of the columns. The walls are made of peperino, and were coated with marble. In the cell along the wall I have put tabernacles with statues, as by the ruins it should seem there have been.

BEFORE this temple there was a piazza, in the middle of which the statue of the faid emperor was placed: And writers say, that so many and so wonderful were its ornaments, that they astonished those that beheld them, as not thinking them the work of men, but of giants.

HENCE the emperor CONSTANTIUS when he came first to *Rome*, was struck with the rare structure of this edifice; then turning to his architect, faid, that he would in *Conftantinople* make a horse like that of NERVA, to his own memory. To whom ORMISIDA answered (so was that architect's name) that it was first necessary to make him such another stable, shewing him this piazza.

THE columns that are round it have no pedestals, but rise from the ground; and it was very reasonable, that the temple should be more eminent than the other parts. These are also of Corinthian work. And upon the cornice directly over them there were small pilasters, upon which statues must have been placed. Nor must any body wonder, that I have put such a number of statues in these edifices, because one reads that there were in *Rome* so many, that they seemed there a second people.

OF this edifice I have made six plates.

IN the first is half the front of the temple.

Plate 12.

T, the entrance that is on the flank of it.

IN the second is the elevation of the part within, and near it is the plan of the temple, Plate 11. and of the piazza together.

S, is the place where the statue of TRAJAN was.

IN the third is the upright of the flank of the portico; and by the intercolumniations Plate 13. may be seen the orders of the columns that were round the piazza.

IN the fourth there is the half front of the piazza opposite to the temple.

Plate 14.

IN the fifth are the ornaments of the portico of the temple.

Plate 15.

A, *the basement of the whole fabrick.*
 B, *the base.*
 C, *the architrave.*
 D, *the frize.*

E, *the cornice.*
 F, *the soffit of the architrave between the columns.*

Plate 16. IN the sixth are the ornaments that were round the piazza.

G, *the base.*
 H, *the architrave.*
 I, *the frize, which was carved with figures in basso relievo.*
 K, *the cornice.*

L, *the small pilasters, upon which statues were placed.*
 M, *the ornaments of the square doors, that were in the front of the piazza, opposite to the portico of the temple.*

CHAP. IX.

Of the temple of ANTONINUS and of FAUSTINA.

NEAR to the abovementioned temple of PEACE, is to be seen the temple of ANTONINUS, and of FAUSTINA. Hence it is the opinion of some, that ANTONINUS was by the antients placed in the number of their gods, since he had a temple, and had Salian priests, and Antonine priests.

THE front of this temple is made with columns. Its manner is the picrostilos. The floor or pavement of the temple is raised from the ground the third part of the height of the columns of the portico; and to that one ascends by steps, to which the two basements that continue with their order round the whole temple, make the sides. The base of these basements is thicker than half of the cimacia, and is made more plain, and thus I have observed the antients made all such basements, and also in the pedestals that are placed under the columns, with much reason, since, all the parts of fabricks the nearer they are to the ground, so much the more solid they ought to be. In the extreame part of these, directly over the angular columns of the portico, there were two statues, that is, upon each head of the basement one. The base of the columns is Attick. The capital is carved in the manner of olive leaves. The architrave, the frize, and the cornice, are the fourth and one third of the said fourth part of the height of the columns.

IN the architrave are also read these words:

DIVO ANTONINO ET

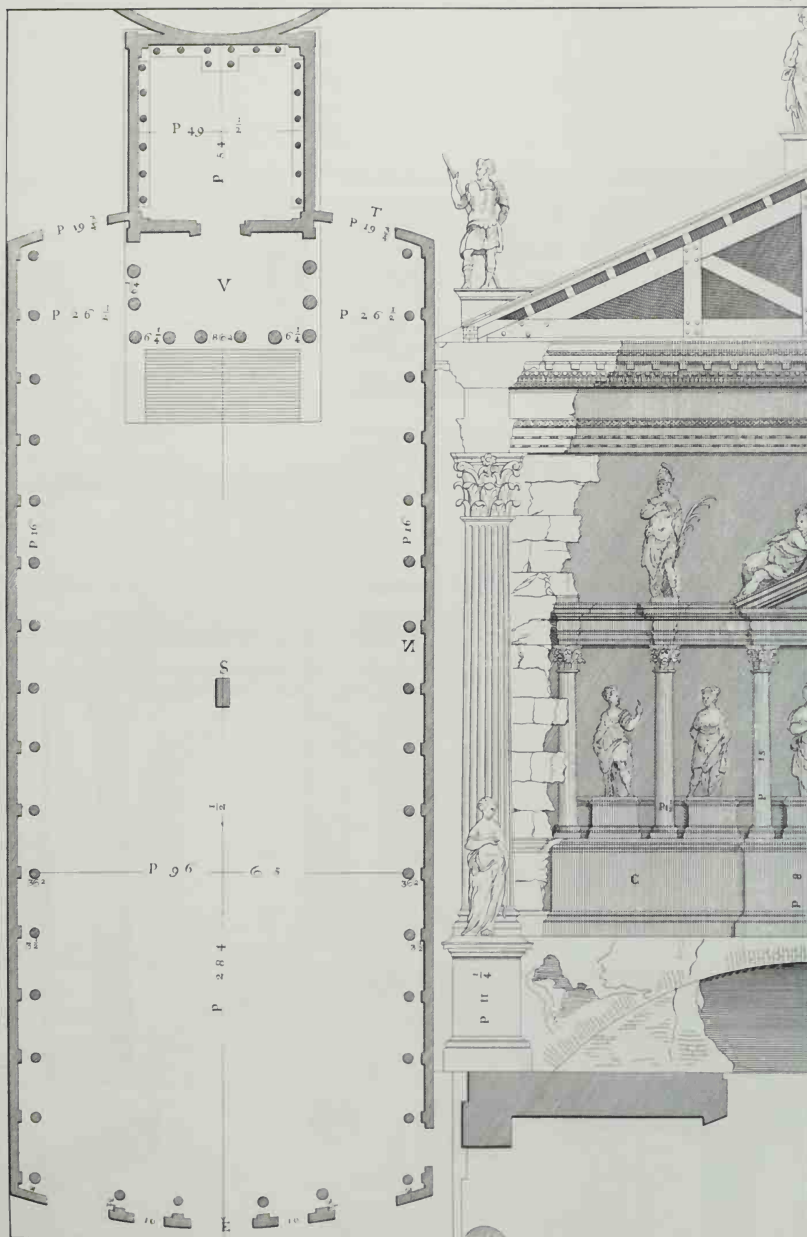
DIVAE FAVSTINAE EXS. C.

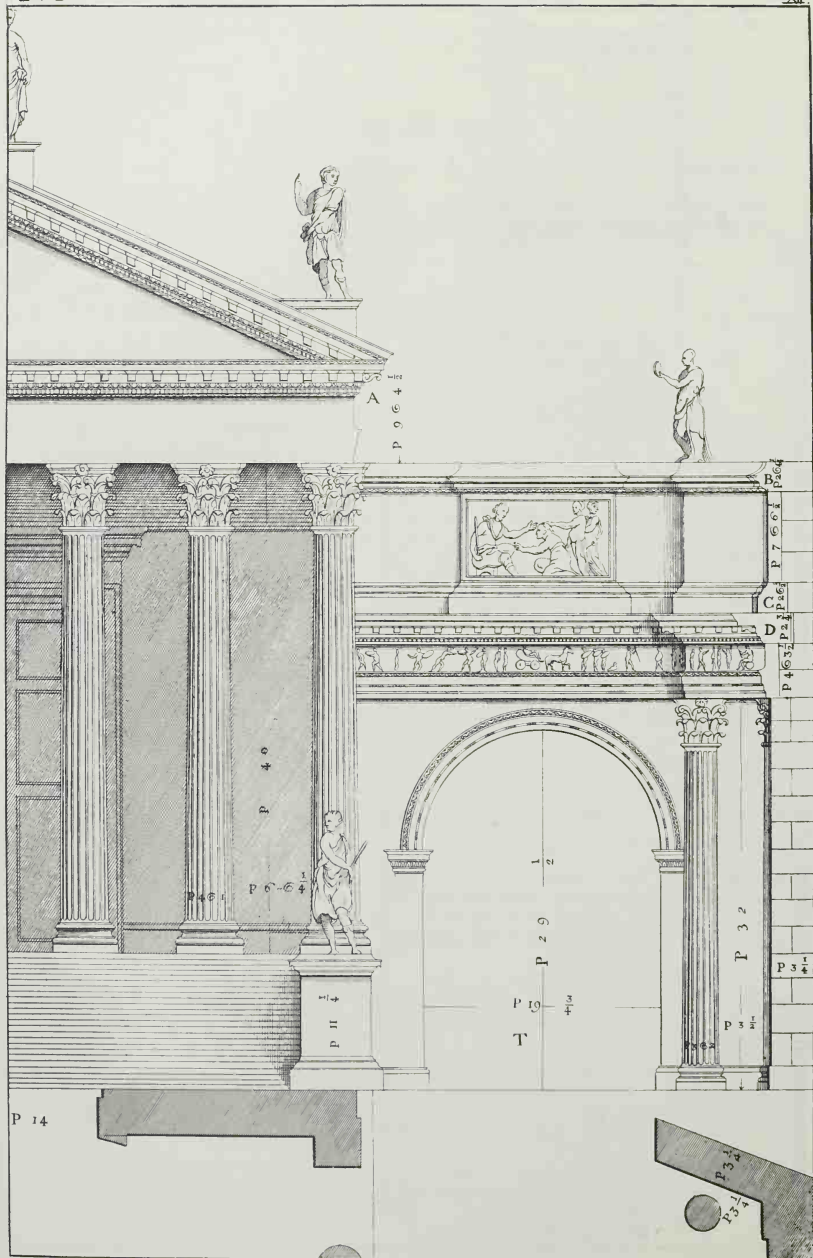
IN the frize there are grifons carved, which face each other, and put their fore-feet upon candlesticks, after the same form, as those made use of in sacrifices. The cornice has not a hollow dentello, and is without modillions; but it has between the dentello, and the gocciolato a very large ovolo.

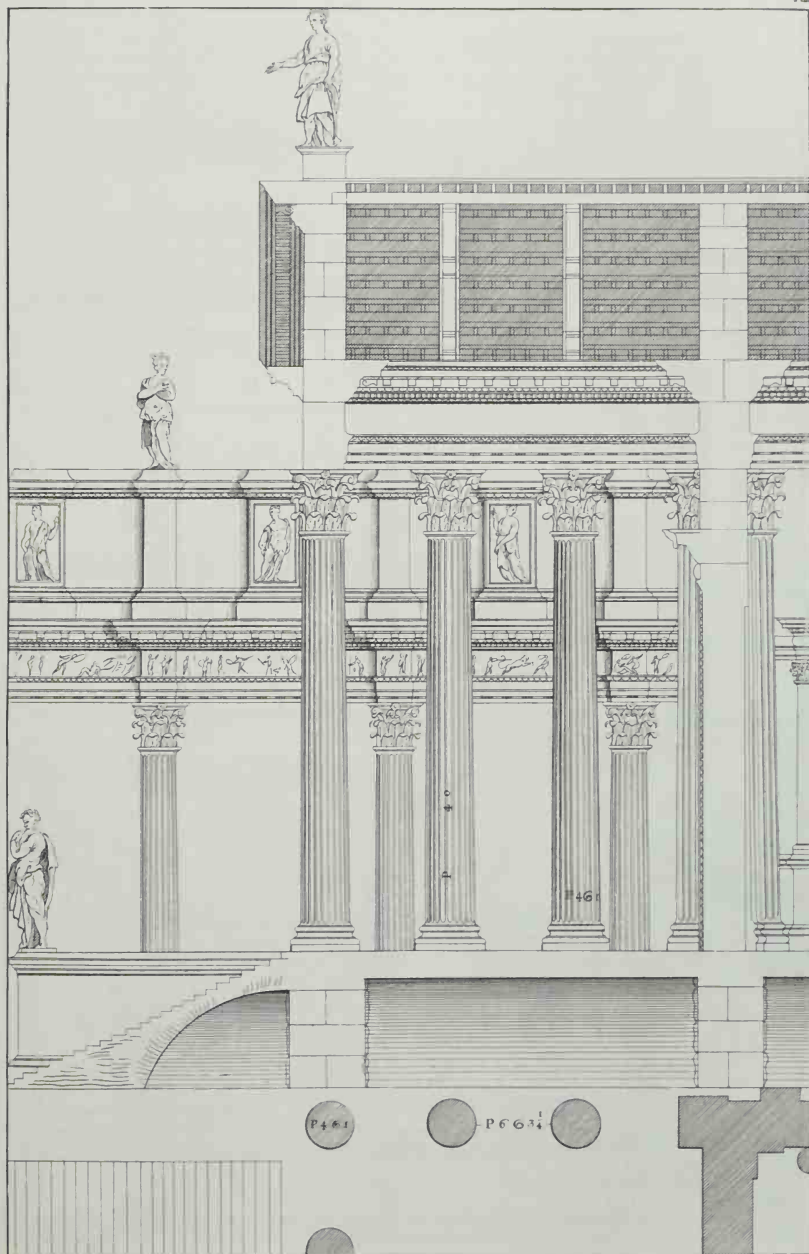
ONE cannot discover that, in the inside of the temple, there were any ornaments; but I am apt to believe, the magnificence of those emperors being considered, that there must have been some, and therefore I have put statues.

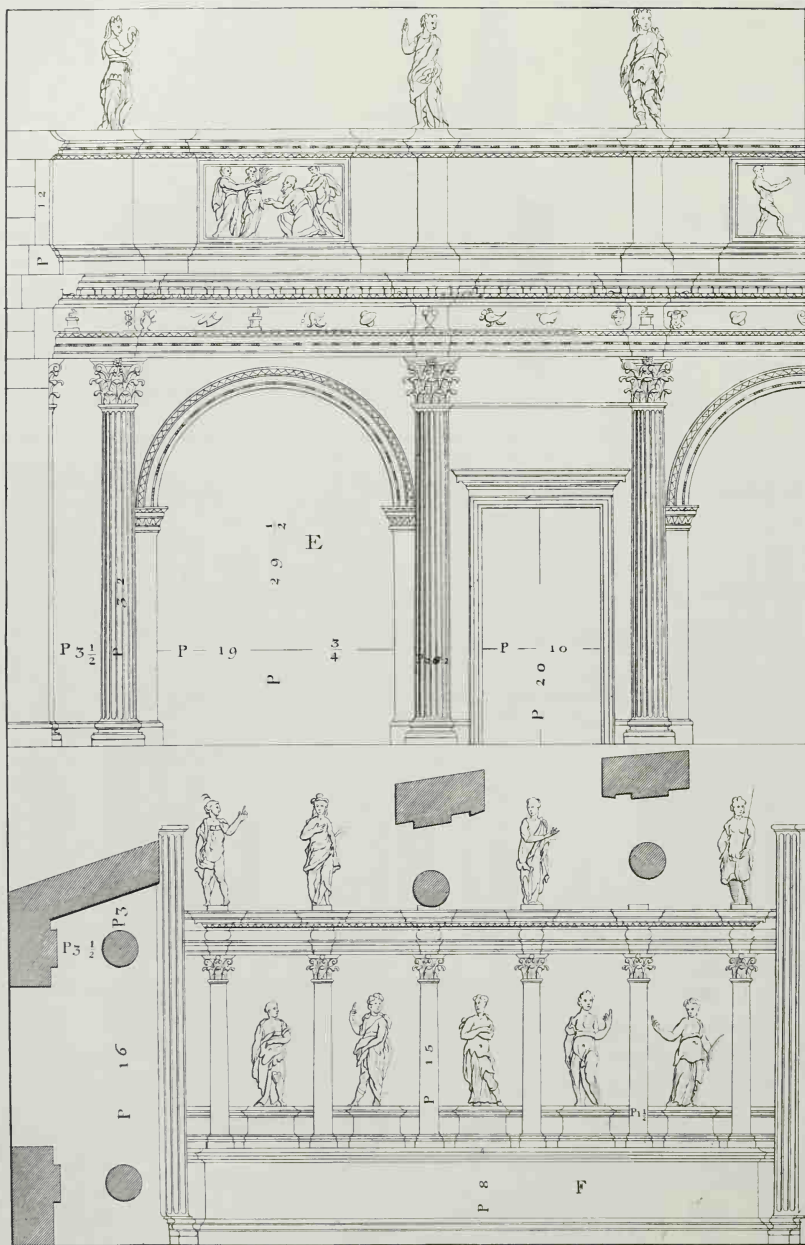
THIS temple had a court before it, which was made of peperino. In its entrance opposite to the portico of the temple, there were very beautiful arches, and every where round it there were columns, and a great many ornaments, of which the least vestigium is not at present to be seen. Being in Rome, I saw a part of it demolished, that was then standing.

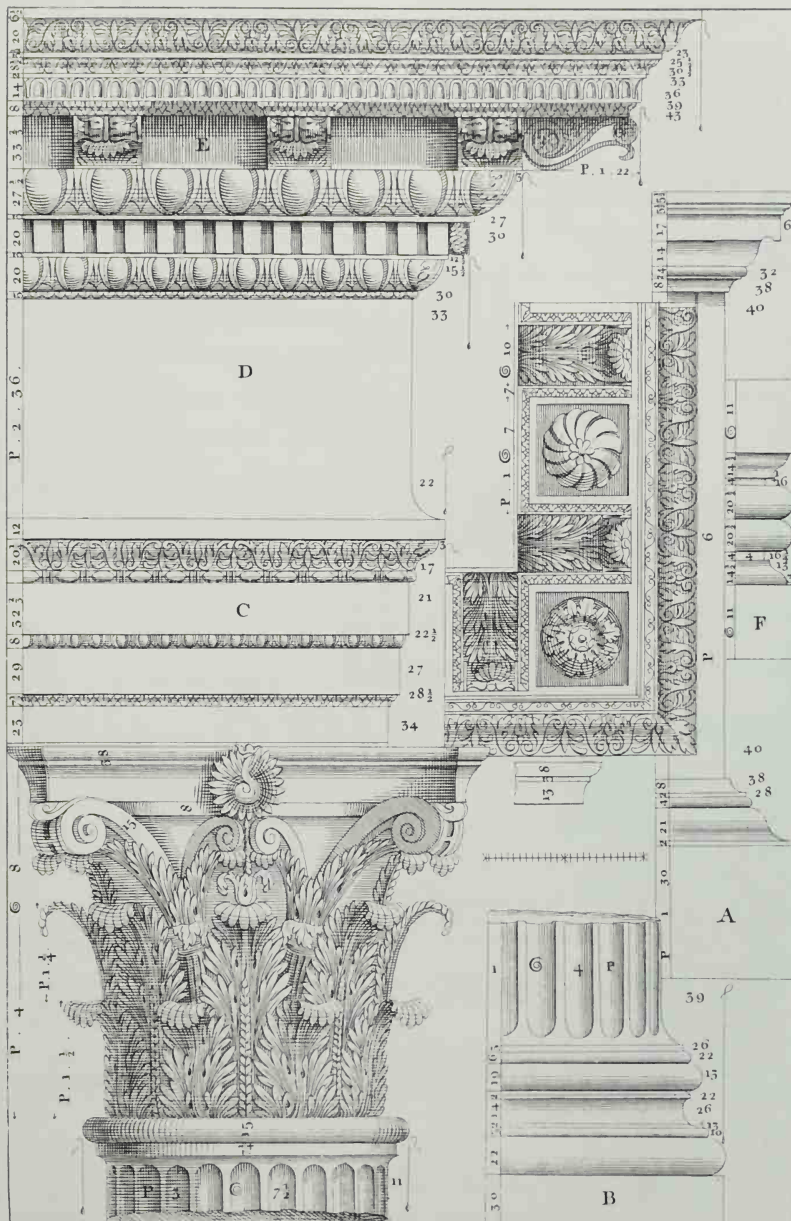
ON the sides of the temple there are two other open entrances, which were without arches. In the middle of this court there was the statue of ANTONINUS on horseback, of bronzo, which is now in the piazza of Campidoglio.

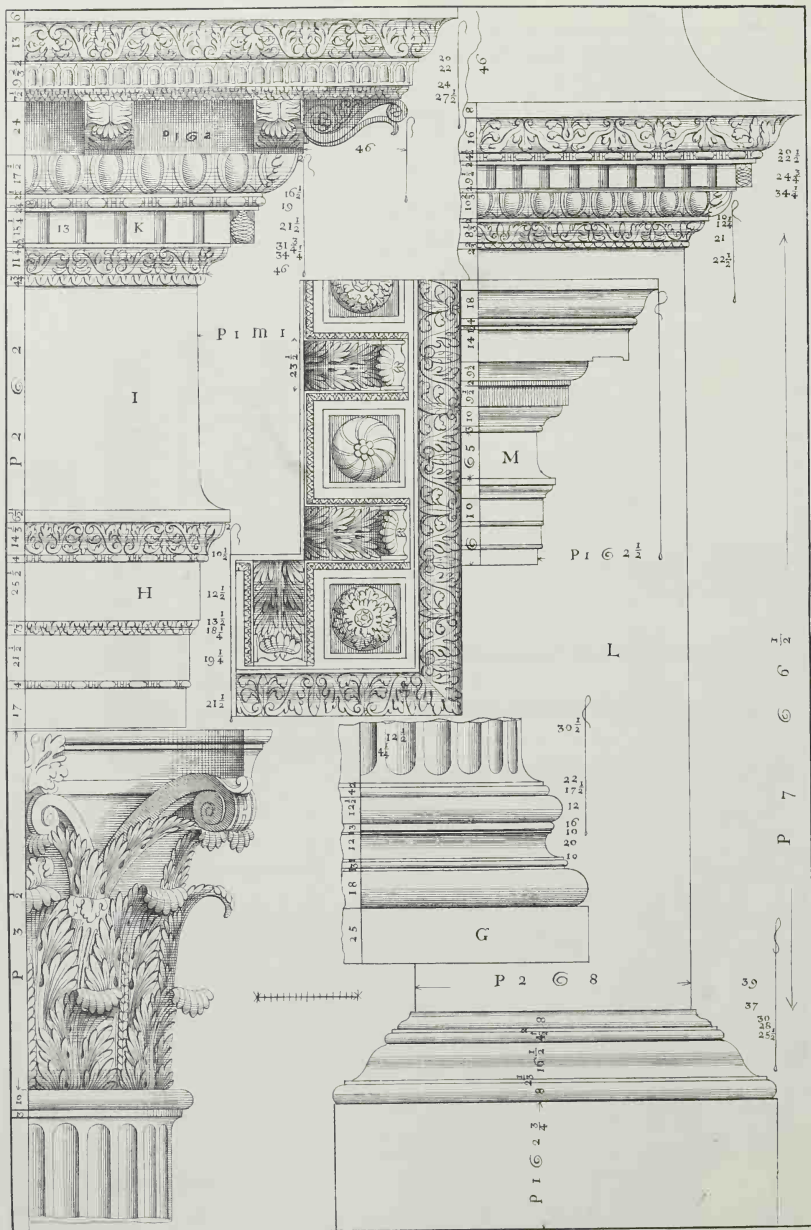












I HAVE made five plates of this temple.

IN the first is the elevation of the flank of the outside. By the intercolumniations Plate 17. of the portico may be seen the order of the columns, and the ornaments that were round the court.

IN the second is the upright of half the front of the temple, and of the return of the Plate 19. court.

IN the third is the elevation of the portico, and of the inward part of the cell. Plate 18.

B, the wall that divides the portico from the cell.

ON one side of it is designed the plan of the temple, and of the court. Plate 20.

A, the place where the statue of ANTONINUS was

Q, the entrance on the flank of the temple.

R, the entrance opposite to the portico of the temple.

IN the fourth is the elevation of half the entrance that was in the front of the temple. Plate 21.

IN the fifth are the ornaments of the portico of the temple.

A, the basement.

B, the base.

C, the capital.

D, the architrave, where the inscription is.

E, the frieze.

F, the dentello, not hollowed.

G, a little cornice placed between in the sides of the temple in the part without.

CHAP. X.

Of the temple of the SUN and of the MOON.

NEAR the arch of TITUS, in the garden of *Santa Maria Nova*, there are two temples to be seen, of the same form, and with the same ornaments; one of which, because it is placed in the east, is thought to have been the temple of the SUN; the other, because it looks towards the west, to be that of the MOON.

THESE temples were built, and dedicated by TITUS TATIUS, king of the Romans. They come very near a round form, because they are as broad as they are long; which was done in respect of the course of the said planets, which is circular round the heavens.

THE loggia's that were before the entrance of these temples are all ruined; neither are there any other ornaments to be seen, but those that are in the vaults, which have compartments of stucco most exquisitely wrought, and of a beautiful invention.

THE walls of these temples are very thick, and between one temple and the other on the flank of the great chapels, which are opposite to the entrance, the vestigia are to be seen of some stairs, which must have led up to the roof.

I HAVE made the loggia's forwards, and the ornaments within as I have imagined they must have been, consideration being had to that which is seen above ground, and that little that it has been possible to see of the foundations.

I HAVE made two tables of this temple.

IN the first are the plans of both, as they are joined together; and one may see where the Plate 22. stairs were, as was said led up to the roof. Near these plans are the elevation of the outward part, and of that within.

Plate 23. IN the second are the ornaments, that is, those of the vaults, the others being ruined, no vestigia of them are to be seen; and the elevations on the flank.

A, the compartments of the chapels that are opposite to the doors, and are each of them twelve squares.

C, the profile and sacoma of the said squares.

B, the compartments of the great nave; it is divided into nine squares.

D, the profile and modeno of the said squares.

CHAP. XI.

Of the temple vulgarly called the GALLUCE.

NEAR the trophies of MARIUS the following edifice is to be seen, in a round form, which, next to the *Pantbeon*, is the greatest round fabrick in *Rome*. They vulgarly call this place the *Galluce*; hence some have said, that in that place was the basilica of CAIUS and of LUCIUS, together with a beautiful portico AUGUSTUS caused to be made in honour of CAIUS and of LUCIUS his nephews; which I do not believe, because this edifice has not any of those parts that are required in basilica's. How such were made, I have mentioned before in the third book, when, according to VITRUVIUS, I divided the places of the piazza's; and therefore I believe that it was a temple.

THIS edifice is all of brick, and must have been coated with marble; but now it is entirely stripped. The cell in the middle, which is perfectly round, is divided into ten faces, and in each face it has a chapel hidden in the thickness of the walls, excepting in the face where the entrance is. The two cells that are on the sides must have been very much adorned, because there are many niches to be seen; and it is very likely that there were columns, and other ornaments which accompanying the said niches, must have made a very beautiful effect. Those who directed the emperor's chapel at *San Pietro*, and of the king of *France*, which have since been ruined, took example from this edifice; which having members on all its parts, instead of abutments, is exceeding strong, and after so long a time is still standing. Of this temple, because (as I have said) there are not any ornaments to be seen, I have

Plate 24. made only one table, in which is the plan and the elevation of the inside.

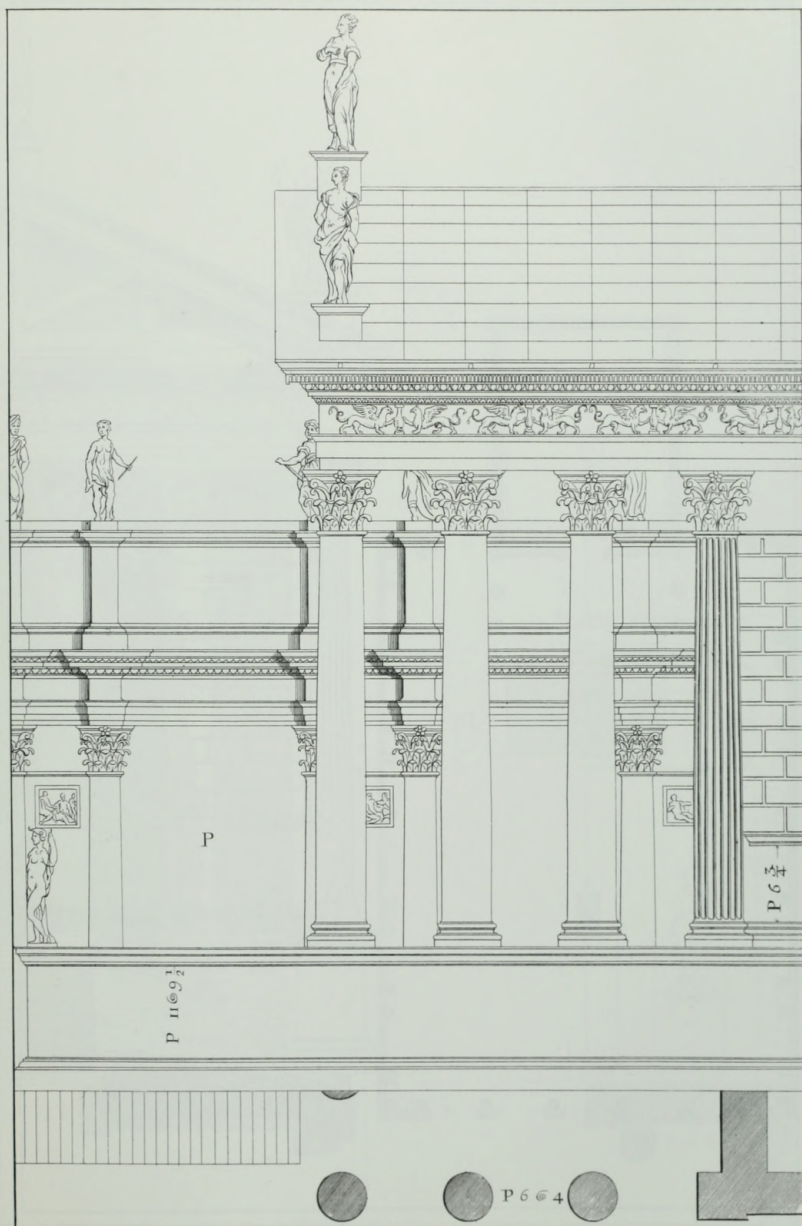
CHAP. XII.

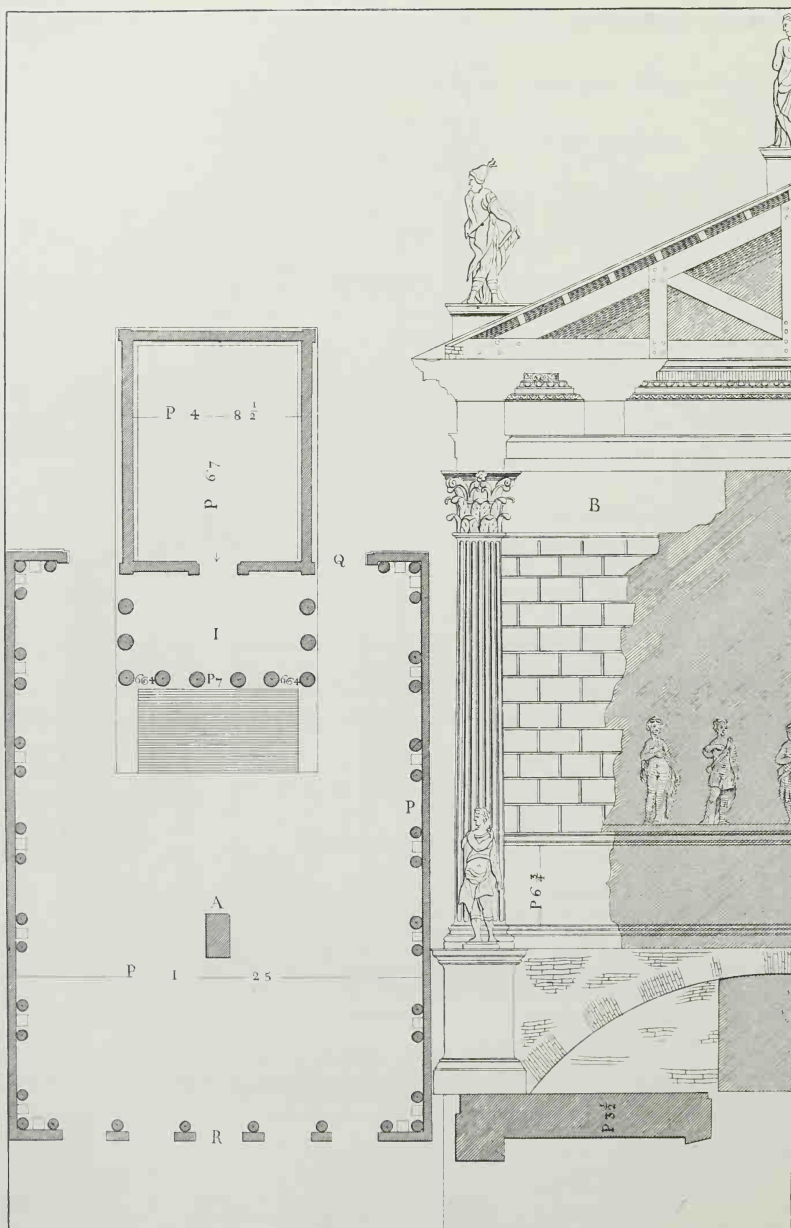
Of the temple of JUPITER.

UPON *Monte Quirinale*, now called *Monte Cavallo*, behind the houses of Signori COLONNA, the vestigia are to be seen of the following edifice, which is called the frontispiece of NERO. Some would have it that there stood the tower of MÆCENAS, and that from this place NERO, with great delight, saw the city of *Rome* burnt: In which they are very much deceived, because the tower of MÆCENAS was upon *Monte Esquilino*, not very far from the baths of DIOCLESIAN. There have been some others that have said, that the houses of the CORNELII were in this place.

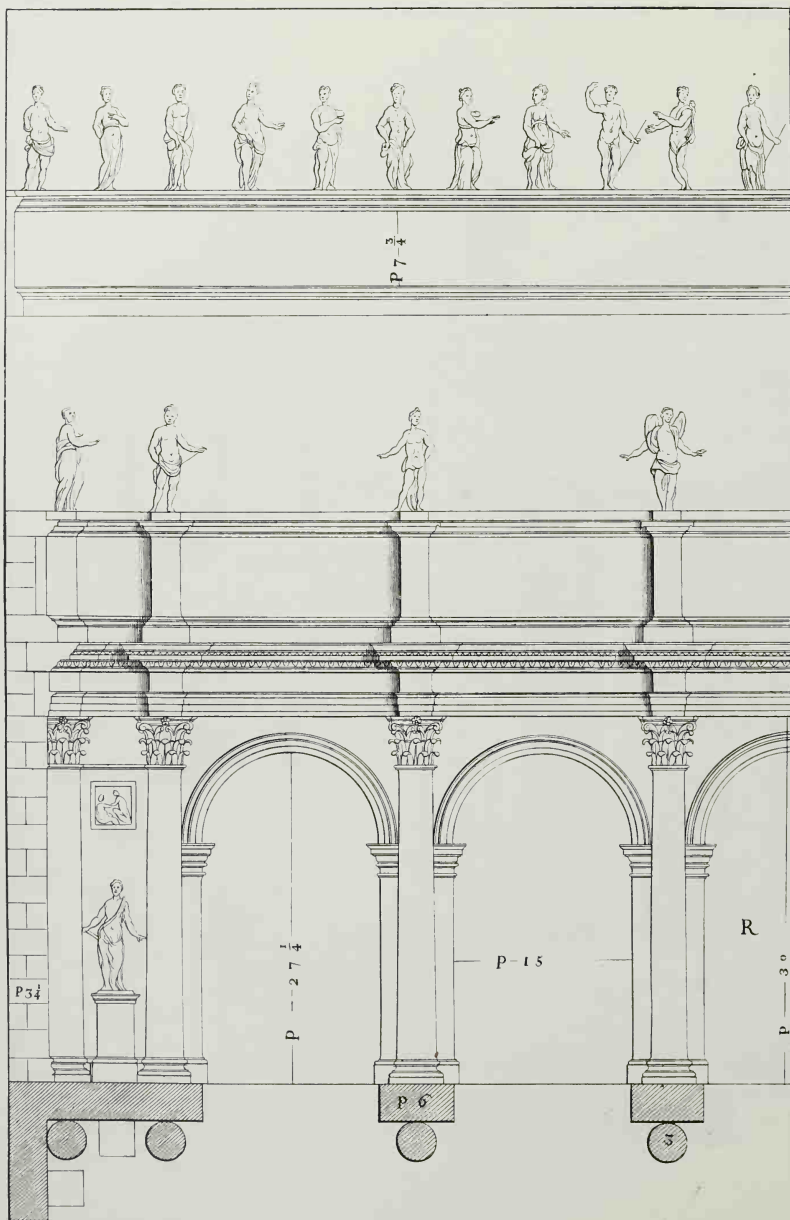
FOR my part, I believe that this was a temple dedicated to JUPITER; because that when I was in *Rome*, I saw them dig where the body of the temple was, and some Ionick capitals were found, which served for the inward part of the temple, and were those of the angles of the loggia's; because the part in the middle, in my opinion, was uncovered.

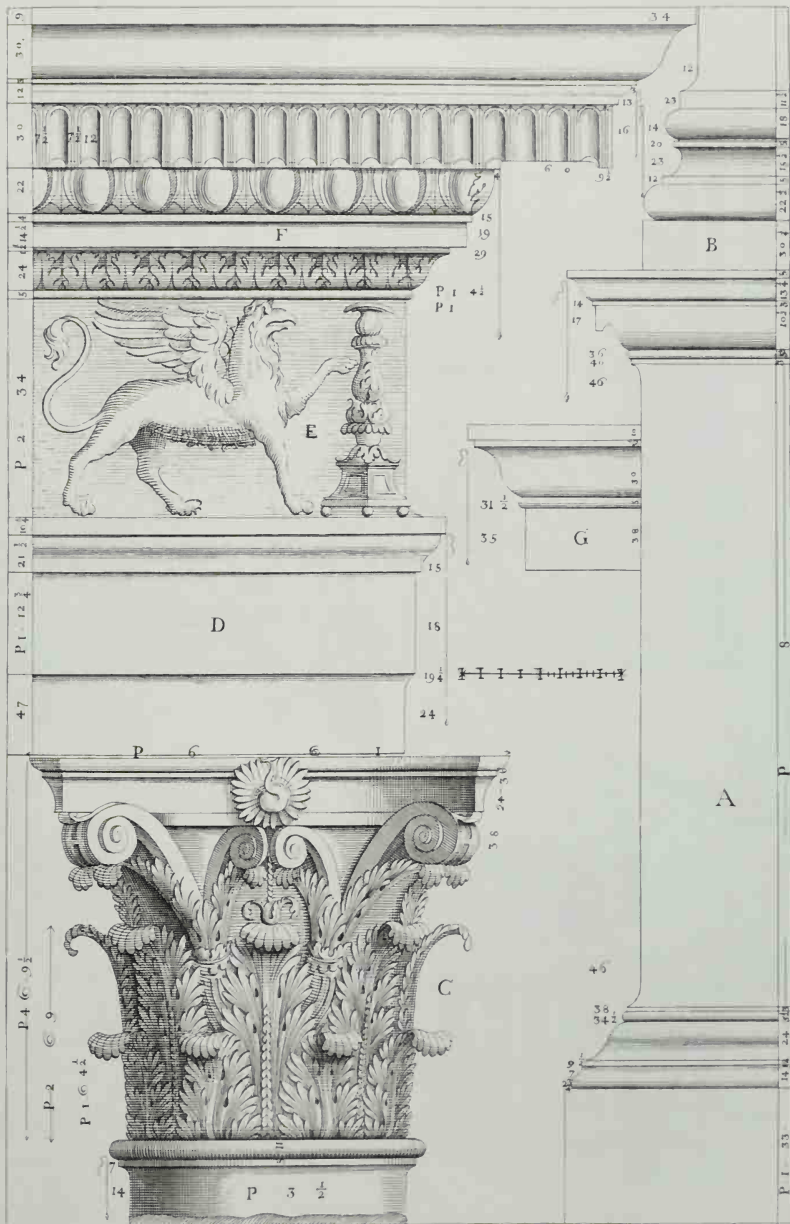
THE aspect of this temple was the false-wing'd, called by VITRUVIUS pseudodipteros. The manner was thick of columns. The columns of the outward portico's were of the Corinthian order. The architrave, the frize, and the cornice, were the fourth part of the height of the columns. The architrave had its cimacium of a very beautiful invention. The frize in the sides was carved with flowered work; but in the front, which is ruined, there must have

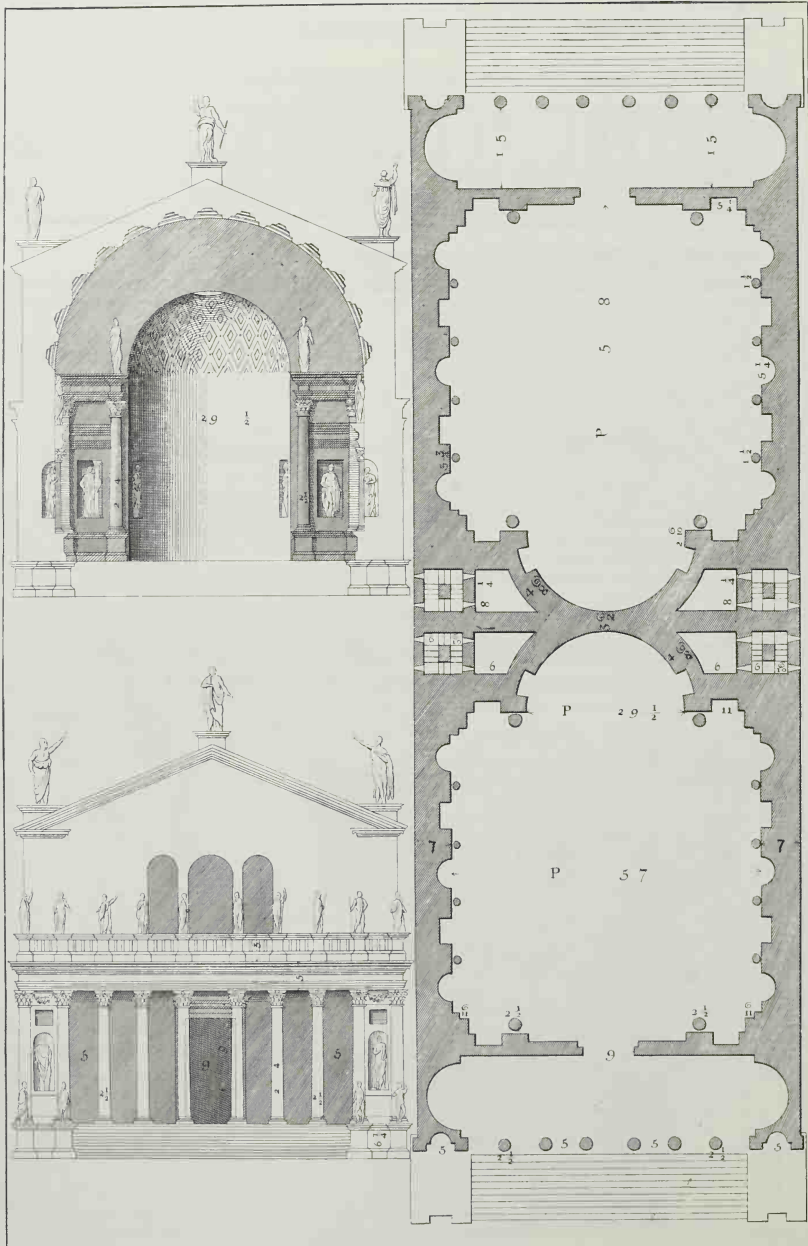


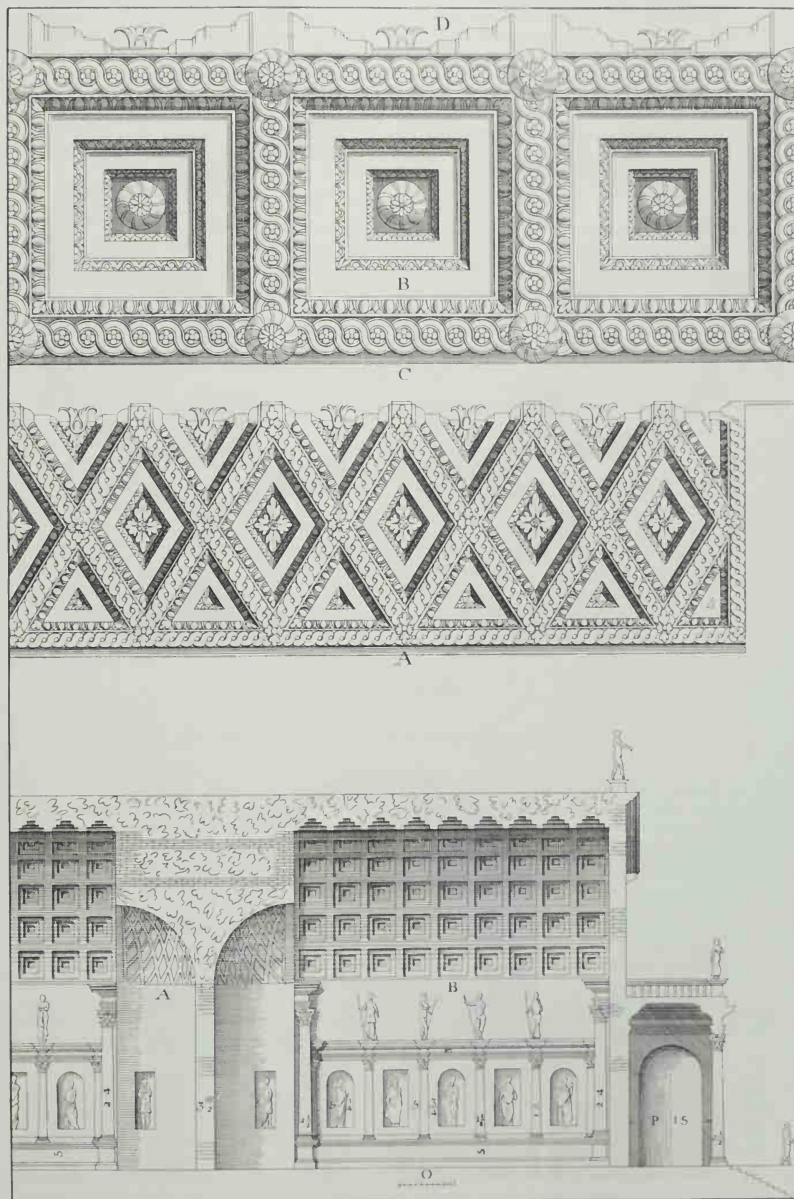


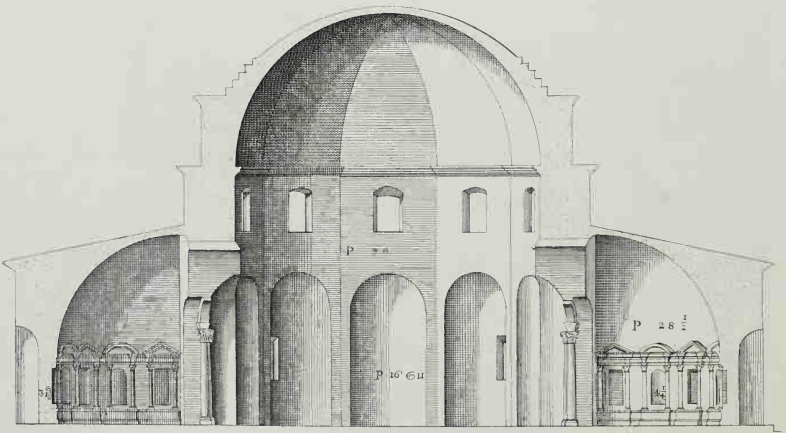
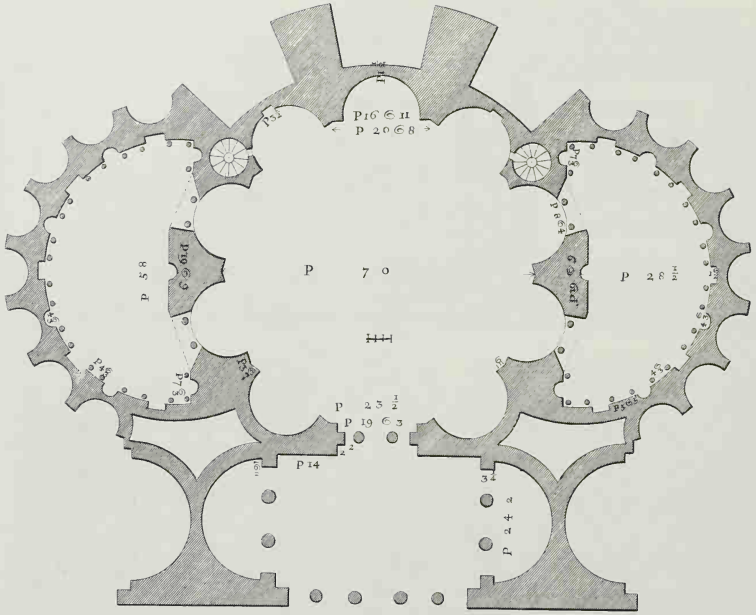












have been the letters of the inscription. The cornice has the modiglions squared, and one of these comes directly over the middle of the column. The modiglions that are in the cornice of the frontispiece are directly plumb; and so they ought to be made. In the inward part of the temple there must have been portico's, as I have design'd them. Round this temple there was a court, adorned with columns and statues; and forwards there were two hories, which are to be seen in the publick way; from which this mount has taken the name of *Monte Cavallo*. The one of them was made by PRAXITELES, and the other by PHIDIAS. There were very commodious stairs, that ascended to the temple, and in my opinion this must have been the greatest and most adorned temple that was in *Rome*.

I HAVE made six plates of it.

IN the first is the plan of the whole edifice, with the back part where the stairs were, Plate 25 which, ascending one over the other, led to the courts that were on the sides of the temple. The elevation of this manner of stairs, with the plan, in a large form, has been set down before in the first book, where I have treated of the different manners of stairs.

IN the second is the flank of the temple outwardly. Plate 26.

IN the third is half of the outward front of the temple. Plate 28.

IN the fourth is the inward part; and in both these plates a small part of the ornaments of Plate 27. the courts may be seen.

IN the fifth is the flank of the inward part. Plate 29.

IN the sixth are the ornaments. Plate 30.

A, *The architrave, the frieze and the cornice.*

C, *the base.*

E, *the capital of the columns of the portico.*

D, *the base of the pilasters that answer to the columns.*

B, *the cornice that is round the courts.*

F, *the acroteria.*

CHAP. XIII.

Of the temple of FORTUNA VIRILIS.

NEAR the *Pons Senatorius*, now called that of *Santa Maria*, is to be seen, almost intire, the following temple, and is the church of *Santa Maria Egittia*. It is not known for certain how it was called by the ancients. Some say that it was the temple of *Fortuna Virilis*; of which one reads, as a wonderful thing, that when it was burnt with all that was in it, only the gilded wooden statue, that was there, of *SERVIVS TULLIVS* was found safe, and in no part damaged by the fire.

BUT because regularly the temples to *FORTUNE* were made round, some others have said, that it was no temple, but the basilica of *C. LUCIVS*; grounding this their opinion upon some letters that have been found there. Which in my judgment cannot be; not only because this edifice is little, and the basilica's were necessarily large edifices, by reason of the great number of people who did business there; as also, because in basilica's portico's were made in the part within, and in this temple there are not any vestigia of a portico; I therefore believe certainly that it was a temple.

Its aspect is the protilos, and has half columns in the walls of the cell in the part without, that accompany those of the portico, and have the same ornaments. Hence to those that view it in flank, it affords the aspect of the *alato a tornio*. The intercolumniations are of two diameters and a quarter, so that its manner is the stilos. The pavement of the temple is raised from the ground six foot and an half, and one ascends to it by steps, to which the basements which support the whole fabrick form a poggio. The columns are of the Ionick order. The base is Attick, although it seems that it ought to have been Ionick, as well as

the capital. It is not, however, found in any edifice, that the ancients made use of the Ionick, described by VITRUVIUS. The columns are fluted, and have twenty four channels. The voluta's of the capital are oval; and the capitals that are in the angles of the portico, and of the temple, make a front two ways: which I do not remember to have seen any where else. But because it has appeared to me a beautiful and graceful invention, I have made use of it in many fabrick's; and how it is made, will appear in the design. The ornaments of the door of the temple are very beautiful, and in beautiful proportion. All this temple is made of peperino, and is covered with stucco.

I HAVE made three plates of it.

Plate 31. IN the first is the plan with some ornaments.

H, the base	} of the basements that support the whole fabrick.
I, the dado	
K, the cimacium	
L, the base of the columns upon the basement.	
F, the ornaments of the door.	
G, the scroll of the said door in front.	

Plate 32. IN the second is the front of the temple.

M, the architrave, the frieze, and the cornice.	} of the capital.
O, the front	
P, the plan	
Q, the flank	
R, the shaft without the voluta	

Plate 33. IN the third is the flank of the temple.

M, part of the frieze, that goes with those carvings round the whole temple.
 S, the plan of the angular capitals, by which it may easily be known how they are to be made.

C H A P. XIV.

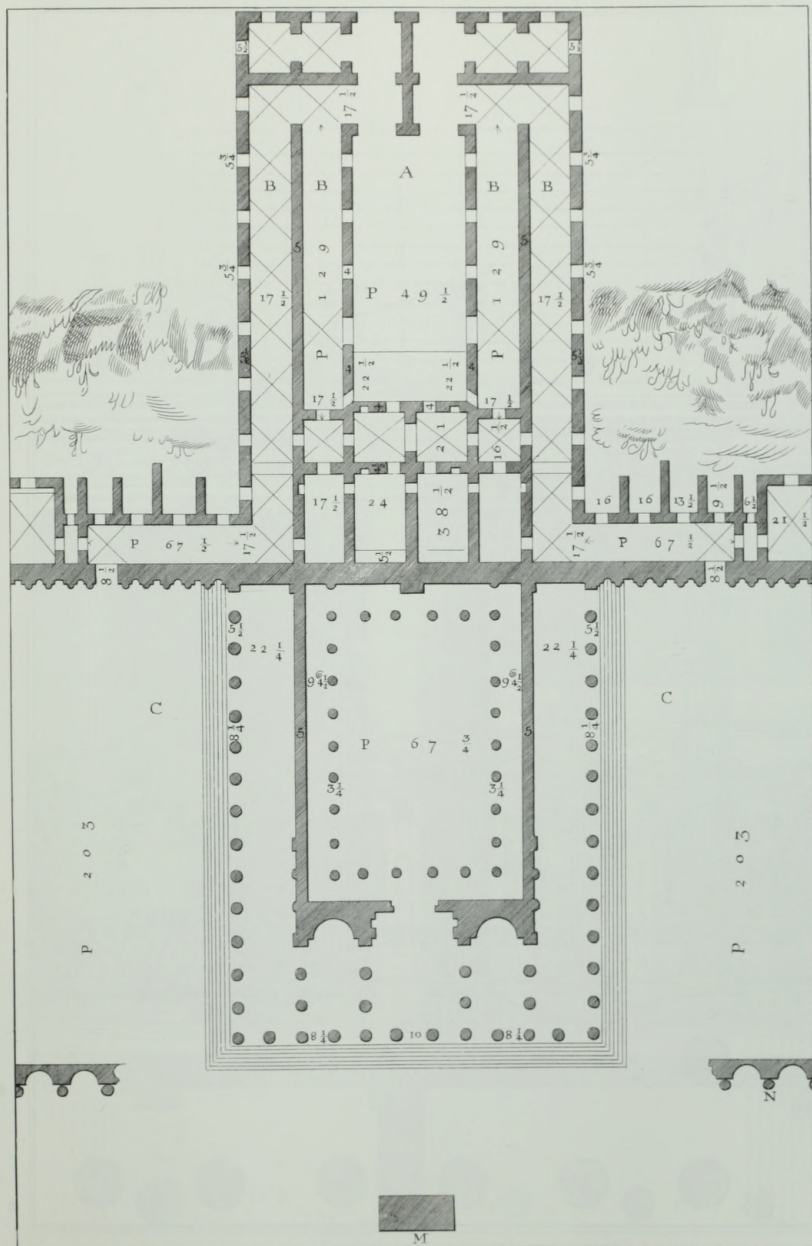
Of the temple of VESTA.

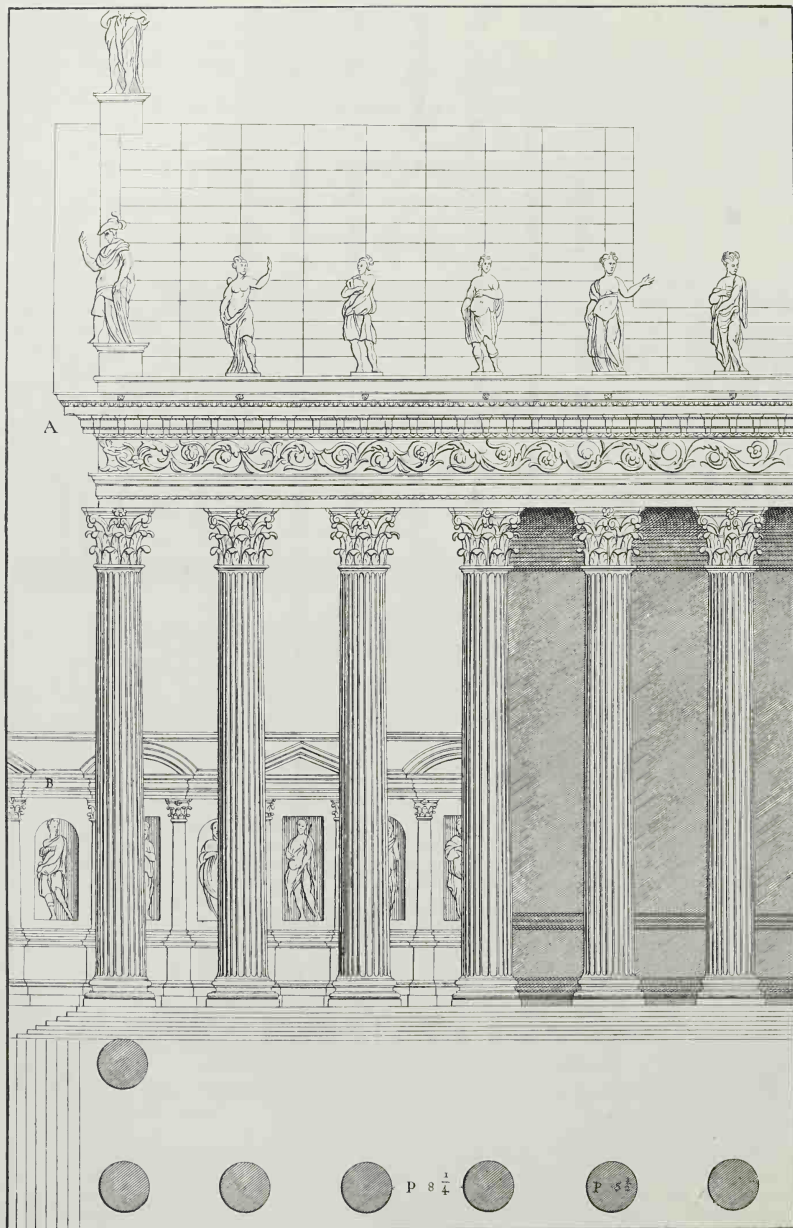
FOLLOWING the bank along the *Tyber*, near the said temple is found another round temple, which is at present called *St. Stefano*. They say that it was built by NUMA POMPILIUS, and dedicated to the goddess VESTA; and he would have it of a round form, in resemblance of the element of the earth, by which human generation is subsisted, and of which they say that VESTA was the goddess.

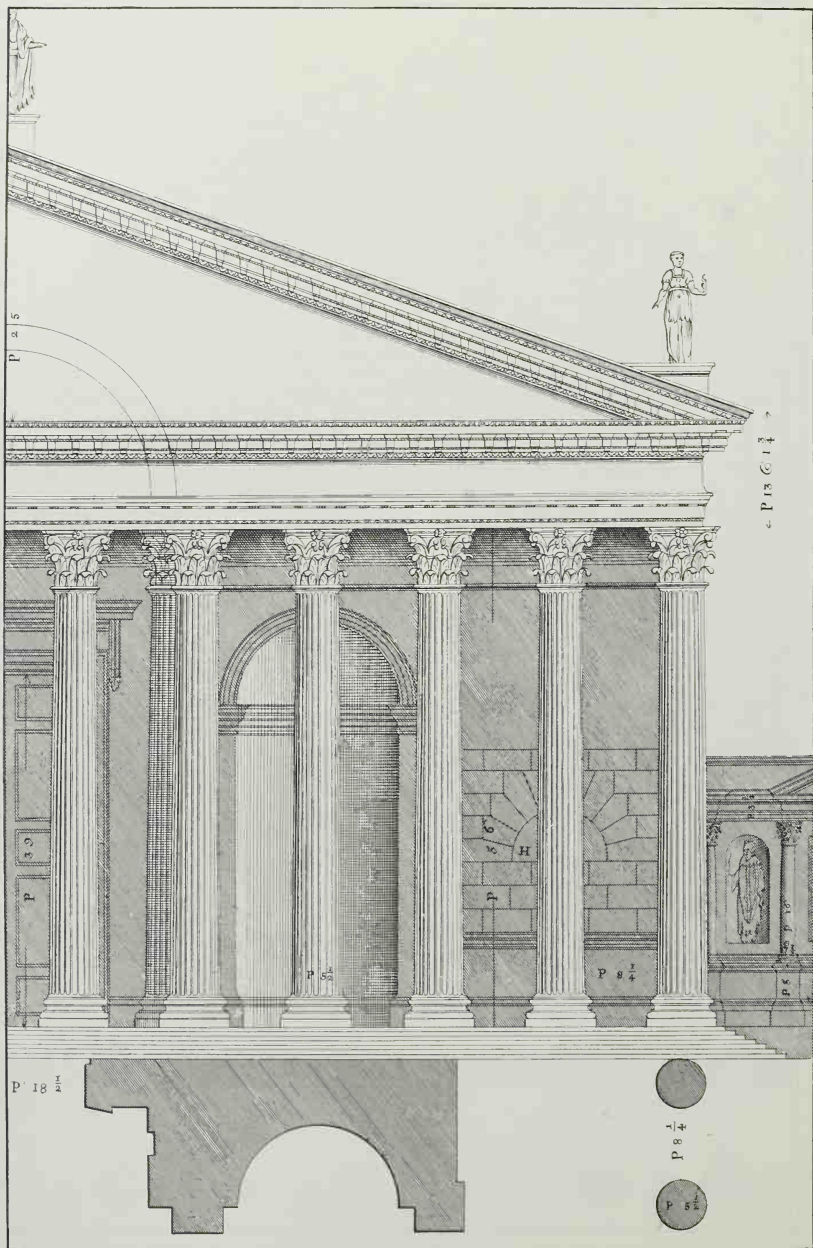
THIS temple is of the Corinthian order. The intercolumniations are of one diameter and an half. The columns with the base and capital, are eleven teste in length. (By a teste is understood the diameter of the foot of the column, as has been said elsewhere.) The bases are without zoccolo or dado; but the step whereon they rest, serves for it, which was done by the architect who ordered it, that the entrance into the portico might be less incumbered, the manner being thick of columns.

THE cella, computing also the thickness of the walls, has as much in diameter as the columns are long.

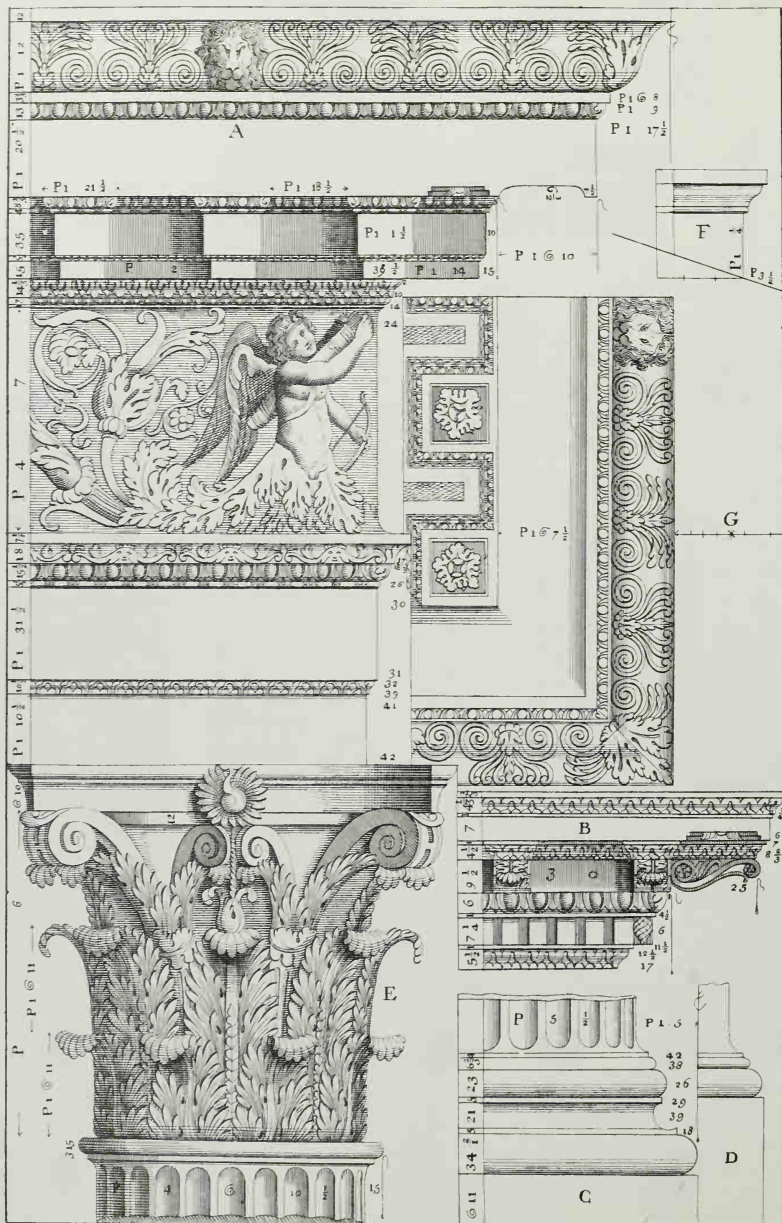
THE capitals are carved in the manner of olive leaves. The cornice is not to be seen, but it has been added by me in the design. Under the soffit of the portico there are very beautiful compartments. The door and the windows have very beautiful and plain ornaments. Under the portico, and in the inward part of the temple, there are cimacia's that support the windows, and go quite round, affording the aspect of a basement, upon which the wall is founded, and upon which rests the tribuna. This wall in the outward part,

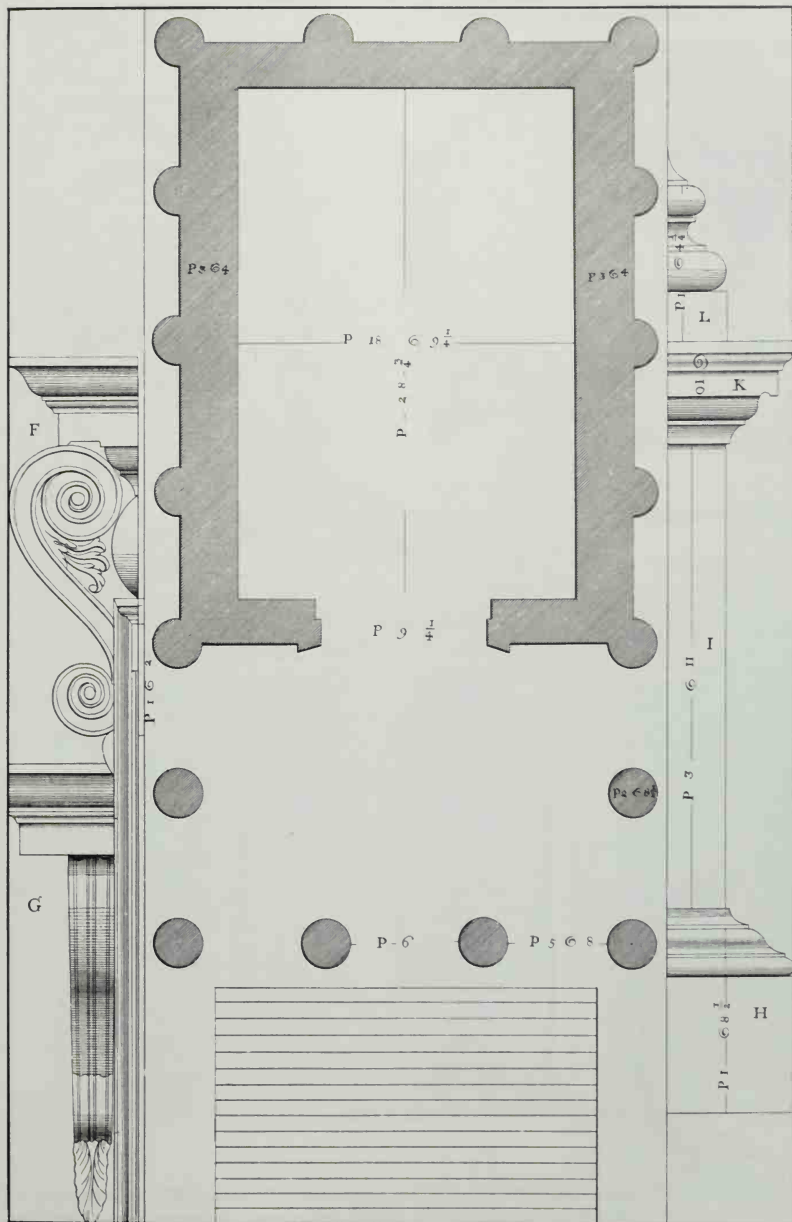


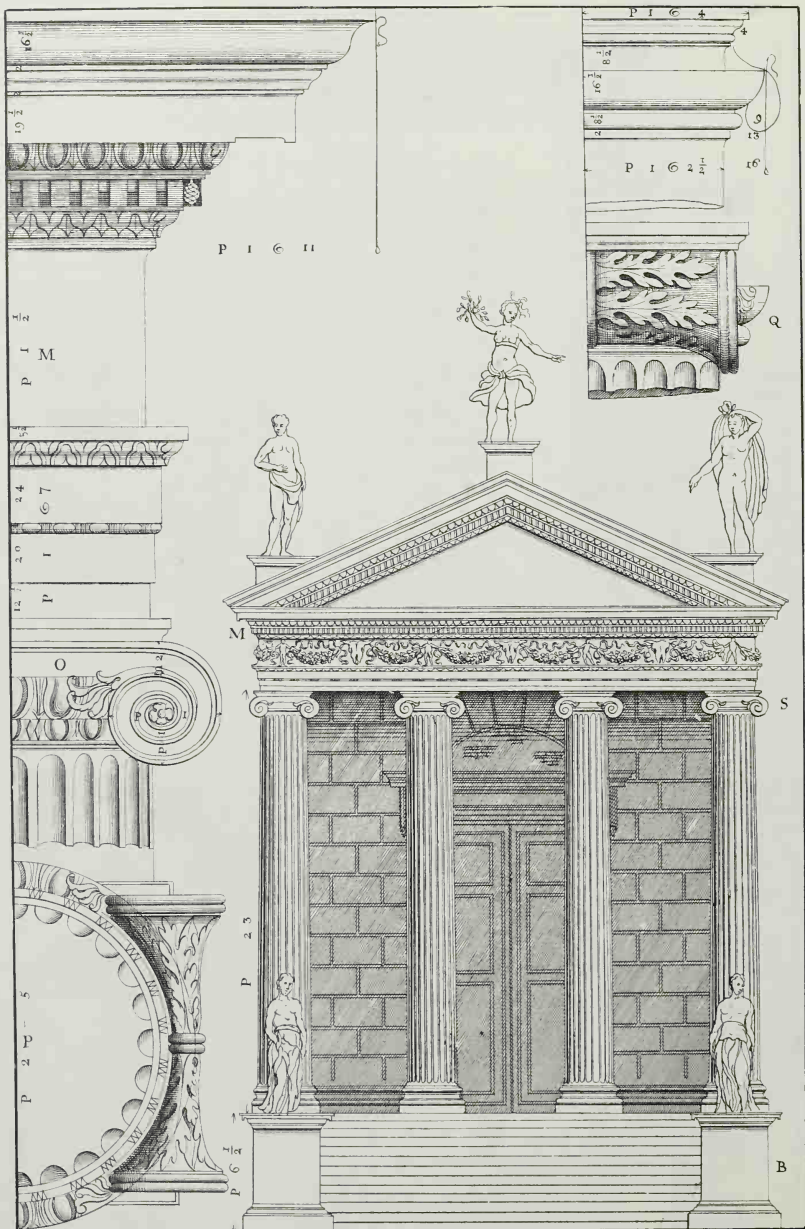


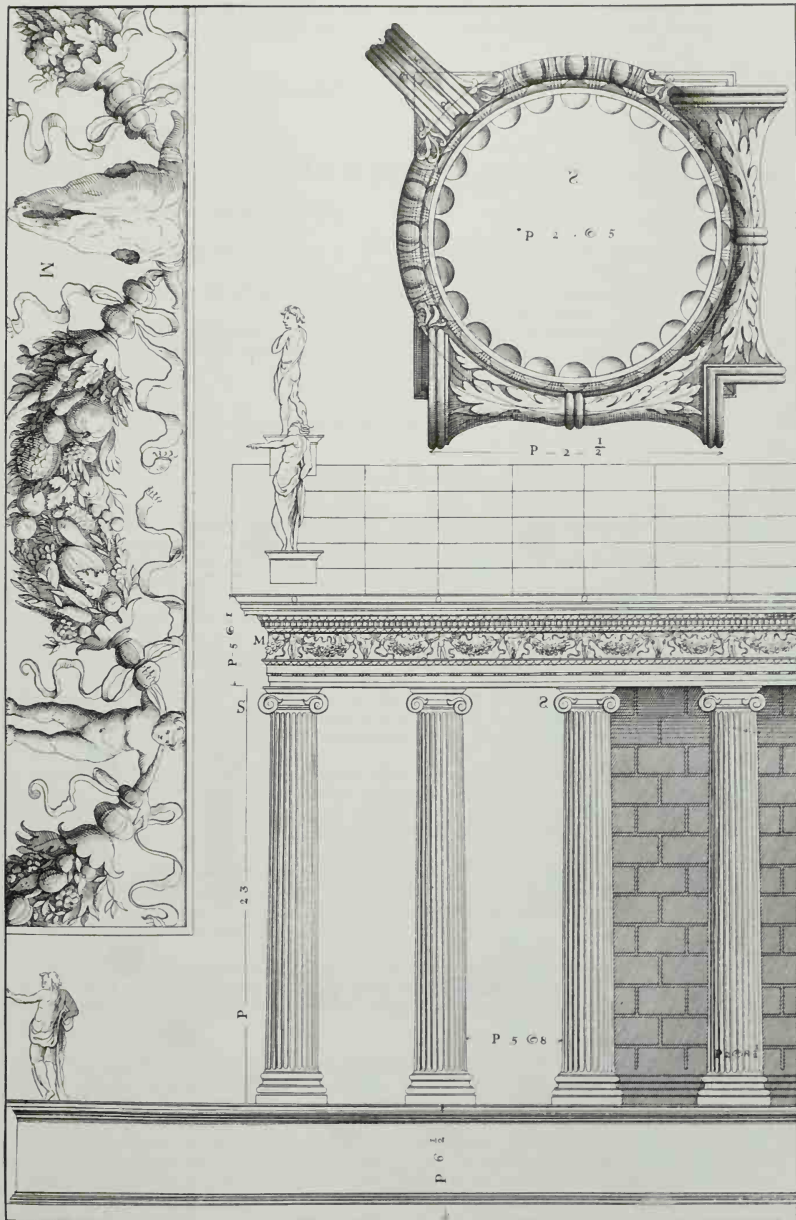


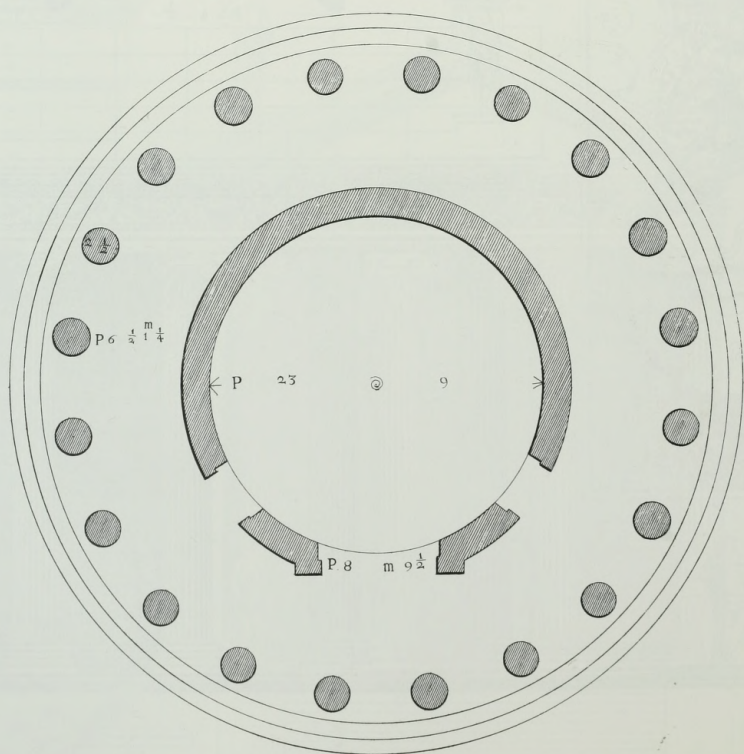












that is, under the portico, is distinguished from the cornice by squares up to the soffit; and in the inward part it is polished, and has a cornice even with that of the portico's, which support the tribuna.

OF this temple I have made three plates.

IN the first is designed the plan.

Plate 34.

IN the second the elevation, as well of the part without, as of that within.

Plate 35.

IN the third are the particular members.

Plate 36.

A, is the base of the columns.

B, is the capital.

C, the architrave, the frieze, and the cornice.

D, the ornaments of the door.

E, the ornaments of the windows.

F, the outside little cornice round the cella, from which the squares begin.

G, the inward little cornice, upon which is the soffit's of the windows.

H, the soffit of the portico.

CHAP. XV.

Of the temple of MARS.

AT the Piazza vulgarly called *de i Preti*, which is found in going from the *Rotonda* to the column of ANTONINUS, the remains of the following temple are to be seen; which, according to some, was built by the Emperor ANTONINUS, and dedicated to the God MARS.

ITS aspect is the *alato a torno*. The manner is thick of columns. The intercolumniations are one diameter and an half. The portico's round it are so much broader than an intercolumniation, as the projections of the anti project from the remainder of the walls. The columns are of the Corinthian order. The base is Attick, and has a bastoncino under the cimbia of the column. The cimbia, or listello, is very small, and succeeds thus very graceful. It is made so small always when it is joined with a bastoncino over the torus of the base. It is also called a bastone, because there is no danger of its breaking.

THE capital is carved after the manner of olive leaves, and is very well contrived. The architrave, instead of an intavolato, has an half ovolo, and over it a cavetto; and the cavetto has very beautiful intaglio's, and are different from those of the temple of PEACE, and of the temple which we have said was on *Monte Quirinale*, dedicated to JUPITER.

THE frieze projects out one eighth part of its height, and is swelled in the middle. The cornice has its modiglion square, and over that the goccioloio, and has no dentello, which VITRUVIUS says ought to be made as often as modiglions are used; that rule, however, is to be seen observed in very few ancient edifices.

OVER the cornice in the sides of the temple, there is a small cornice, perpendicular to the front of the modiglions, and was made to place statues on, that they might all be entirely seen, and that their legs and feet might not be hid by the projection of the cornice.

IN the inward part of the portico there is an architrave of the same height of that without, but is different in this, that it has three fascia's. The members that divide one fascia from the other are small intavolato's, carved in the manner of small leaves, and archetti, and the lesser fascia is also carved with leaves. Besides this, instead of an intavolato, it has a fusaiole over a gola dritta, worked very delicately in foliage. This architrave supports the vaults of the portico's. The architrave, frieze, and the cornice, are one of the five parts, and an half, or two elevenths of the length of the columns; and although they are less than a fifth part, they nevertheless admirably succeed, and with much grace.

THE walls in the outward part are of peperino, and within the temple there are other walls of baked stone, that they might be the better able to support the vault, which was made with beautiful squares wrought with stucco.

THESE walls are coated with marble, and there were niches and columns round them for ornament.

ALMOST a whole flank of this temple is to be seen; I have however endeavoured to represent it whole, by means of what I could collect from its ruins, and from the doctrine of VITRUVIUS: and therefore have made five plates of it.

Plate 37. IN the first I have designed the plan.

Plate 38. IN the second the elevation of the front forwards.

Plate 39. IN the third one part of the side without.

Plate 40. IN the fourth one part of the side of the portico, and of the temple within.

Plate 41. IN the fifth are the ornaments of the portico.

A, the base.

B, the capital.

C, the architrave.

D, the frieze.

E, the cornice.

F, the small cornice, upon which the statues were placed.

G, the scissit of the architrave between the columns.

H, the architrave in the inward part of the portico, which supports the vault.

CHAP. XVI.

Of the Baptistrium of CONSTANTINE.

THE designs that follow are of the *Baptistrium* of CONSTANTINE, which is at *S. Giovanni Laterano*. This temple, in my opinion, is modern work, made of the ruins of antient edifices; but because it is a beautiful invention, and has the ornaments well carved, and with various manners of intaglia's, of which an architect may upon several occasions make use; it appeared to me fit to be placed among the antient, and the rather, because it is by every body esteemed to be so.

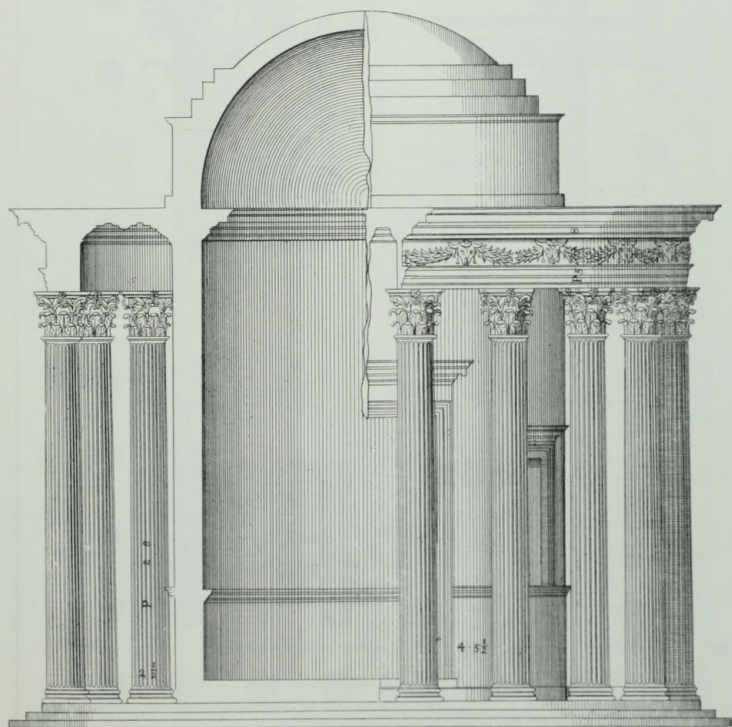
THE columns are of porphyry, and of the Composite order. The base is composed of Attick and of the Ionick; having two bastones of Attick, and the two cavettoes of the Ionick. But instead of two astragals or tondino's, which are made between the cavetto's in the Ionick, this has only one, which occupies that space which the two should take up.

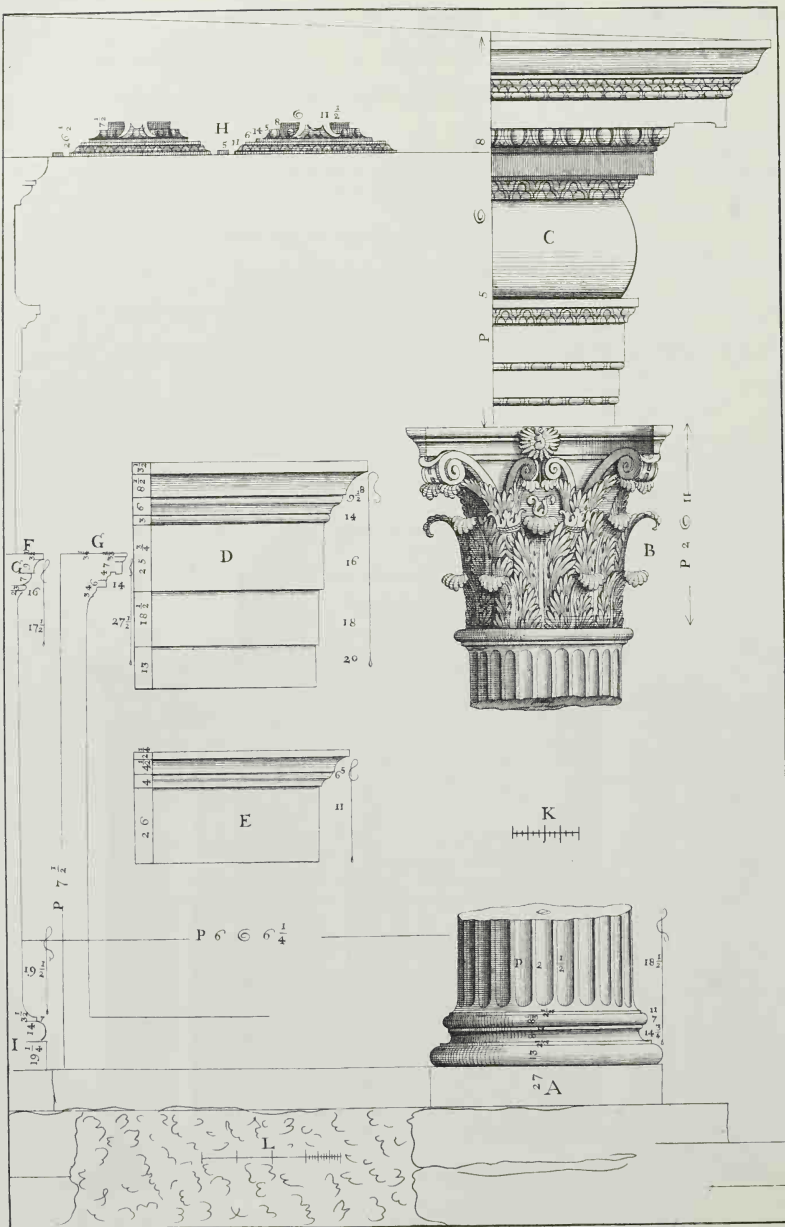
ALL these members are beautifully wrought, and have most beautiful intaglia's. Upon the bases of the loggia there are foliages, that support the shafts of the columns; which are worthy of notice. And the judgment of that architect is to be praised, who understood so well to accommodate them (the shafts of the columns not having as much length as was requisite) without taking from the work any part of its beauty and majesty.

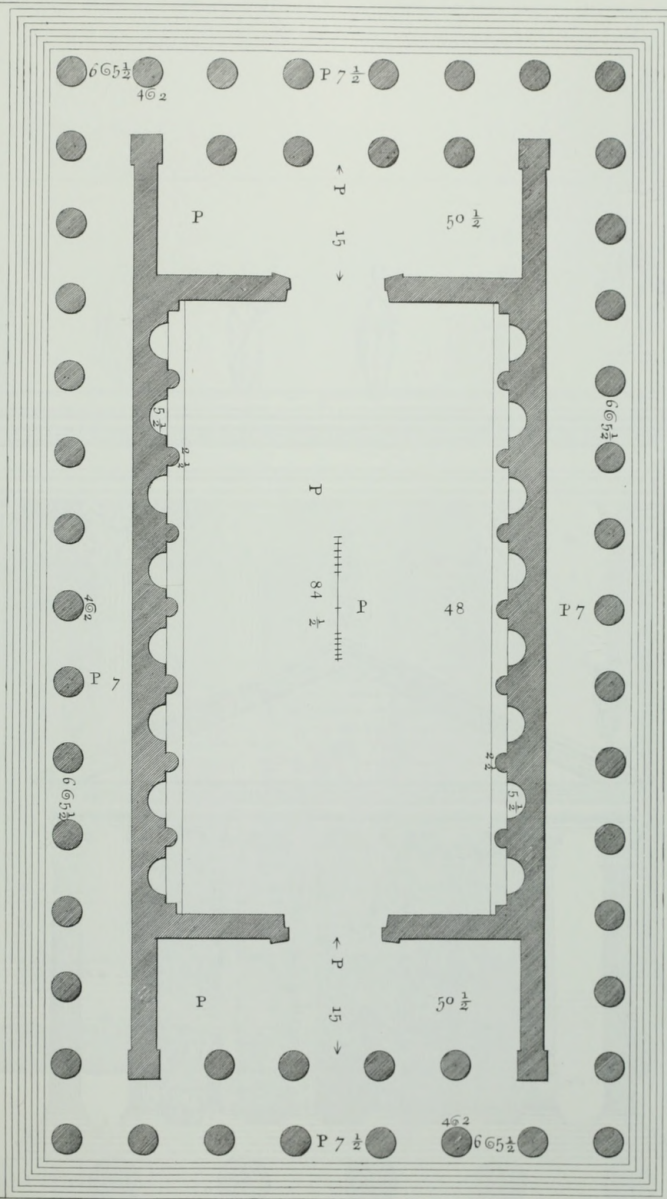
I HAVE also made use of this invention in the columns that I have put for an ornament to the door of the church of *S. Giorgio Maggiore* in *Venice*, which did not hold out in length as far as was requisite; and are of so beautiful marble, that they could not well be left out of the work. The capital, are composed of the Ionick and Corinthian, the method of which has been mentioned in the first book, and they have acanthus' leaves.

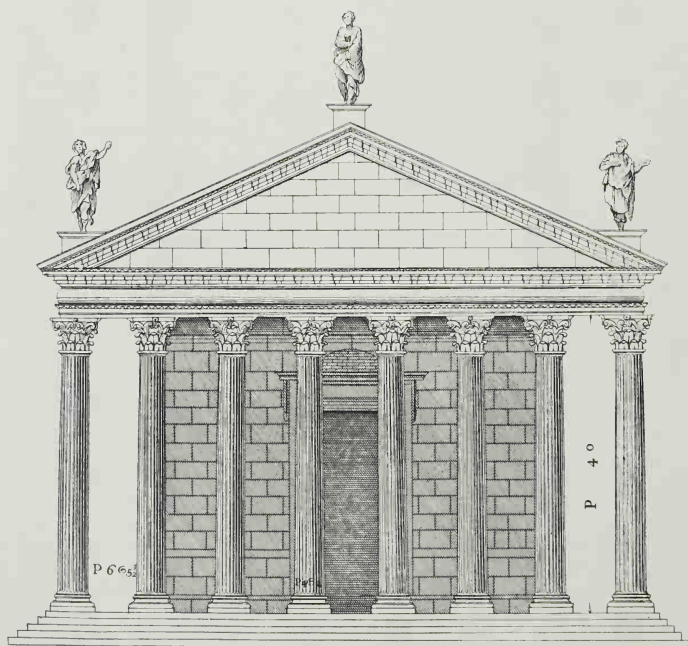
THE architrave is beautifully carved. Its cimacium has, instead of the gola reversa, a fusaiolo, and over it a half ovolo.

THE frieze is plain. The cornice has two gola diritta's, the one upon the other, a thing very seldom seen, that is, that two members of the same sort should be placed the one upon the other.

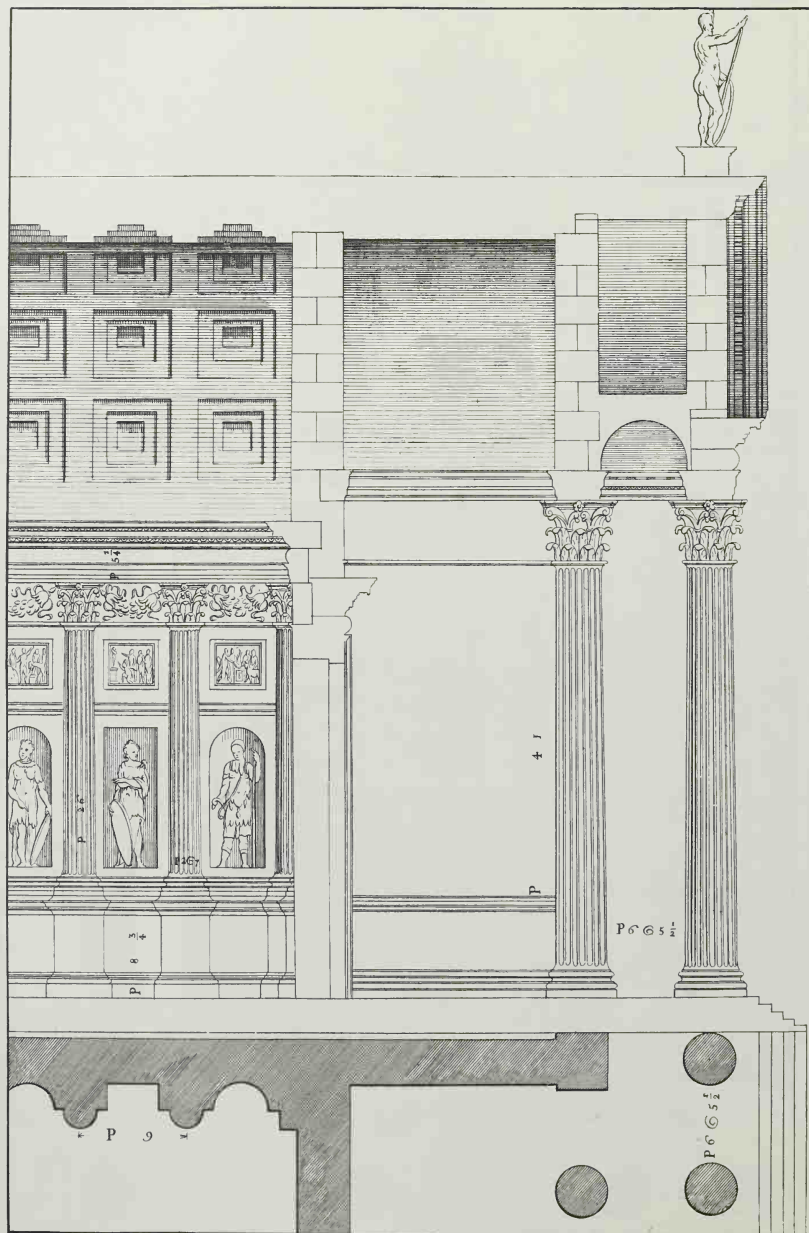


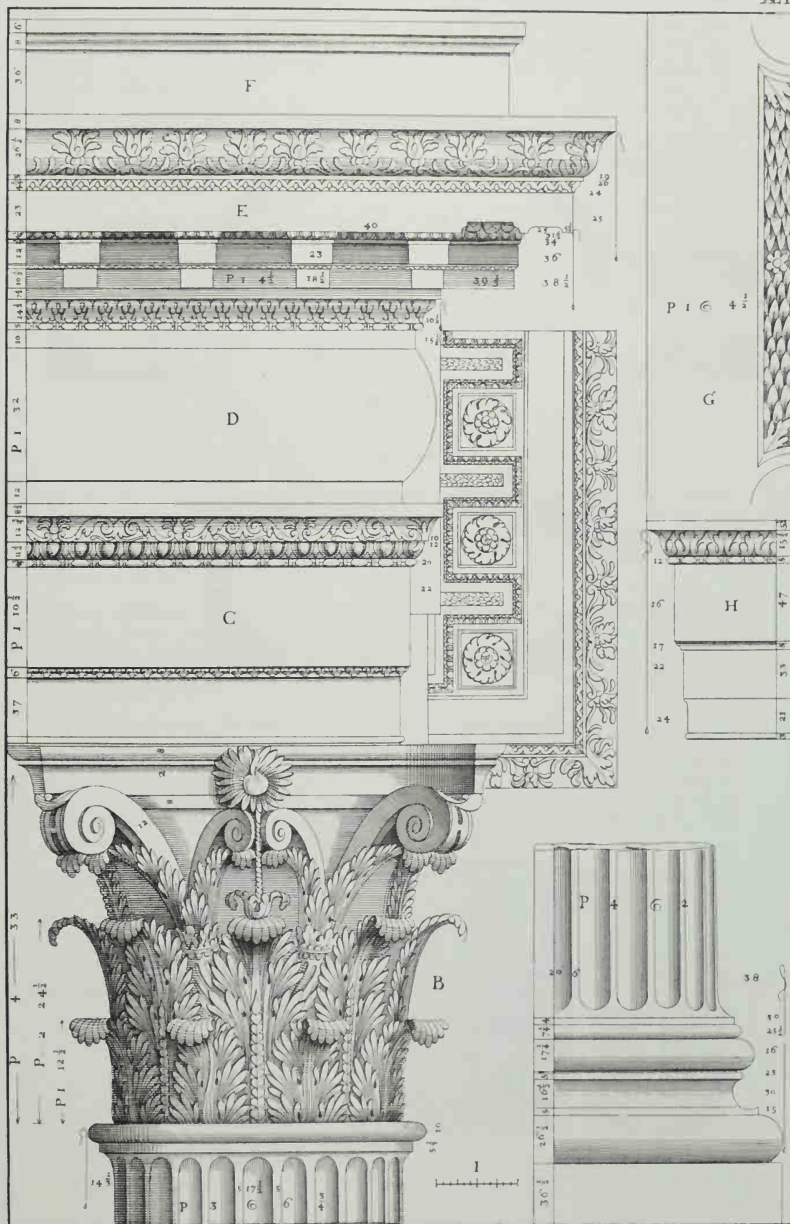


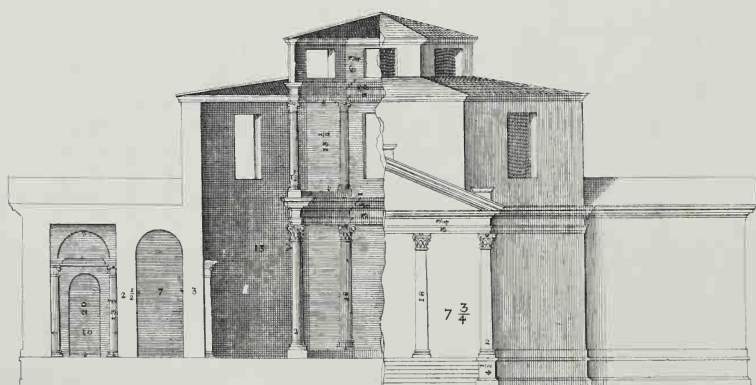
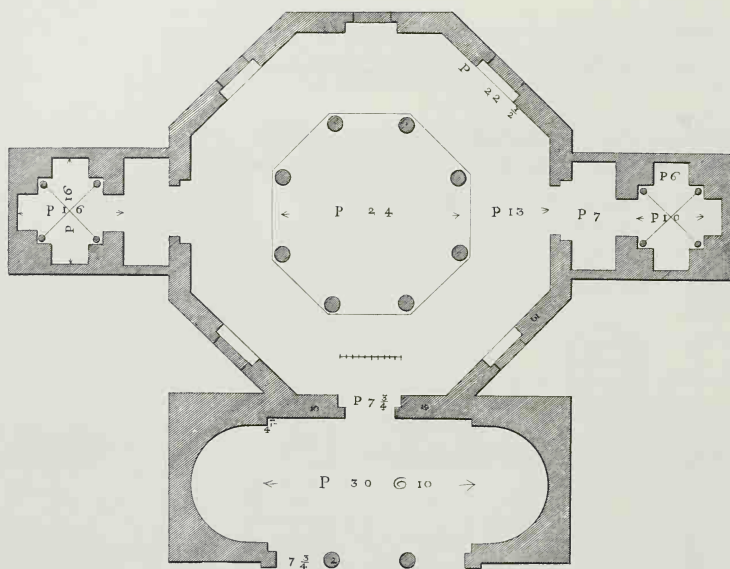












the other, without any other member between except the listello or gradetto. Over these gola's there is a dentello, and then the gocciaolo with the intavolato; and last of all, the gola diritta: so that in this cornice the architect observed not to make modiglions, by making dentels in it.

OF this temple I have made two plates.

IN the first is designed the plan and the elevation, as well of the part without, as that Plate 42. within.

IN the second are the particular members.

Plate 43.

A, the base.

B, the capital.

C, the architrave, frieze, and the cornice.

D, the soffit of the architrave between one column and the other.

E, the foot divided into twelve inches.

CH A P. XVII.

Of the temple of BRAMANTE.

AFTER the grandeur of the Roman empire began to decline, through the continual inundations of the Barbarians, architecture, as well as all the other arts and sciences, left its first beauty and elequence, and grew gradually worse, till there scarce remained any memory of beautiful proportions, and of the ornamented manner of building, and it was reduced to the lowest pitch that could be.

BUT, because (all human things being in a perpetual motion) it happens that they at one time rise to the summit of their perfection, and at another fall to the extremity of imperfection; architecture in the times of our fathers and grandfathers, breaking out of the darkness in which it had been for a long time as it were buried, began to shew itself once more to the world.

THEREFORE under the pontificate of pope JULIUS, BRAMANTE, a most excellent man, and an observer of antient edifices, made most beautiful fabricks in *Rome*; and after him followed MICHEL' ANGELO BUONAROTI, JACOBI SANSOVINO, BALDASSAR DA SIENA, ANTONIO DA SAN GALLO, MICHEL DA SAN MICHELE, SEBASTIAN SERLIO, GEORGIO VASARI, IACOBO BAROZZIO DA VIGNOLA, and the Cavalier LIGNE; of whom wonderful fabricks are to be seen in *Rome*, in *Florence*, in *Venice*, in *Milan*, and in other cities of *Italy*.

BESIDES which, most of them have been at the same time excellent painters and sculptors, as well as writers; and some of these are still living, together with some others whom I do not name, to avoid being tedious. But to return to our subject.

SINCE BRAMANTE was the first who brought good, and beautiful architecture to light, which from the time of the antients had been hid; for several reasons it seemed to me fit, that his works should have a place among the antients: I have therefore placed the following temple, directed by him, upon the *Monte Janiculo*, in this book. And because it was made in commemoration of St. PETER the Apostle, who they say was crucified there, it is called *St. Pietro Montorio*.

THIS temple is of Dorick work, both within and without. The columns are of granite, the bases and the capitals of marble, the remainder is all of *pietra tiburtina*.

I HAVE made two plates of it.

IN the first is the plan.

Plate 44.

IN the second is the elevation of both the outside and in.

C c

Plate 45.

CH A P.

C H A P. XVIII.

Of the temple of JUPITER STATOR.

BETWEEN the *Campidoglio* and the *Palatino*, near the *Foro Romano*, three columns are to be seen of the Corinthian order, which were, according to some, on the flank of the temple of *VULCAN*, and, according to others, of the temple of *ROMULUS*. There are not wanting some who say they were of the temple of *JUPITER STATOR*. And I am of opinion that this temple was vowed by *ROMULUS* when the Sabines, having by treachery taken the *Campidoglio*, and the *Rocca*, were going towards the palace in a victorious manner.

THERE have been others who have asserted that these columns, together with those that are under the *Campidoglio*, were part of a bridge, that *CALIGULA* made to pass from the *Palatino* to the *Campidoglio*: which opinion is known to be far from truth, because, by the ornaments, one sees that these columns were of two different edifices, and because the bridge that *CALIGULA* made was of wood, and passed across the *Forum Romanum*.

BUT to return to our purpose, whatever temple these columns belonged to, I have not seen any better work, or more delicately wrought. All the members have a most beautiful form, and are very well understood. I believe that the aspect of this temple was the peripteros, that is, winged round, and the manner of the pionoſtilos. It had eight columns in the fronts, and fifteen in the sides, reckoning those of the angles. The bafes are composed of the Attick, and of the Ionick. The capitals are worthy of consideration for the beautiful invention of the intaglio's made in the abaco. The architrave, the frize, and the cornice are the fourth part of the length of the columns. The cornice alone is somewhat less in height than the architrave and frize together, which is what I have not seen in other temples.

OF this temple I have made three plates.

Plate 46. IN the first is the elevation of the front.

Plate 47. IN the second is designed the plan.

Plate 48. IN the third the particular members.

A, the bafe.

B, the capital.

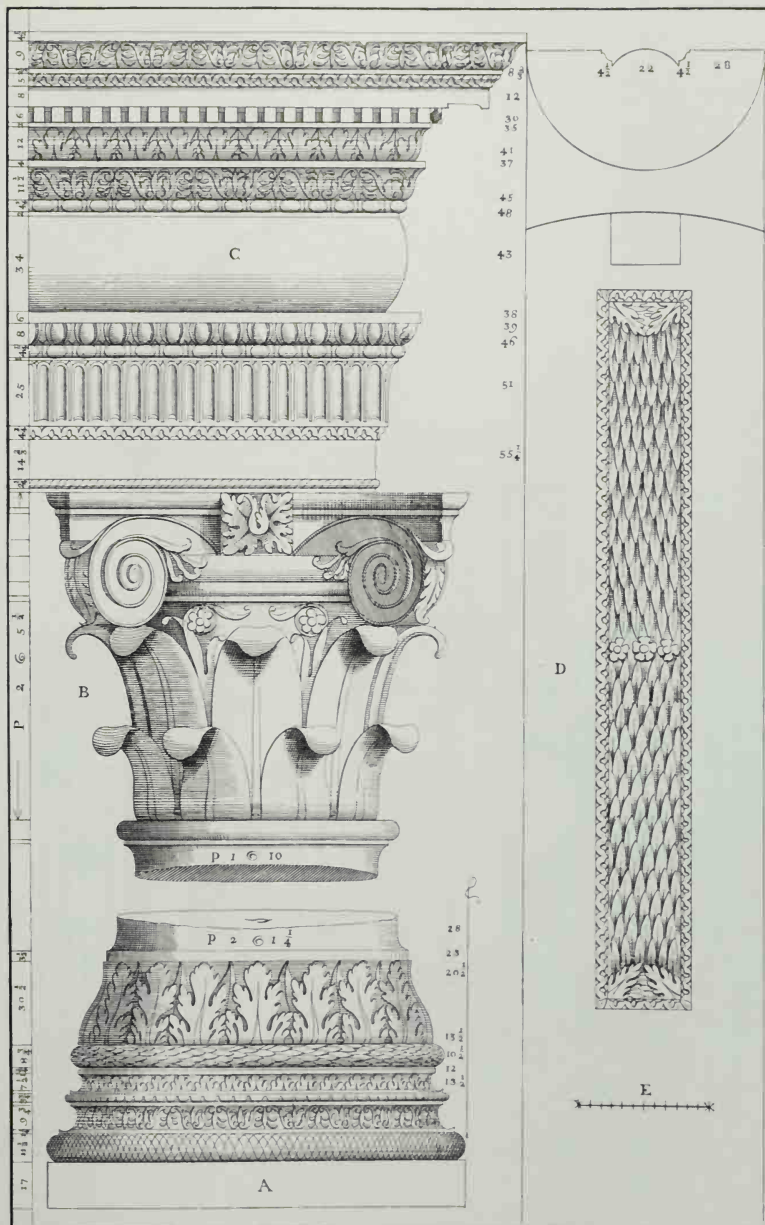
C, the architrave, the frize, and the cornice.

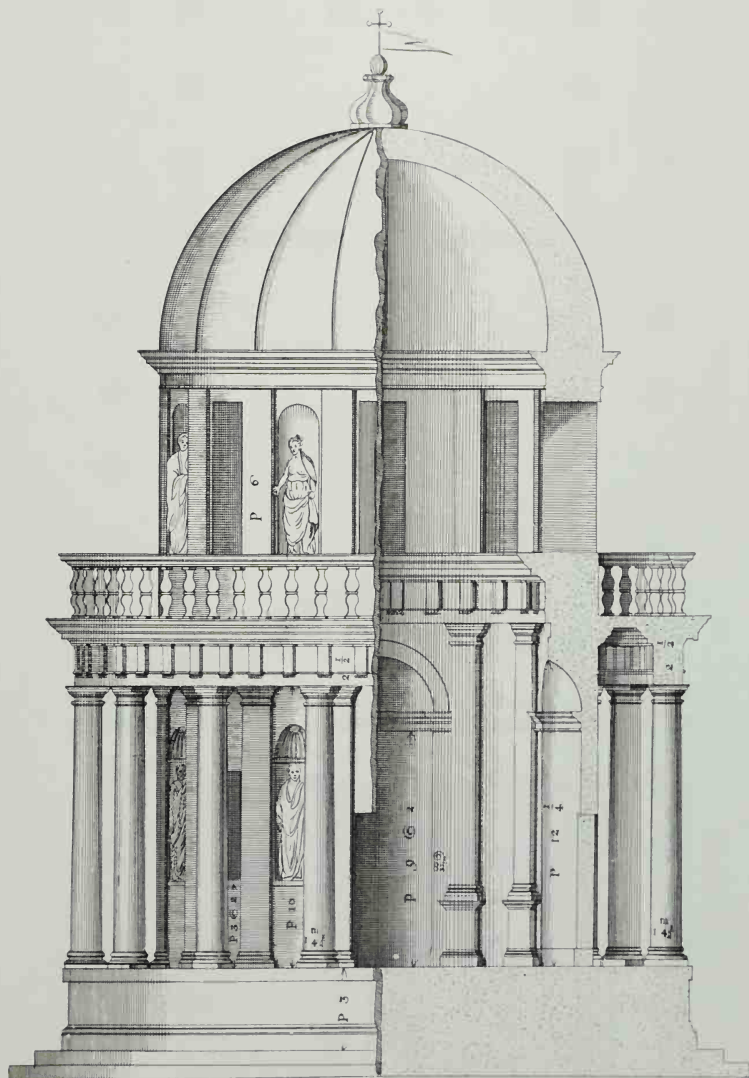
D, is part of the soffit of the architrave between the columns.

C H A P. XIX.

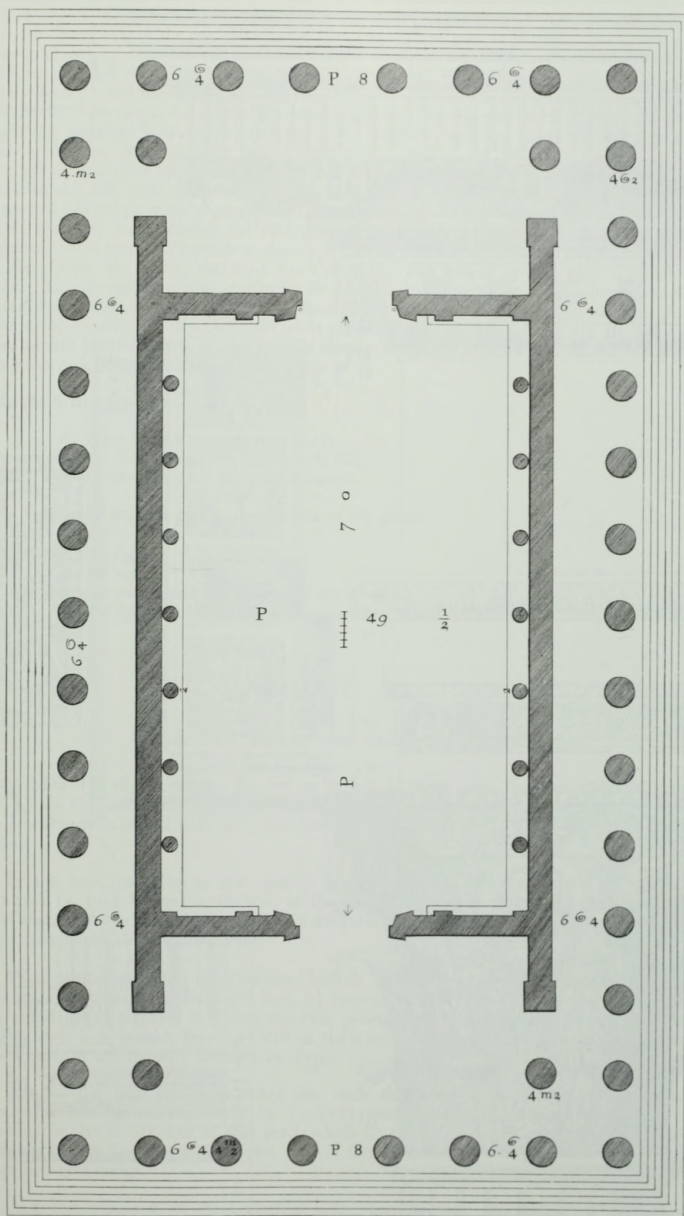
Of the temple of JUPITER, the Thunderer.

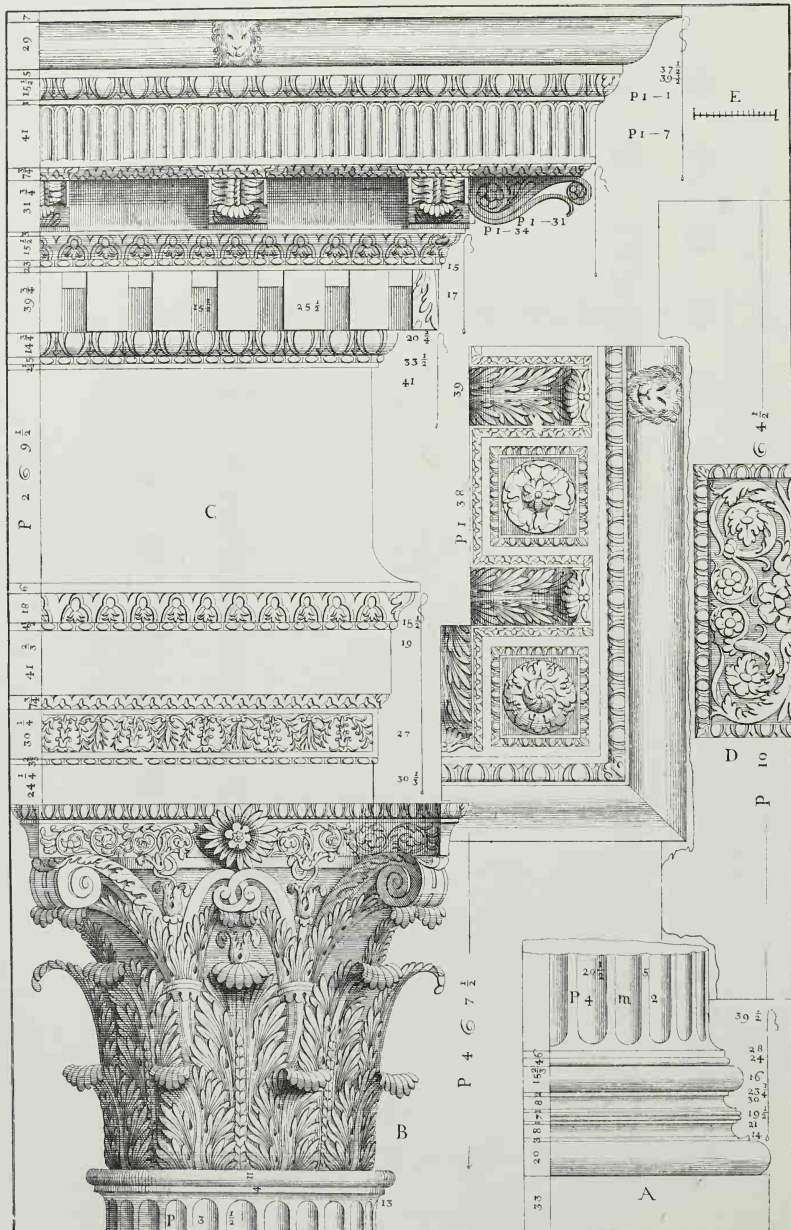
AT the foot of the *Campidoglio* some vestigia of the following temple are to be seen, which some say was that of *JUPITER* the Thunderer, and that it was built by *AUGUSTUS*, for the danger that he escaped when, in the Cantabrian war, in a voyage that he made by night, the litter wherein he was, was struck with lightning, by which a servant who was before was killed, without doing the least hurt to the person of *AUGUSTUS*. Of which I a little doubt, because the ornaments there to be seen, are wrought most delicately with most beautiful intaglio's. And it is manifest, that in the time of *AUGUSTUS* the works were made more solid; as may be seen in the portico of *Santa Maria Ritonda*, built by *M. AGRIPPA*, which is very simple, and also in other edifices. Some would have it, that the columns that are there, were of the bridge which *CALIGULA* made; which opinion I have just now shewn to be entirely false.











THE aspect of this temple was that which was called *dipteros*, that is, double winged. It is very true, that in the part towards the *Campidoglio* there was no portico. But by what I have observed in other edifices built near hills, I am apt to believe, that it was in this part made as the plan shews; that is, that it had a very thick wall, which inclosed the cella, and the portico's, and then leaving a little space, there was another wall, with abutments that went into the hill. Because in such cases the ancients made the first wall very thick, that the damp might not penetrate into the inward part of the edifice; and they made the other wall with abutments, that it might be the better able to support the weight of the hill; and they left the said space between the one and the other of the said walls, that the water which fell from the hill might there have a free course, and do no damage to the fabric. The manner of this temple was the *picnostilos*. The architrave, and the frieze in the front were in a line, that they might contain the carving of the inscription, and some of the letters are still there to be seen. The ovolo of the cornice over the frieze is different from any I have yet seen, with this variety, that there is in this cornice two sorts of ovolo's, very judiciously made. The modillions of this cornice are so disposed, that directly over the columns comes a plain space, and not a modillion, as in some other cornices; although they regularly ought to be made so, that directly over the middle of the columns there should come a modillion. And because by the designs of the temples already mentioned, the reasons for this are also comprehended, I have made only two plates of it.

In the first is the plan.

Plate 49.

- A, is the space between the two walls.
- B, are the abutments that go into the hill.
- C, are the spaces between the abutments.

In the second are the particular members of the portico.

Plate 50.

- A, the base.
- B, the capital.
- C, the architrave, the frieze, and the cornice.
- D, the *soffit* of the architrave between the columns.

CHAP. XX.

Of the PANTHEON, now called the Ritonda.

AMONG all the temples that are to be seen in *Rome*, none is more celebrated than the *Pantheon*, now called the *Ritonda*, nor that remains more entire; since it is to be seen almost in its first state as to the fabric, but stript of the statues, and other ornaments.

IT was built, according to the opinion of some, by M. AGRIPPA about the year of CHRIST 14. but I believe that the body of the temple was made at the time of the Republick, and that M. AGRIPPA added to it only the portico; which may be apprehended from the two frontpieces that are in the front.

THIS temple was called the *Pantheon*, because after JUPITER, it was consecrated to all the gods; or perhaps (as others will have it) because it is of the figure of the world, that is, round; being as much in height from the pavement up to the opening, where it receives light, as it is in breadth from one wall to the other. As one descends now to the floor, or pavement, so one formerly ascended by steps.

AMONG the most celebrated things one reads that were in the temple, there was an ivory statue of MINERVA, made by PHIDIAS; and another of VENUS, who had for a pendent in her ear the half of that pearl which CLEOPATRA drank after supper to surpass M. ANTONY's liberality. This part only of this pearl they say was esteemed to be worth 250,000 gold ducats.

ALL this temple is of the Corinthian order, both without, and within. The bases are composed of the Attick, and of the Ionick. The capitals are carved in the manner of olive leaves;

the architraves, the frizes, and the cornices have most beautiful fasciæ's, or modeno's, and are with few intaglio's.

IN the thickness of the wall that encompasses the temple, there are some voids made, that the earth-quakes may the less injure the fabrick, and to save both materials and expence.

THIS temple has in the fore part a most beautiful portico, in the frieze of which these words are to be read :

M. AGRIPPA L. F. COS. III FECIT.

UNDERNEATH which, that is, in the fascia's of the architraves, in smaller letters, these other words are, which shew that the emperors SEPTIMIUS SEVERUS, and M. AURELIUS restored it, after it had been consumed by time.

IMP. CAES. SEPTIMIUS SEVERUS PIVS PERTINAX
ARABICVS PARTHICVS PONTIF. MAX. TRIB. POT.
XI. COS. III. P. P. PROCOS. ET IMP. CAES. MARCVS.
AVRELIVS ANTONINVS PIVS FELIX AVG. TRIB.
POT. V. COS. PROCOS. PANTHEVM VETVSTATE
CVM OMNI CVLTV RESTITVERVNT.

IN the inward part of the temple there are, in the thickness of the wall, seven chapels with niches, in which there must have been statues; and between one chapel and the other there is a tabernacle, so that there are eight tabernacles.

IT is the opinion of many, that the middle chapel, which is opposite to the entrance, is not antient, because the arch of it breaks some columns of the second order; but that in the christian time, after pope BONIFACE, who first dedicated this temple to divine worship, it was enlarged; as it was proper in christian times to have a principal altar greater than the others.

BUT, as I observe that it accompanies all the rest of the work very well, and that it has all its members exceedingly well wrought, I look upon it as certain, that it was also made at the time when the remainder of this edifice was erected.

THIS chapel has two columns, that is, one on each side, which project and are fluted; and the space that is between one flute and the other, is carved very neatly with an astragal. And because all the parts of this temple are very remarkable, and that the whole may be seen, I have made ten plates of it.

Plate 51. IN the first is the plan. The stairs that are seen on each side of the entrance lead over the chapel to a secret way, which goes quite round the temple, through which one goes out to the steps, in order to ascend up to the top of the edifice by some stairs that are round it.

THAT part of the edifice that is seen behind the temple, and is marked M, is part of the baths of AGRIPPA.

Plate 52. IN the second is half of the front forwards.

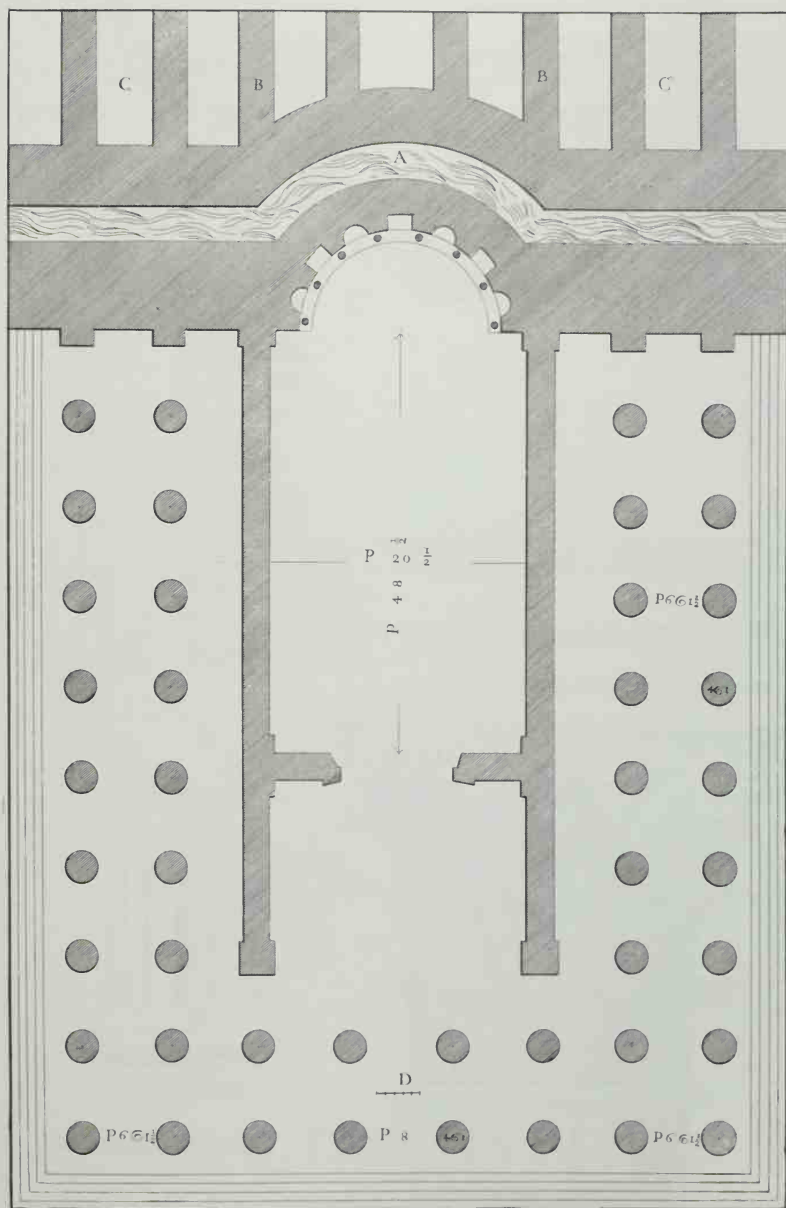
Plate 53. IN the third is half of the front under the portico.

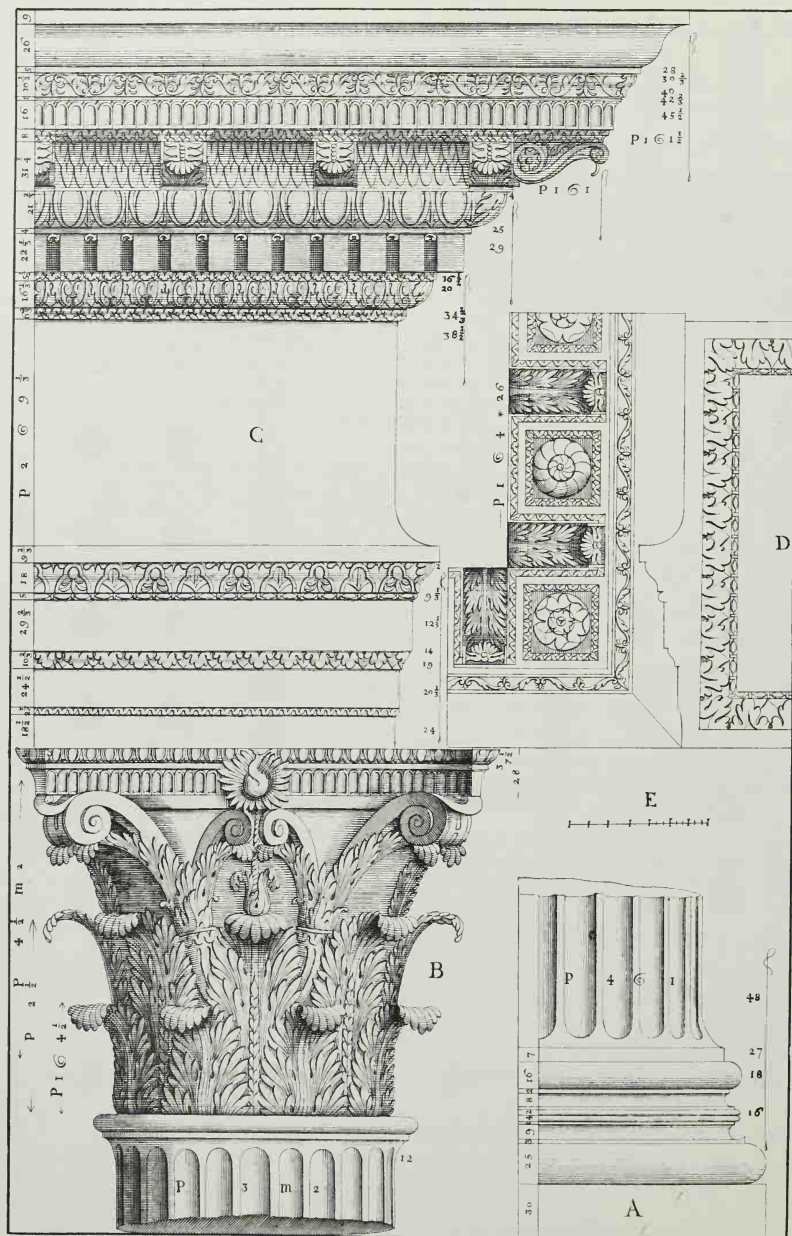
THIS temple has, as may be seen in these two plates, two frontispieces; the one of the portico, the other in the wall of the temple.

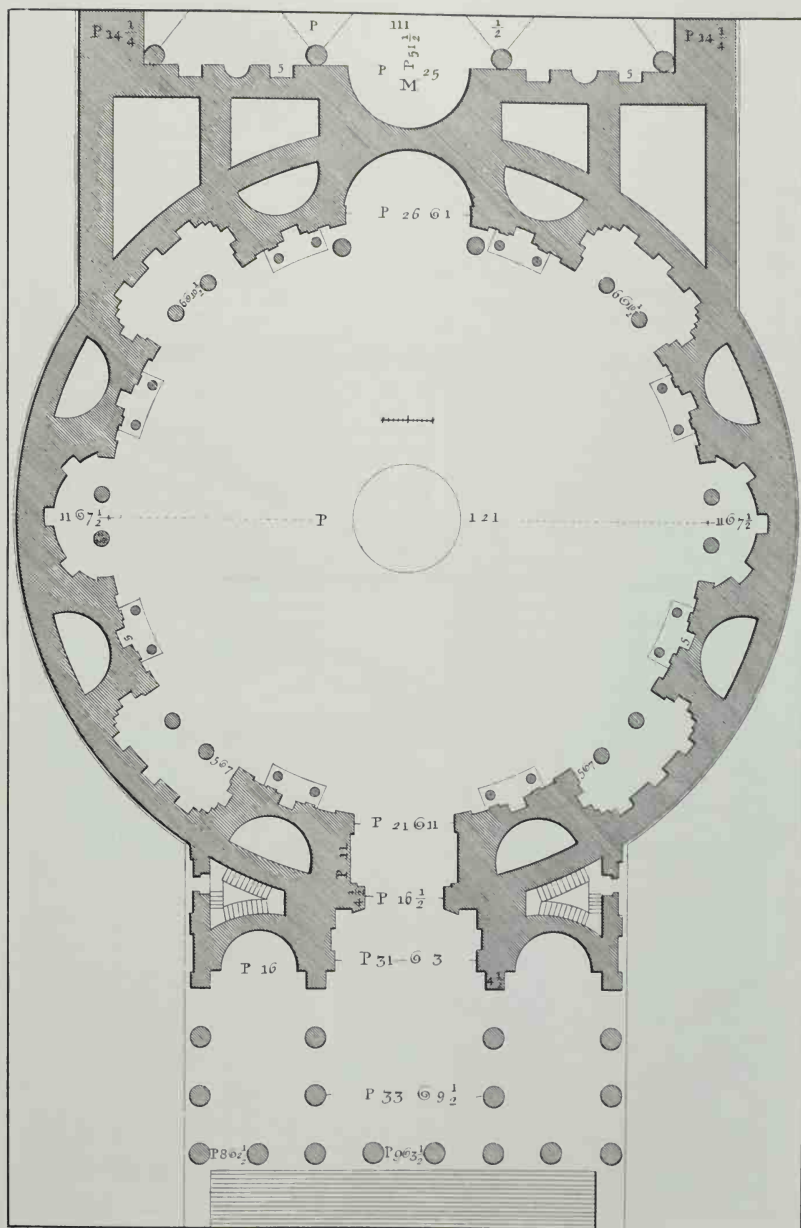
WHERE the letter T is, are some stones that come out a little: of what use these were I cannot imagine.

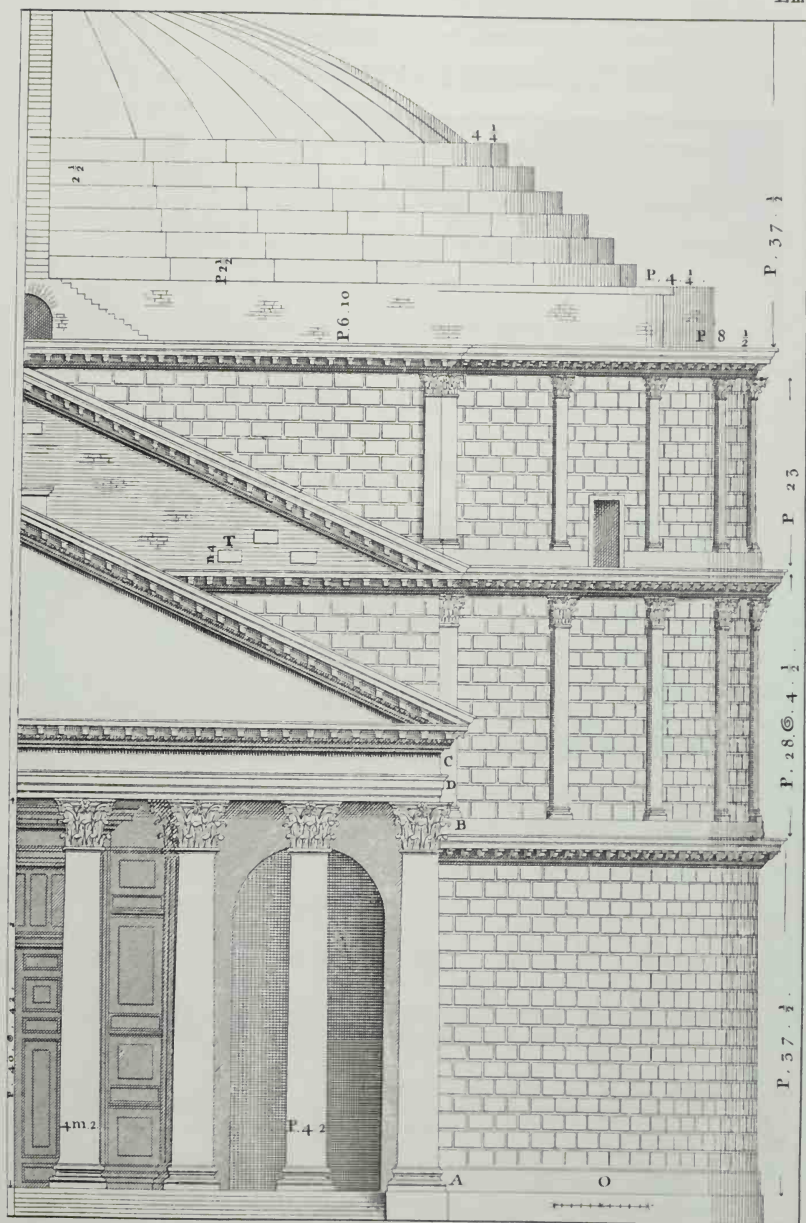
THE beams of the portico are all made of bronzo.

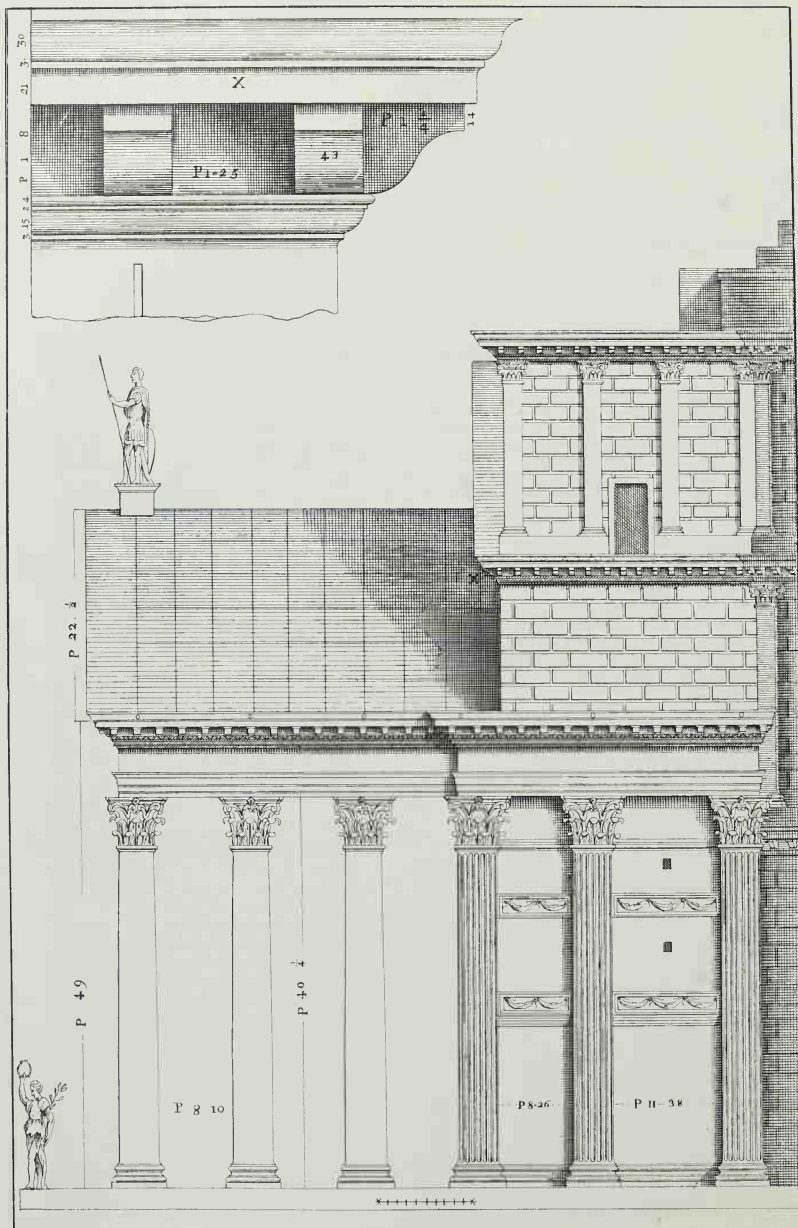
Plate 54. IN the fourth plate is the elevation of the flank of the part without.











X, is the second cornice that goes quite round the temple.

IN the fifth is the elevation of the flank in the part within.

Plate 55.

IN the sixth are the ornaments of the portico.

Plate 56.

A, the base.

B, the capital.

C, the architrave, the frieze and the cornice.

D, is the sacoma of the ornaments made over the columns, and the pilasters in the inward part of the portico.

T, the pilasters of the portico, which answer to the columns.

V, the windings of the caulicoli of the capitals.

X, the soffit of the architrave between each column.

IN the seventh is part of the elevation of the inward part opposite to the entrance, where Plate 57. is to be seen how and with what ornaments, the chapels, and the tabernacles are disposed, and how the squares are comparted in the vault; which probably (by some vestigia that are there) were ornamented with silver plates. Because, if there had been any such ornaments of bronzo, there is no doubt but those of the like sort, which (as I have said) are in the portico, would also have been taken away.

IN the eighth, in a form somewhat larger, is designed one of the tabernacles in front, Plate 58. with part of the chapels that are on the sides of it.

IN the ninth are the ornaments of the columns, and of the pilasters of the inward part. Plate 59.

L, the base.

M, the capital.

N, the architrave, the frieze and the cornice.

O, the windings of the caulicoli of the capitals.

P, the fluting of the pilasters.

IN the tenth are the ornaments of the tabernacles that are between the chapels; in which Plate 60. the fine judgment of the architect is to be observed; who, to bind the architrave, the frieze and the cornice of these tabernacles, (the pilasters of the chapels not being as much out from the wall as was necessary to contain the projection of that cornice) he only made the gola dirita, and the remainder of the members he converted into a fascia.

E, is the sacoma of the ornaments of the door.

F, the design of the festoons that are on each side of the said door.

AND with this temple let an end be put to the designs of the temples that are in Rome.

CHAP. XX.

Of the DESIGNS of some temples that are out of Rome, in Italy; and, in the first place, of the temple of BACCHUS.

WITHOUT the gate, as it is now called, of *Santa Agnesa*, and by the antients *Viminalis*, from the name of the hill where it is placed, the following temple is to be seen pretty intire, which is dedicated to *Santa AGNESA*.

I BELIEVE that it was a sepulchre, because there was a very large case of porphyry found in it, very beautifully carved with vines, and little children gathering grapes; which has made some believe that it was the temple of *BACCHUS*. And because it is the common opinion, and now serves for a church, I have placed it among the temples,

BEFORE its portico the vestigia of a court are to be seen, of an oval form, which I believe was adorned with columns, and niches in the intercolumniations, which must have been for its statues.

THE loggia of the temple, by what is to be seen of it, was made of pilasters, and had three openings. In the inward part of the temple there were columns placed two and two, which supported the cuba.

ALL these columns are of granate; and the bases, the capitals, and the cornice of marble. The bases are in the Attick manner. The capitals are of the Composite order, very beautiful, and have some leaves which project from the rosa, from which the voluta's seem to spring very gracefully. The architrave, the frize, and the cornice are not very well wrought; which makes me believe that this temple was not made in good times, but in those of the latter emperors. It is very rich with works, and with various compartments; part of them of beautiful stones, and part of Mosaic work, as well in the pavement, as in the walls, and in the vaults.

OF this temple I have made three plates.

Plate 61. IN the first is the plan.

Plate 62. IN the second the elevation.

Plate 63. IN the third is to be seen how the columns were ordered that support the arches upon which the tribuna rests.

A, the base.

B, the capital.

C, the architrave, the frize, and the cornice.

D, the beginning of the arches.

E, the foot with which the said members were measured.

C H A P. XXII.

Of the TEMPLE whose vestigia are to be seen near the church of Santo SEBASTIANO, upon the Via Appia.

WITHOUT the gate of *St. Sebastiano*, which formerly was called the *Appian gate*, from the most famous way (which was with wonderful art and expence made by *APPIUS CLAUDIUS*) are to be seen the vestigia of the following edifice, near to the said church of *St. Sebastiano*. By what can be comprehended of it, it was all of baked stone.

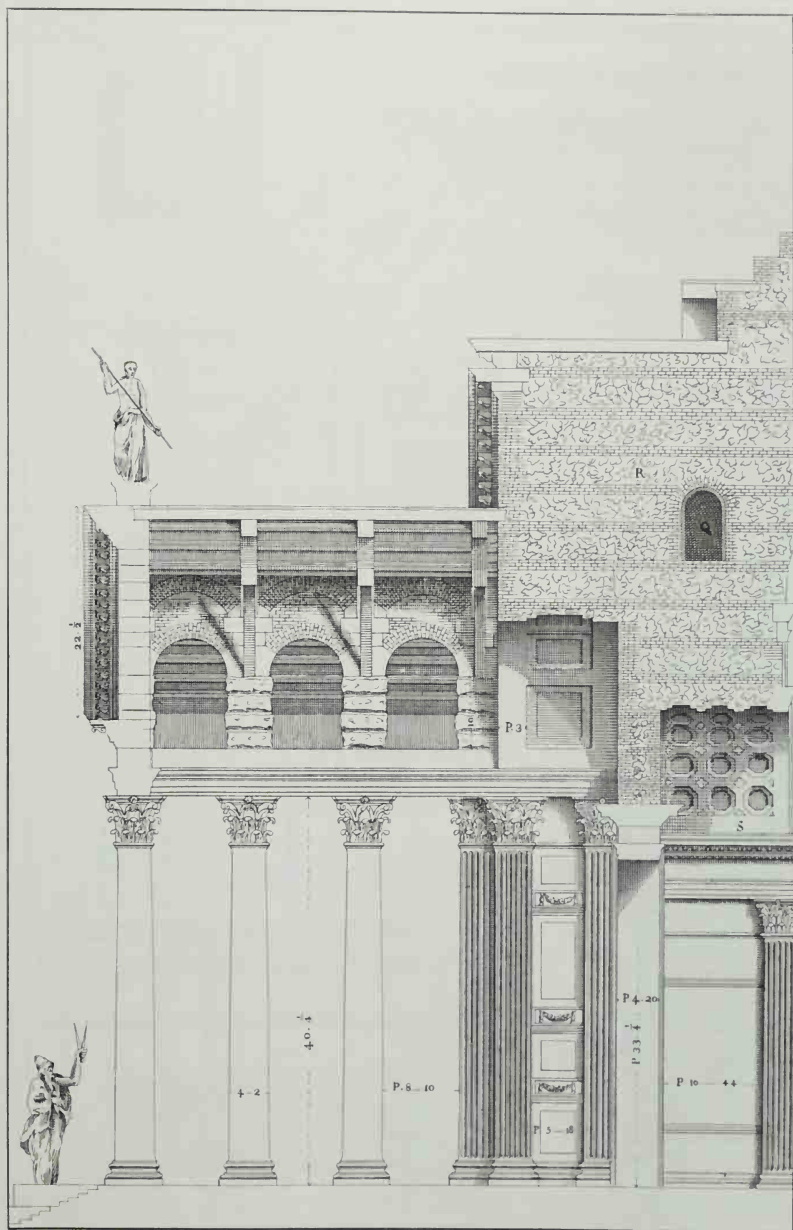
OF the loggia's that are round it there is still a part standing. The entrance into the said cortile had double loggia's; and on each side of the said entrance there were rooms, that must have served for the use of the priests.

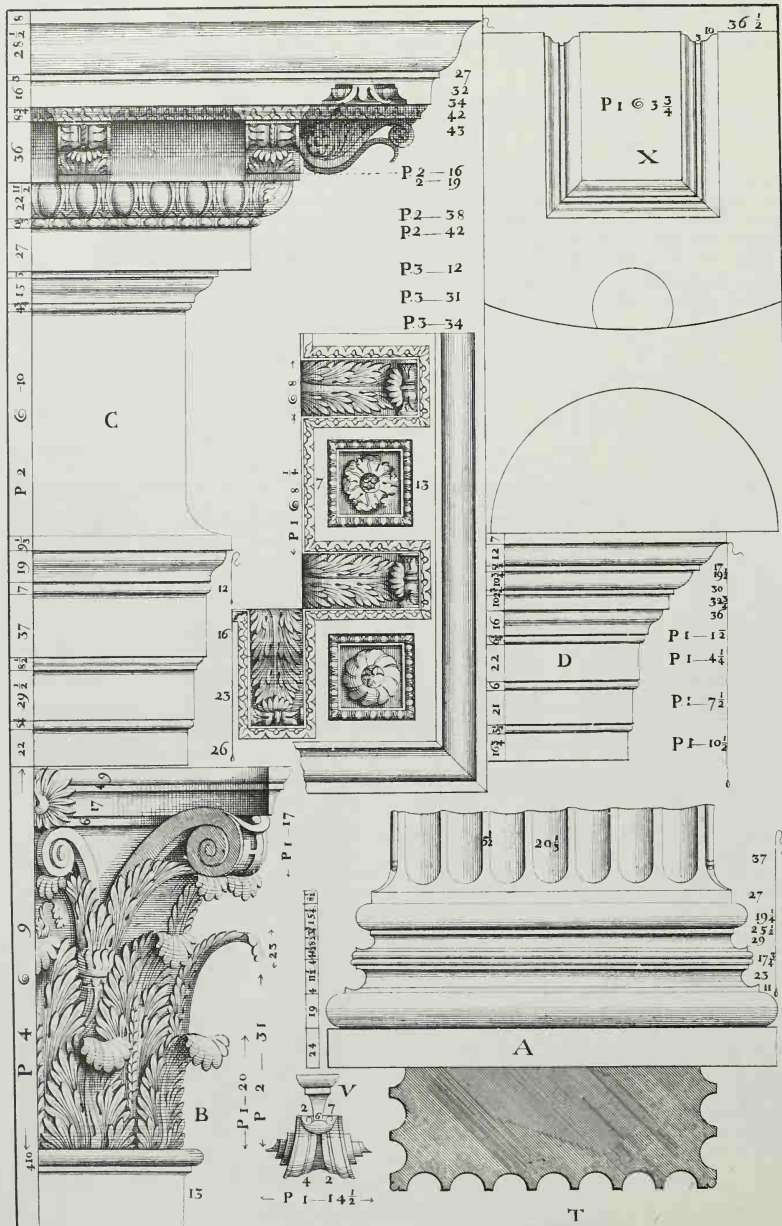
THE temple was in the middle of the cortile. The part that is to be seen, and is raised from the ground, upon which was the floor of the temple, is most solid work, and receives light only from the doors, and from six small windows that are in the niches, and therefore it is somewhat dark, as all the antient temples are. In the fore part of this temple, opposite to the entrance into the cortile, there are the foundations of the portico; but the columns have been taken away. I have nevertheless placed them of the bigness, and distance, that by the said foundations may be known they were of. And because none of the ornaments of this temple are to be seen, I have made one plate only of it, in which the plan is designed.

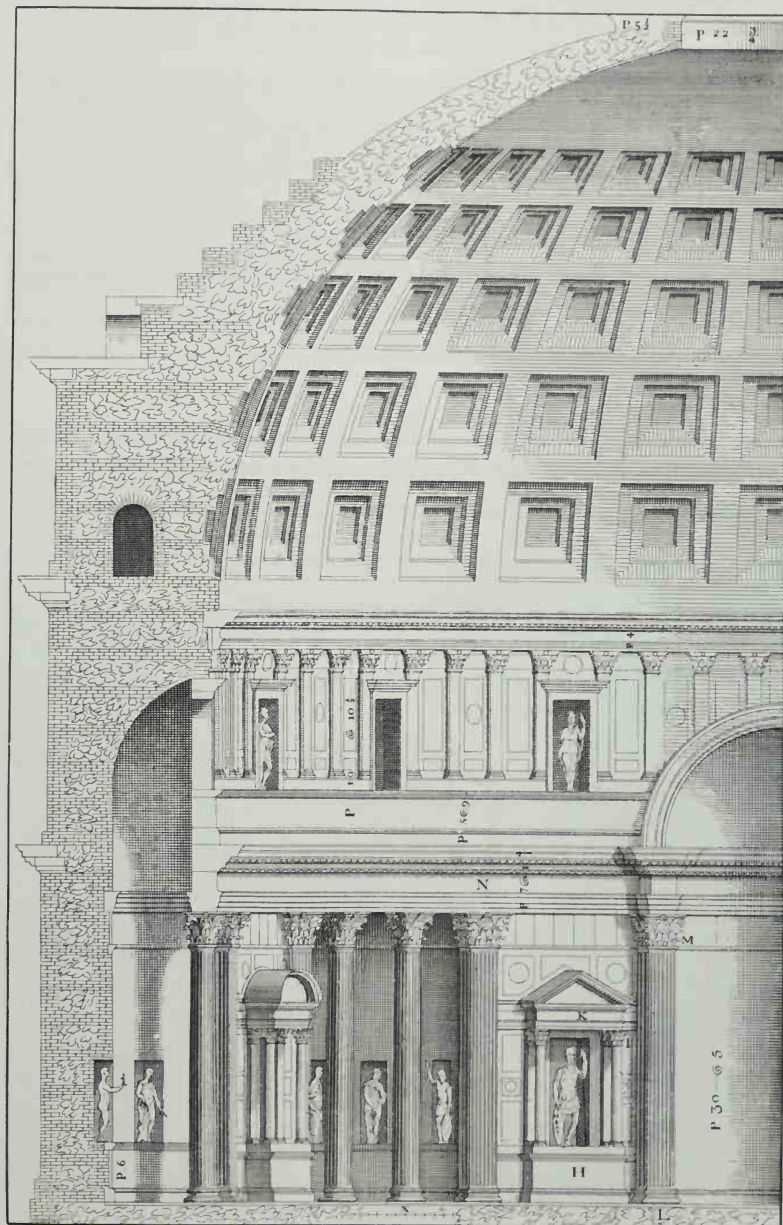
Plate 64.

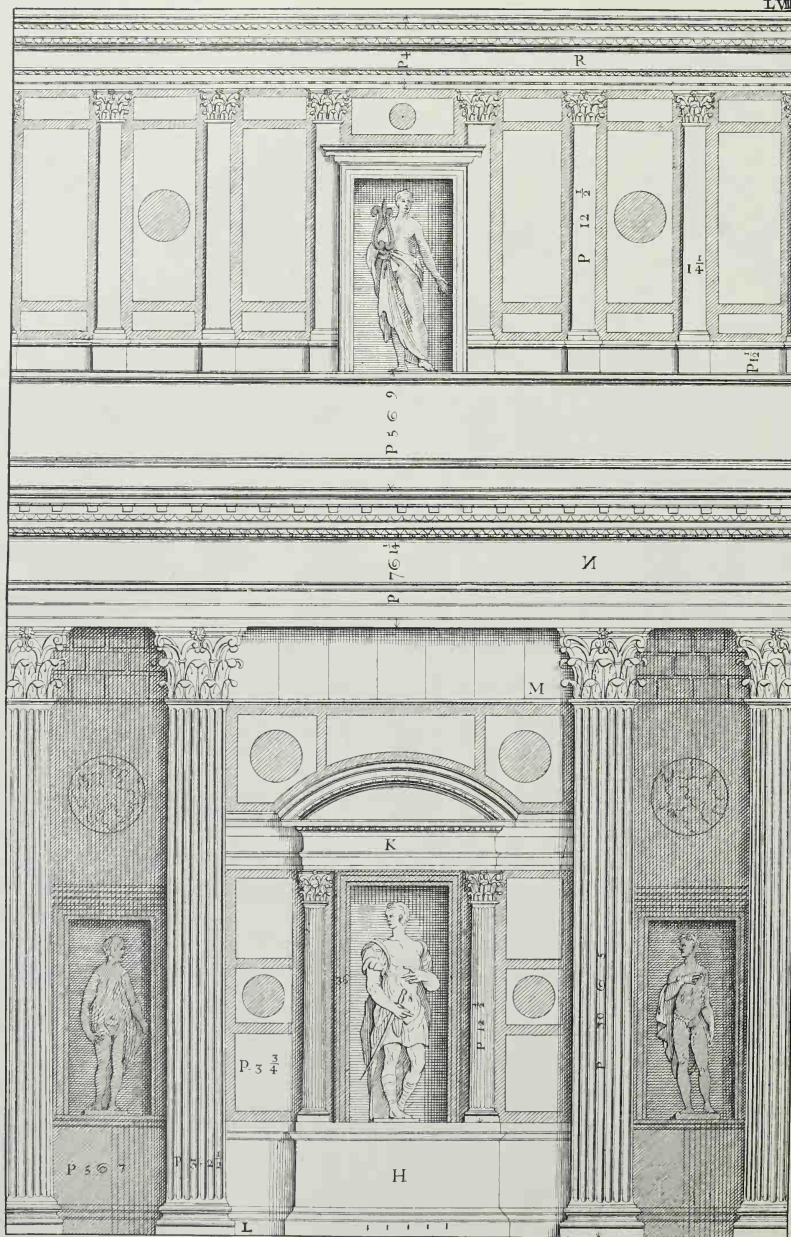
A, is the floor of the temple, and of the portico from which the columns must have begun to rise.

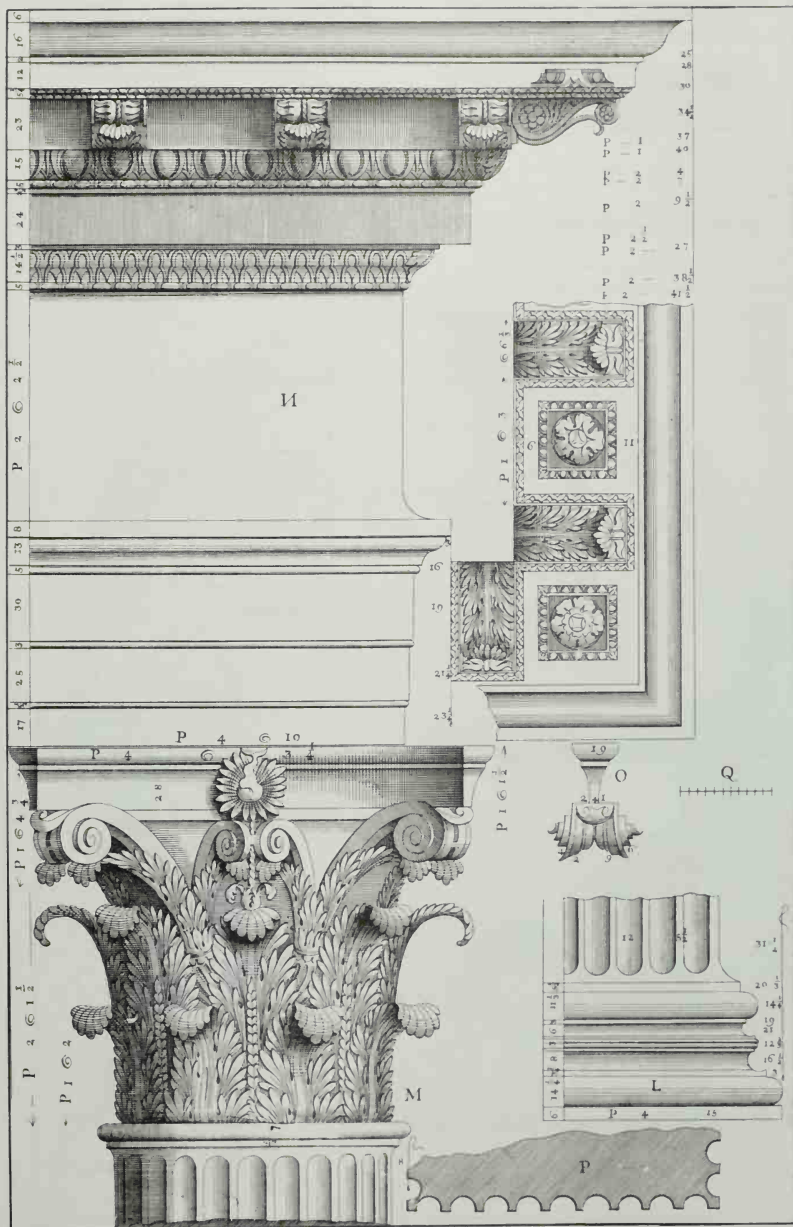
D, the

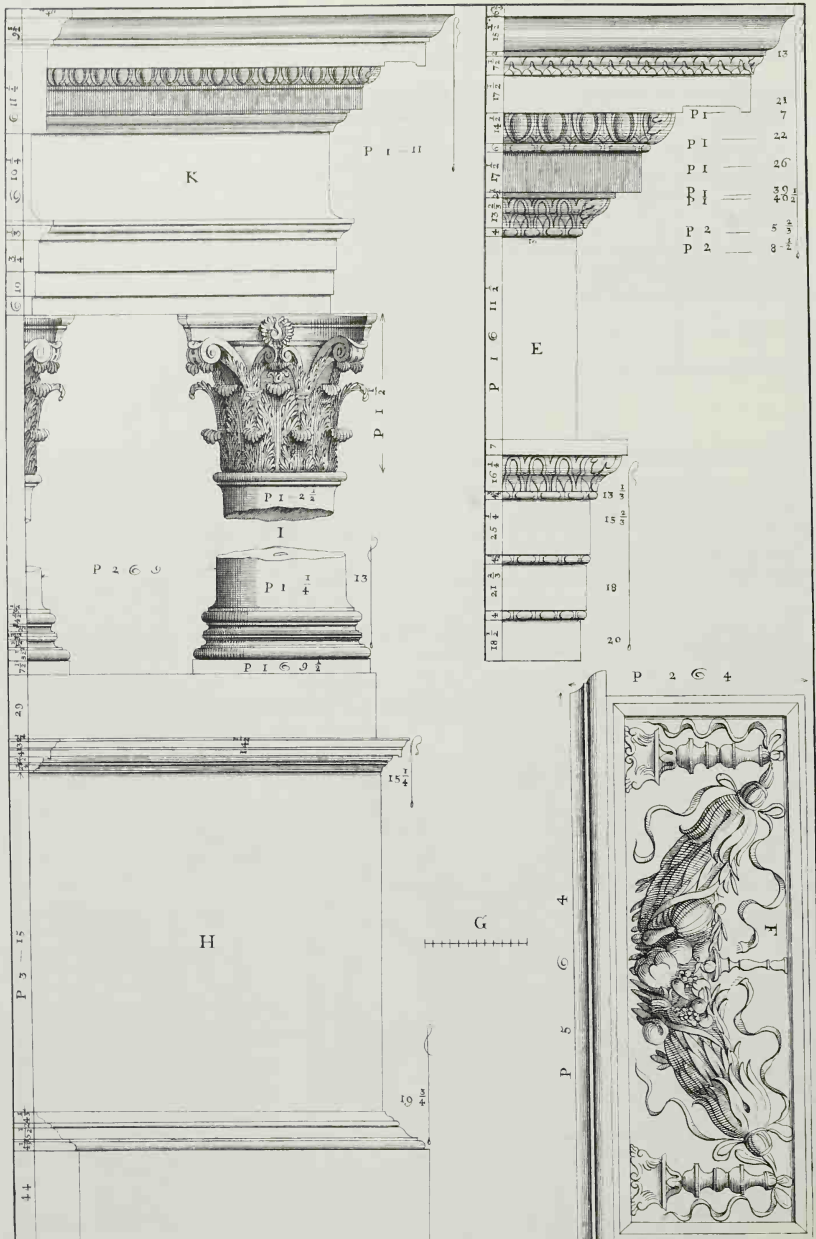


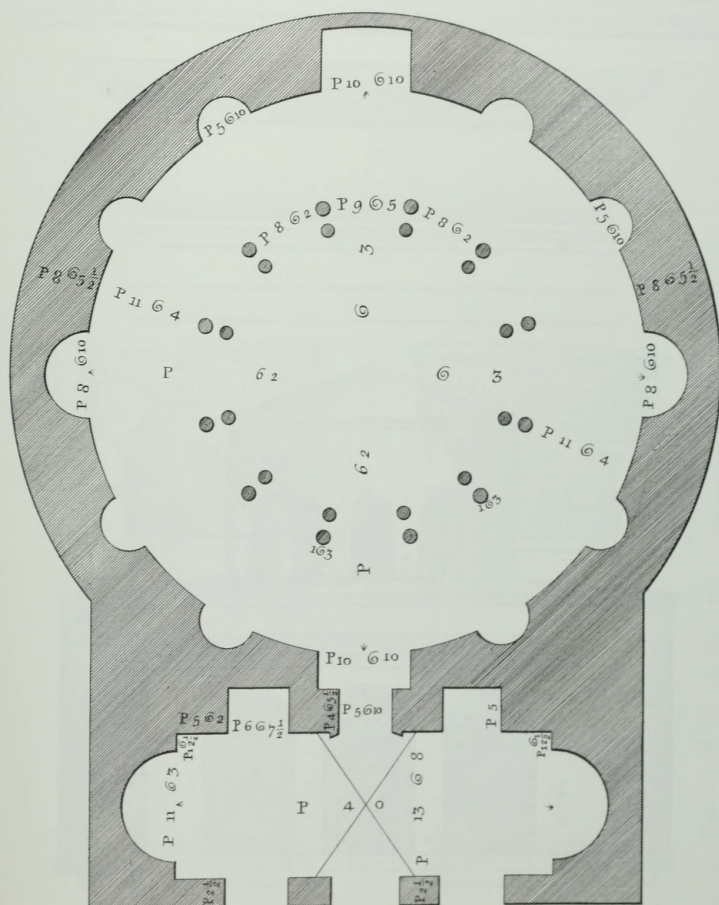


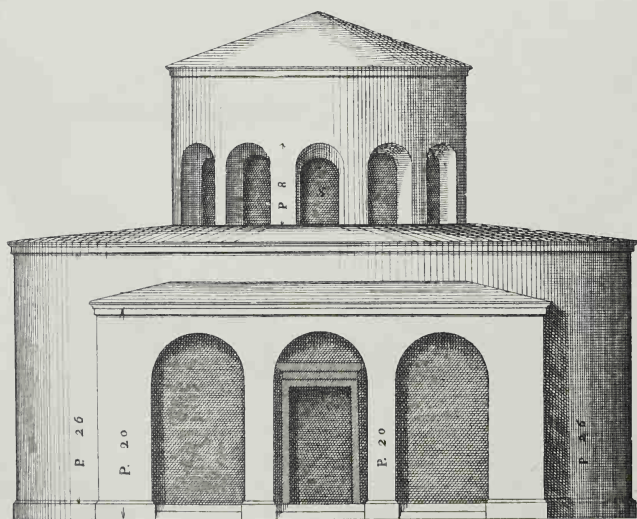


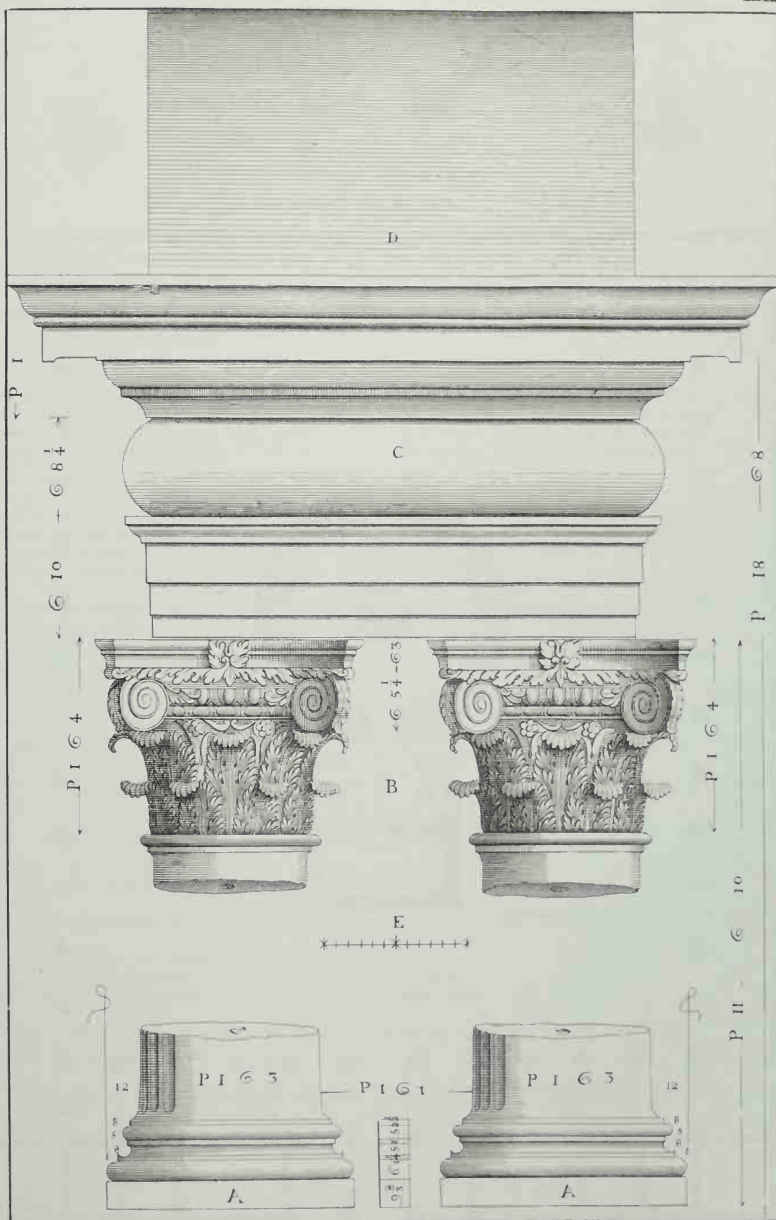


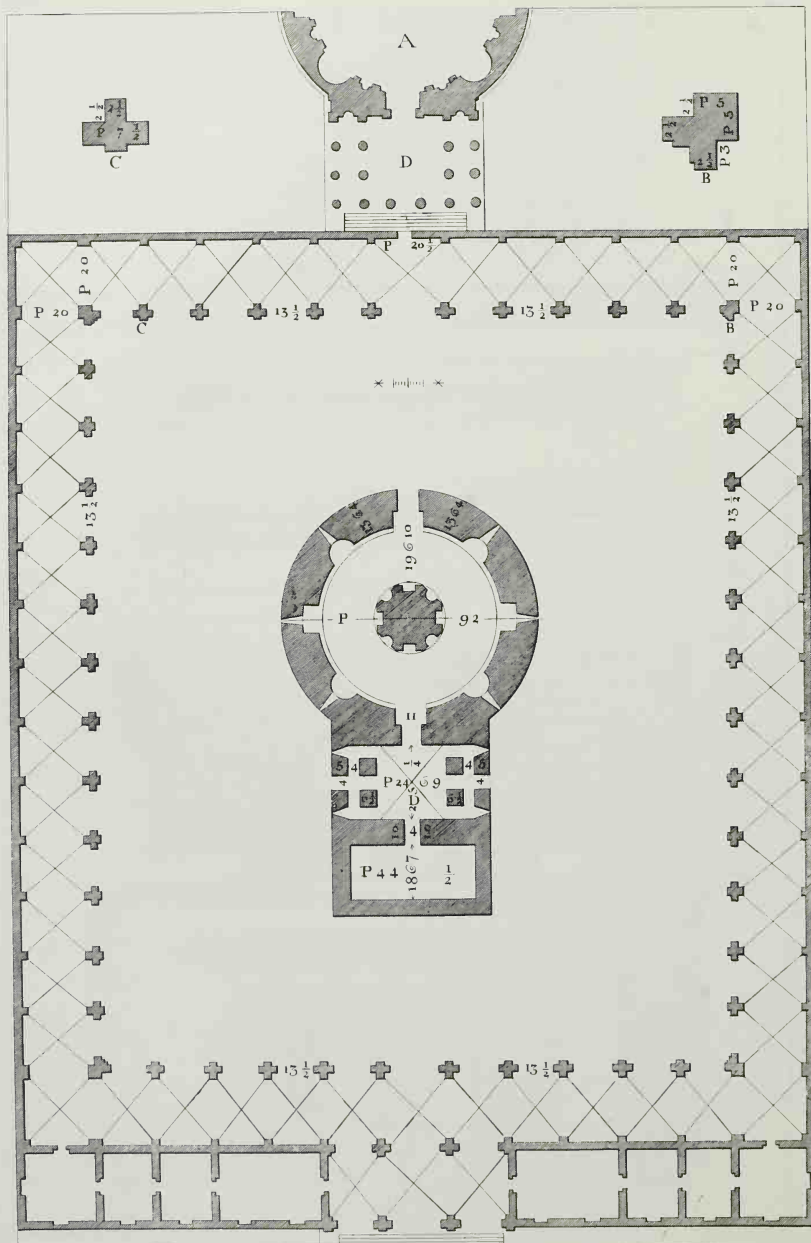












- D, the plan of the temple, and of the portico in the part under the said floor.
 B, the angular pilasters of the cortile.
 C, are the other pilasters, that form the loggia's round it.

CHAP. XXIII.

Of the temple of VESTA.

AT *Tivoli*, sixteen miles distant from *Rome*, upon the fall of the river *Aniene*, now called *Teverone*, the following round temple is to be seen, which the inhabitants of these places say was the room of the *Sibilla TIBURTINA*: which opinion is without any foundation. However I believe (for the reasons beforementioned) that it was a temple dedicated to the goddess *VESTA*.

THIS temple is of the Corinthian order. The intercolumniations are of two diameters. Its pavement is raised from the ground the third part of the length of the columns. The bases have no plinth, that the place to walk in under the portico might be more free and ample. The columns are as long exactly as the cell is broad, and they incline inwardly towards the wall of the cell; so that the shaft of the column above falls perpendicularly upon the shaft of the column below in the inward part.

THE capitals are exceedingly well made, and are wrought in the manner of olive leaves; I therefore believe that it was built in good times. Its door, and the windows, are narrower in the upper part than in the lower, as *VITRUVIUS* teacheth they ought to be made, in the sixth chapter of the fourth book.

ALL this temple is of *pictra tiburtina* covered with a very light stucco, hence it appears to be made of marble.

I HAVE made four plates of this temple.

IN the first the plan is designed.

Plate 65.

IN the second the elevation.

Plate 66.

IN the third are the members of the portico.

Plate 67.

A, is the basement that goes round the temple.

B, the base of the columns.

C, the capital.

D, the architrave, the frieze, and the cornice.

IN the fourth are designed the ornaments of the door and of the windows.

Plate 68.

A, are the ornaments of the door.

B, the ornaments of the windows in the part without.

C, the ornaments of the windows in the inward part.

THE fascia's of the ornaments of the door, and of the windows, are different from the others that are usually made.

THE astragals, that are under the cimacia's, project beyond the said cimacia's; a thing I have never seen in other ornaments.

CHAP. XXIV.

Of the temple of CASTOR and POLLUX.

AT Naples, in a most beautiful part of the city, below the piazza *del Castello* and the *Vicaria*, the portico of a temple is to be seen, built and consecrated to CASTOR and POLLUX by TIBERIUS JULIUS TARSUS, and by PELAGON, a freedman of AUGUSTUS; as it appears by its inscription made with these Greek letters:

TIBERIOS ΙΟΥΛΙΟΣ ΤΑΡΣΟΣ ΔΙΟΣ ΚΟΥΡΤΙΣ ΚΑΙ ΤΗ ΠΟΛΕΙ ΤΟΝ ΝΑΟΝ ΚΑΙ ΤΑ ΕΝ ΤΡΙ ΝΑΩΙ.
ΠΕΛΑΓΟΝ ΣΕΒΑΣΤΟΥ ΑΠΕΛΕΥΘΕΡΟΣ ΚΑΙ ΕΠΙΤΡΟΠΟΣ ΣΥΝΤΕΛΕΣΑΣ ΕΚ ΤΩΝ ΙΔΙΩΝ ΚΑΘΙΕΡΩΣΕΝ.

That is,

TIBERIUS IVLIVS TARSVS JOVIS FILIJS, ET VRBI, TEMPLVM, ET QVAE IN TEMPLO.
PELAGON AVGVSTI LIBERTVS ET PROCVRATOR PERFICIENS EX PROPRIIS CONSECRAVIT.

WHICH signify, that TIBERIUS JULIUS TARSUS began to build this temple, and those things that are within it, to the sons of JUPITER, (that is, to CASTOR and POLLUX) and to the city; and that PELAGON, the freedman, and commissary of AUGUSTUS, finished it with his own money, and consecrated it.

THIS portico is of the Corinthian order. The intercolumniations are more than a diameter and an half, but do not reach to two diameters. The bases are made in the Attick manner. The capitals are carved in the manner of olive leaves, and are most carefully wrought. The invention of the caulicoli is very beautiful, that are under the rofa, which bind one another together, and seem to spring out of the leaves which adorn the other caulicoli in the upper part, which support the horn of the capital. Hence, as well by this, as by many other examples scattered throughout this book, it is evident that an architect is not restrained from departing sometimes from the common custom, provided such a variation be graceful and natural. In the frontispiece is carved a sacrifice in basso relievo, by the hand of an excellent sculptor.

SOME say that in this place there were two temples, one round, and the other quadrangular. No vestigia are to be seen of the round one, and the quadrangular is, in my opinion, modern; and therefore, leaving the body of the temple, I have only put the elevation of the

front of the portico in the first plate, and in the second its members.

Plate 69
and 70.

A, the base.

B, the capital.

C, the architrave, the frieze and the cornice.

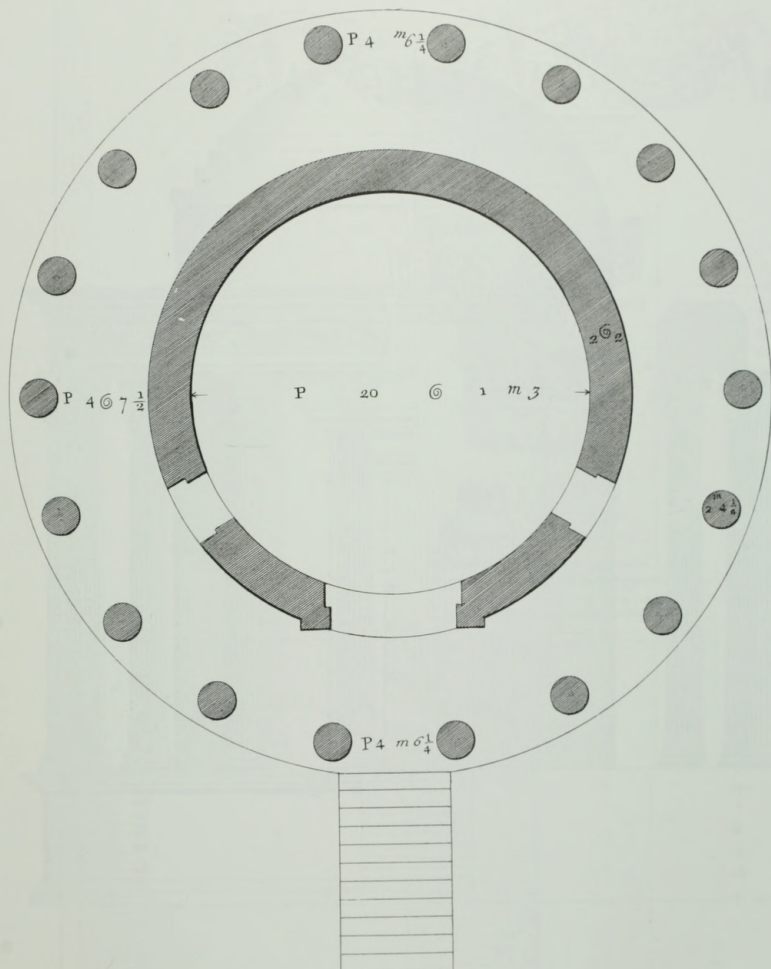
D, the foot divided into twelve inches, with which the said members are measured.

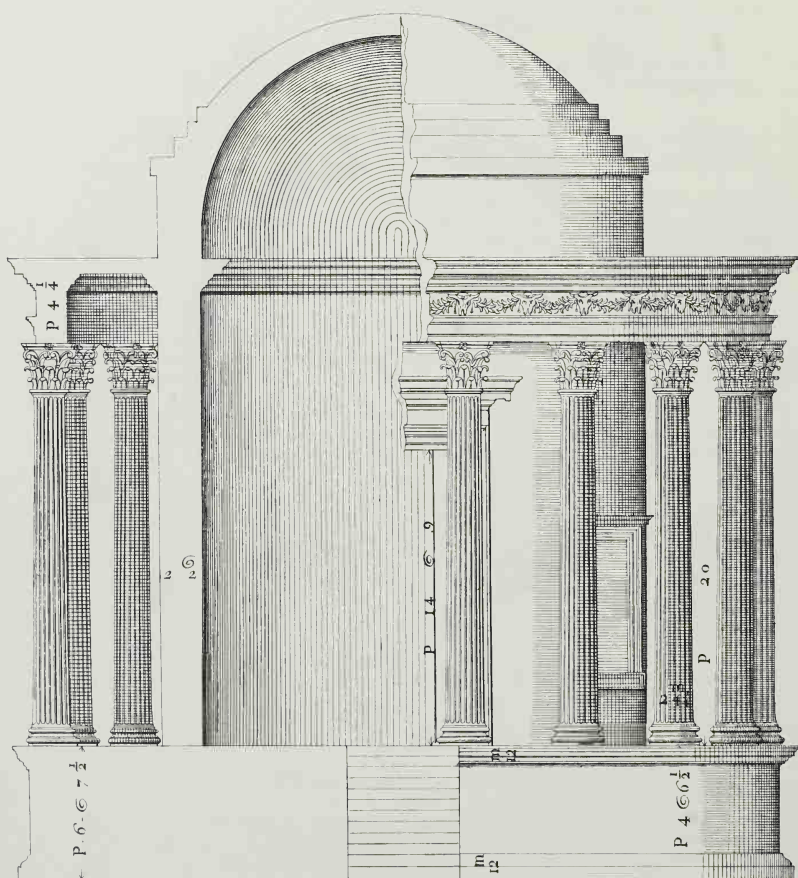
CHAP. XXV.

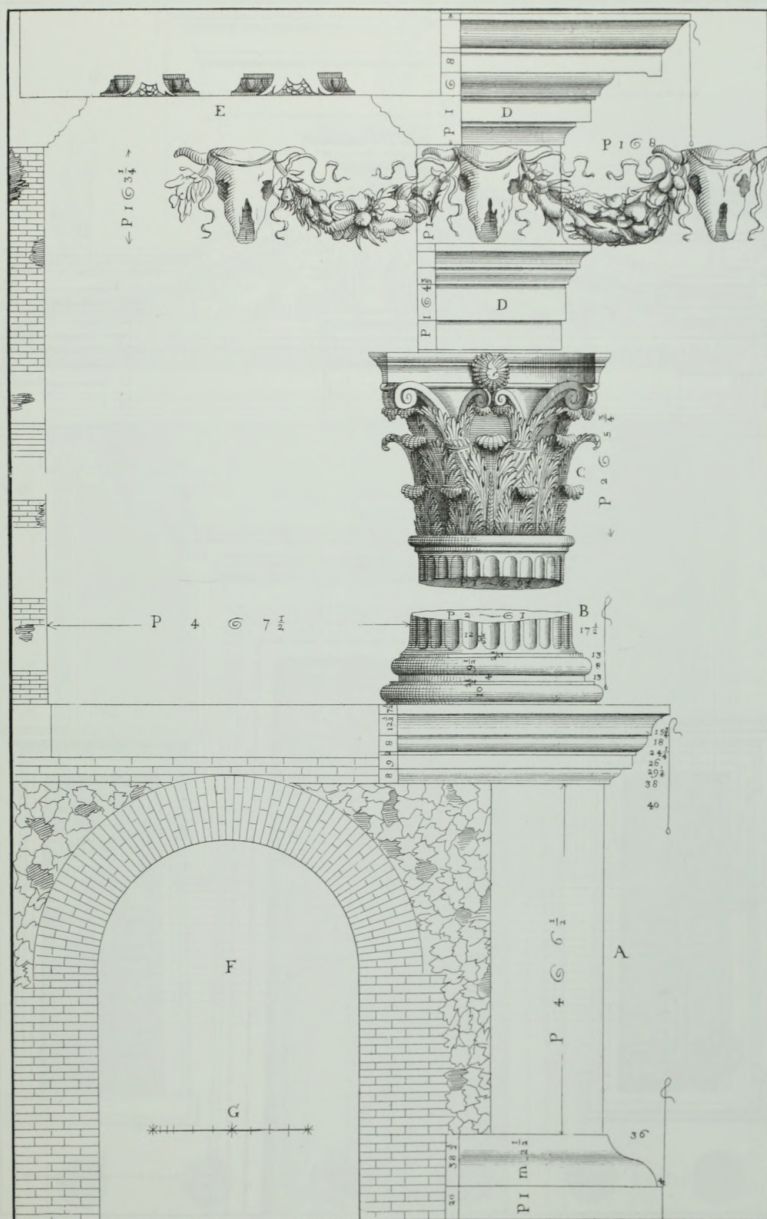
Of the temple that is below Trevi.

BETWEEN *Fuligno*, and *Spoleti*, below *Trevi*, is found the little temple, of which are the designs that follow. The basement which supports it is eight foot and an half high. To this height one ascends by the steps placed on the sides of the portico, which lead to two little portico's, that project from the remainder of the temple.

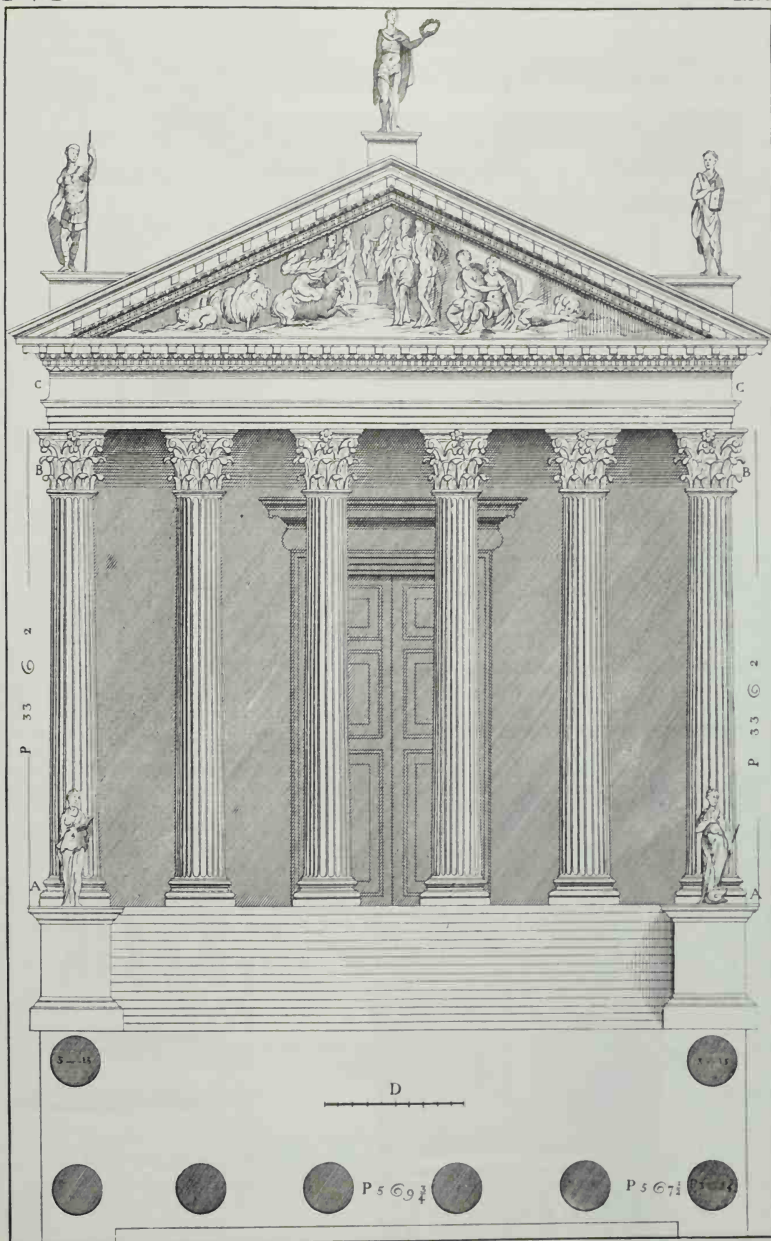
THE aspect of this temple is protilos. Its manner is thick of columns. The chapel that is opposite to the entrance into the cella has very beautiful ornaments, and the columns have wreathed flutings; and so these, as well as those of the portico's, are of the Corinthian order, delicately wrought, and with beautiful variety of intaglia's. Hence, as well in this, as in all the other temples, it evidently appears, that what I have said in the first book is true; that is, that the antients in such kinds of edifices, and particularly in the small ones, applied very great diligence in polishing each part, and in making all possible ornaments for them,

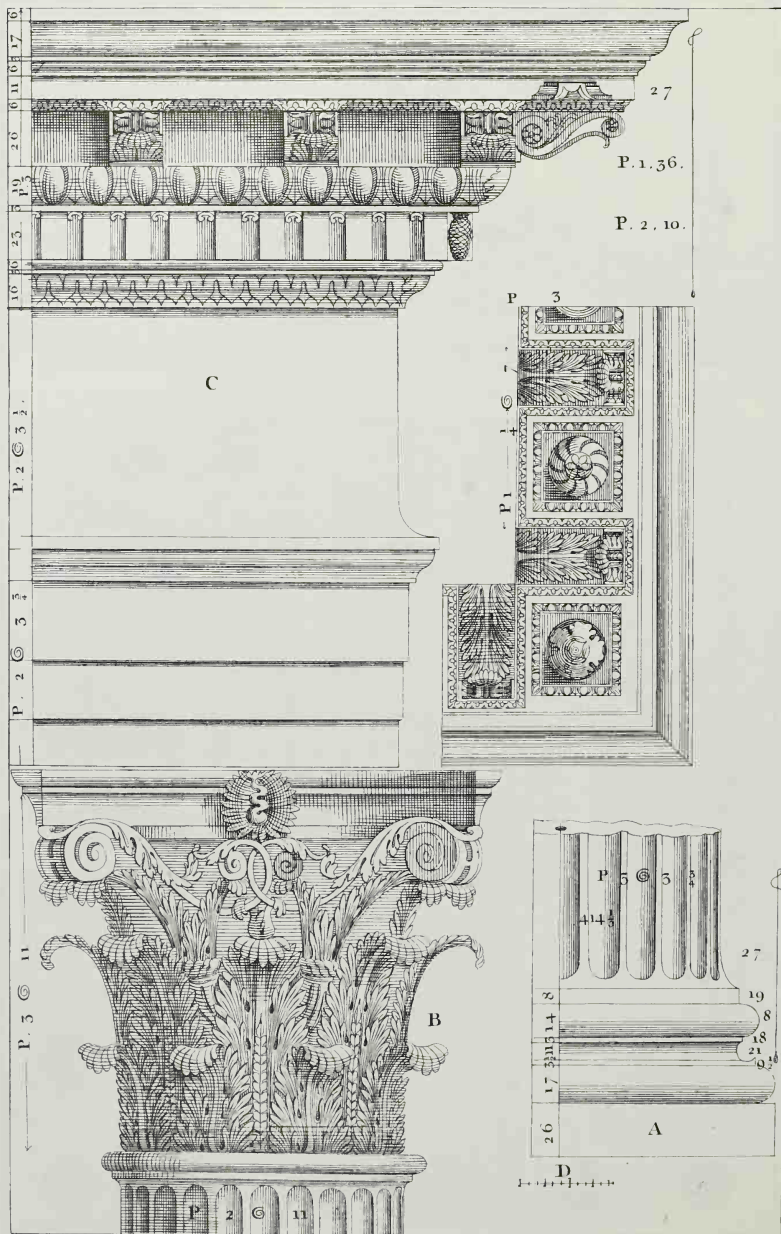












them, that they might be well : but in large fabricks, or amphitheatres, and such like, they polished some small part only, leaving the remainder rough, to save expence, and the time that would have been waisted in polishing the whole ; as shall be seen in the book of the amphitheatres, which I hope soon to put out.

I HAVE made four plates of this small temple.

IN the first is the plan, where the floor of the temple is marked, A.

Plate 71.

B, is the plan of the portico under the said floor.

C, the base

D, the cimacia } of the basement which encompasses and supports the whole temple.

E, the base of the columns of the fore front.

F, the base

G, the capital and cornice } of the columns and pilasters of the little portico's, to which the steps lead.

IN the second is the elevation of half the front on the outside.

Plate 73.

H, the architrave, the frieze, and the cornice.

IN the third is the elevation of half the part within.

Plate 72.

L, the capital of the portico.

IN the fourth is the elevation of the flank.

Plate 74.

CHAP. XXVI.

Of the temple of SCISI.

THE following temple is upon the piazza of *Scifi*, a city of *Umbria*, and is of the Corinthian order. The pedestals placed under the columns of the portico are well worthy notice ; because, as I have said before, in all the other antient temples, the columns of the portico's are seen to come down to the ground ; neither have I seen any other that had pedestals. Beneath one pedestal and the other are the steps that ascend from the piazza to the portico. The pedestals are as high as the middle intercolumniation is broad, which is two inches broader than the others. The manner of this temple is that which *VITRUVIUS* calls *stilos*, that is, of two diameters.

THE architrave, the frieze and cornice together are the fifth part and a little more of the height of the columns. The cornice, which makes the frontispiece instead of modillions, has some leaves, and in the remainder it is entirely like that which goes directly over the columns. The cella of the temple is in length the fourth part more than its breadth.

I HAVE made three plates of it.

IN the first is the plan.

Plate 75.

IN the second is the elevation of the front forward.

Plate 76.

IN the third are the ornaments.

Plate 77.

A, the capital, the architrave, the frieze, and the cornice.

B, the pedestal, and the base of the columns.

C, the cornice which forms the frontispiece.

D, the foot divided into twelve inches.

C H A P. XXVII.

Of the designs of some temples that are out of Italy; and, first, of the two temples of POLA.

IN *Pola*, a city of *Istria*, besides the theatre, amphitheatre, and an arch, most beautiful edifices, of each of which mention shall be made, and their designs put in their places, there are upon the piazza, on the same part, two temples of the same bigness, and with the same ornaments, distant the one from the other fifty eight feet and four inches; the designs of which follow.

THEIR aspect is the profilos. The manner is that, which, according to *VITRUVIUS*, I have before called *sistilos*, that has the intercolumniations of two diameters; and the intercolumniation in the middle is of two diameters and a quarter. Round these temples there goes a basement, at the height of which they have their floor, or pavement; and the ascent to it is by steps placed in the front forwards, as has been seen in many other temples. The bases of the columns are in the Attick manner, and have the orlo as thick as all the rest of the base. The capitals are in the manner of olive leaves, very neatly wrought. The caulicoli are dressed with oak leaves; which variety is seen but in few others, and is worthy of notice. The architrave is also different from the greater part of the others; because its first fascia is large, the second less, and the third under the cimacium is also less. These fascia's project forward in the lower part; which was done that the architrave might have but little projection, and thus might not obstruct the letters which are in the frieze in the front, which are these:

ROMAE ET AVGVSTO CAESARIS INVI. F. PAT. PATRIAE.

THE foliage made in the said frieze goes round the other parts of the temple. The cornice has but few members, and is wrought with the usual *intaglia's*. The ornaments of the door are not to be seen; I have, nevertheless, inserted them in the manner I think they must have been. The cella is in length one fourth part more than its breadth. The whole temple, including the portico, is above two squares in length.

I HAVE made three plates of these temples.

Plate 78. IN the first is designed the plan.

B, is the pedestal, upon which is the base of the columns.

Plate 79. IN the second is the elevation of the front forwards.

E, the architrave, the frieze and the cornice over the columns.

P, the ornaments of the door, made according to my invention.

Plate 80. IN the third is the elevation of the flank.

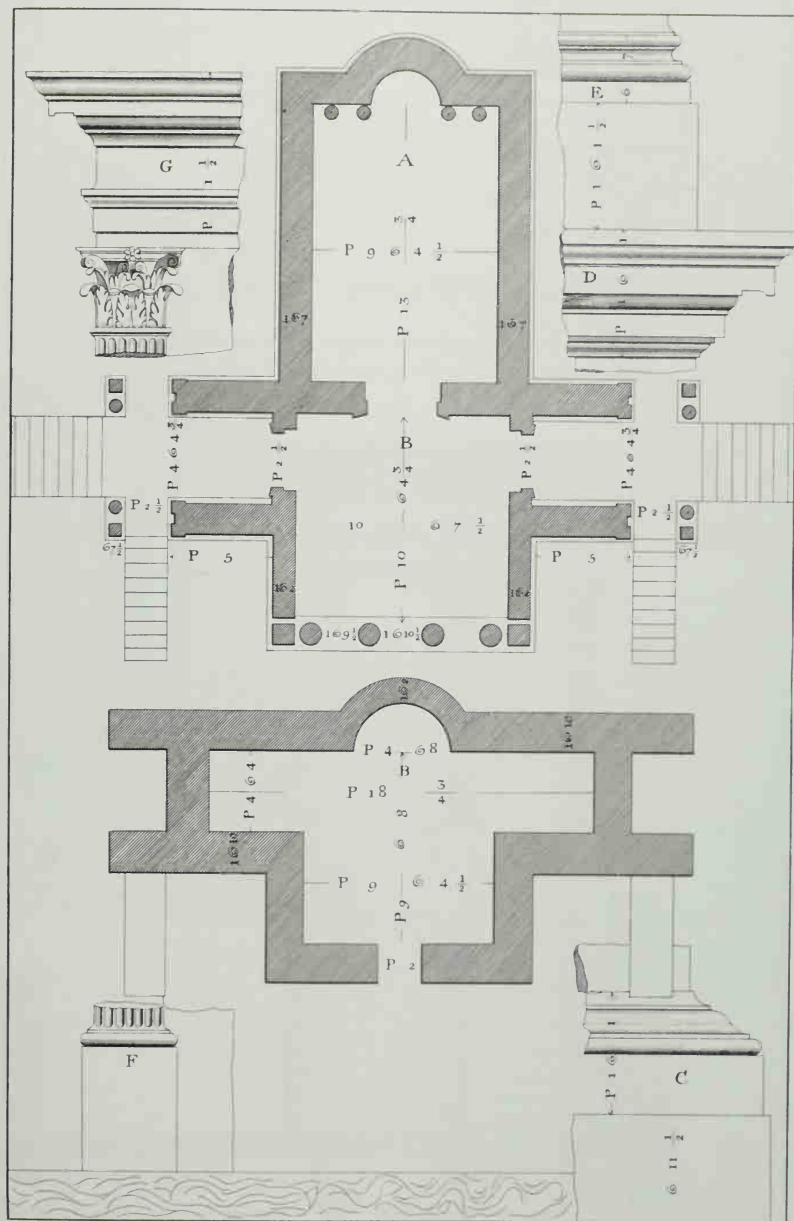
D, the campana of the capital.

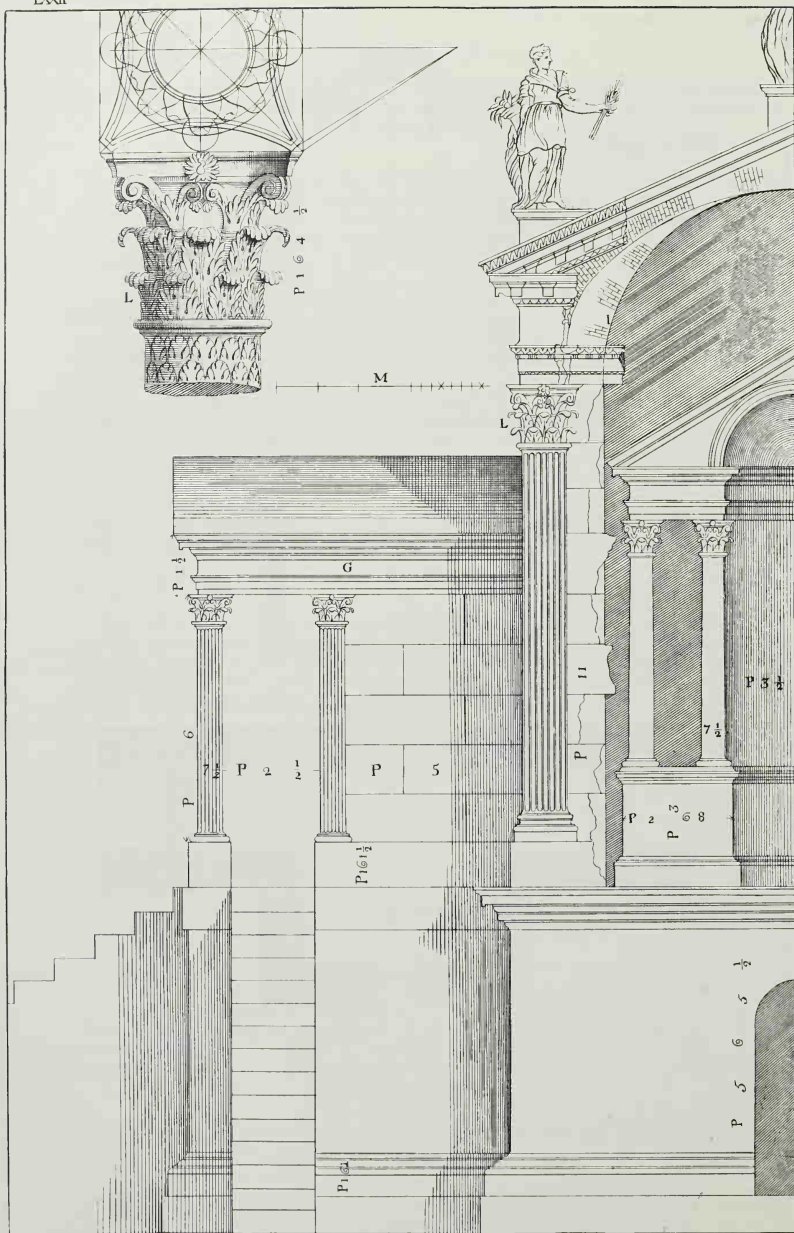
F, the plan of the said capital.

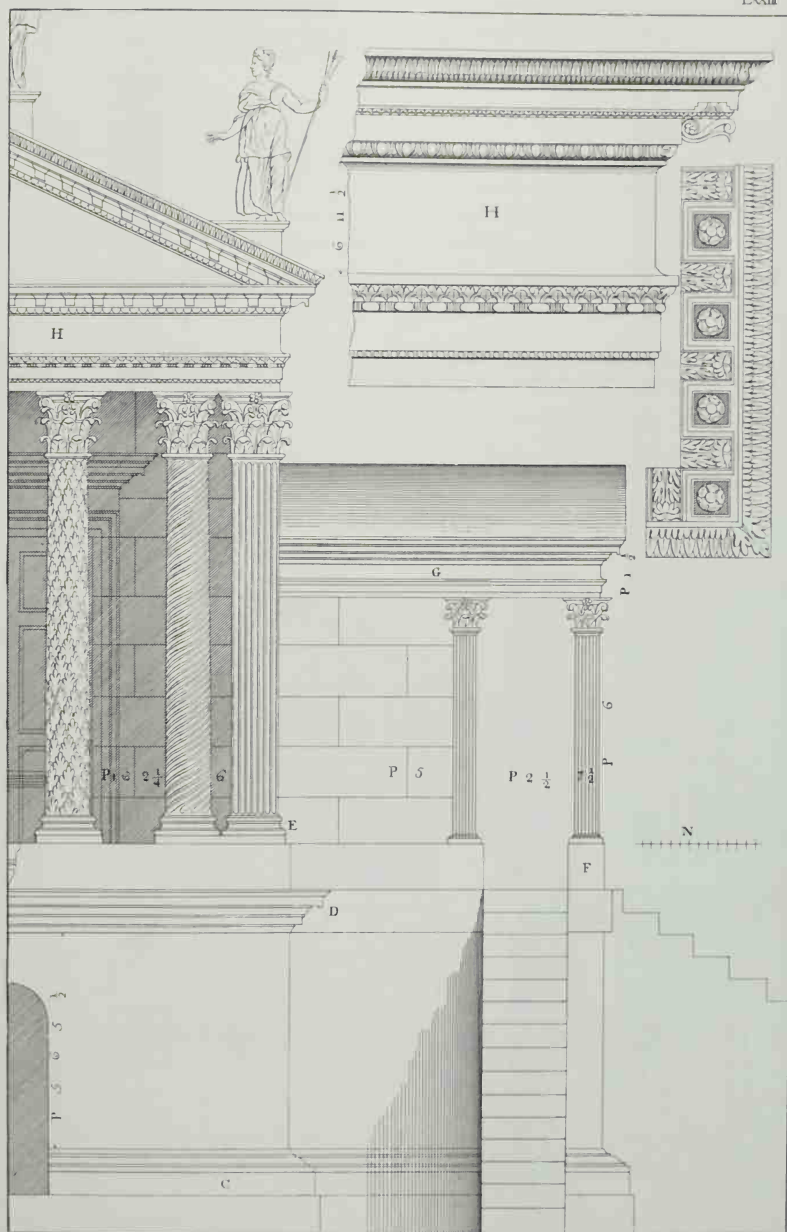
C H A P. XXVIII.

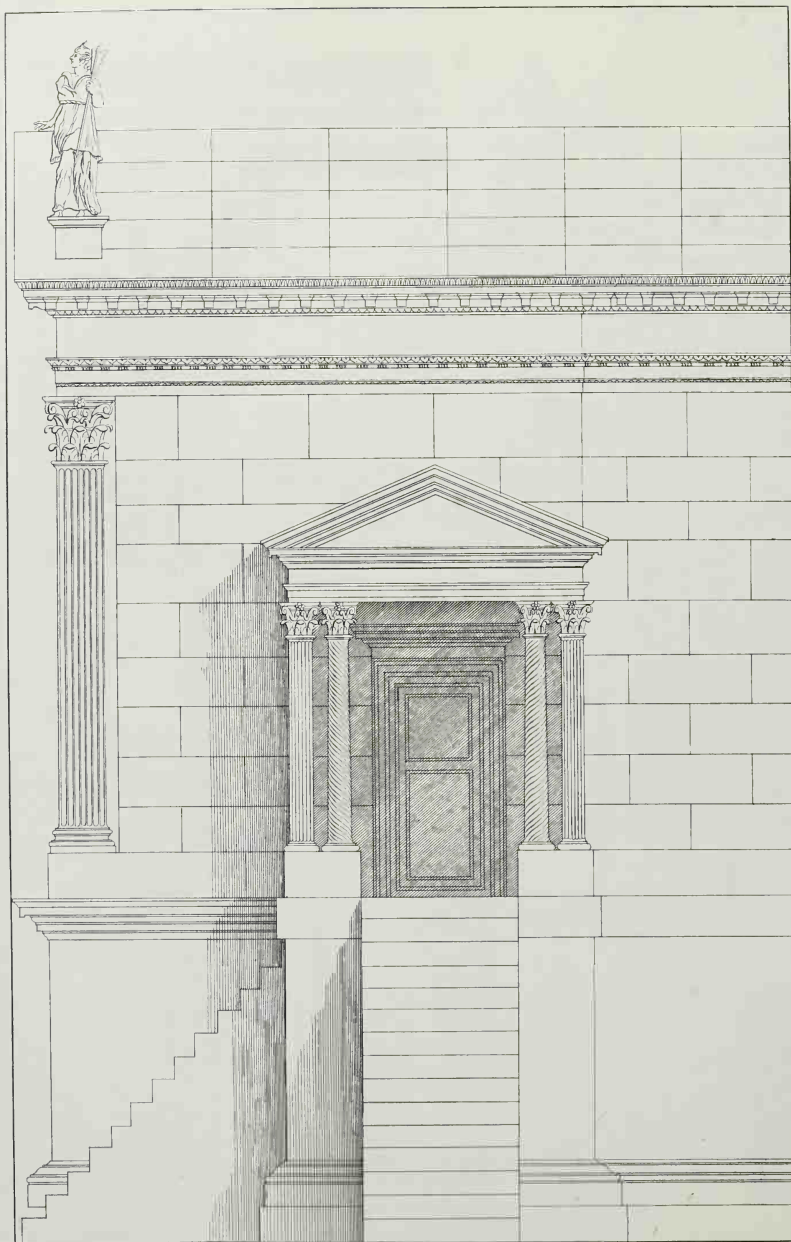
Of two temples of NISMES; and, first, of that which is called La Maison Quaree.

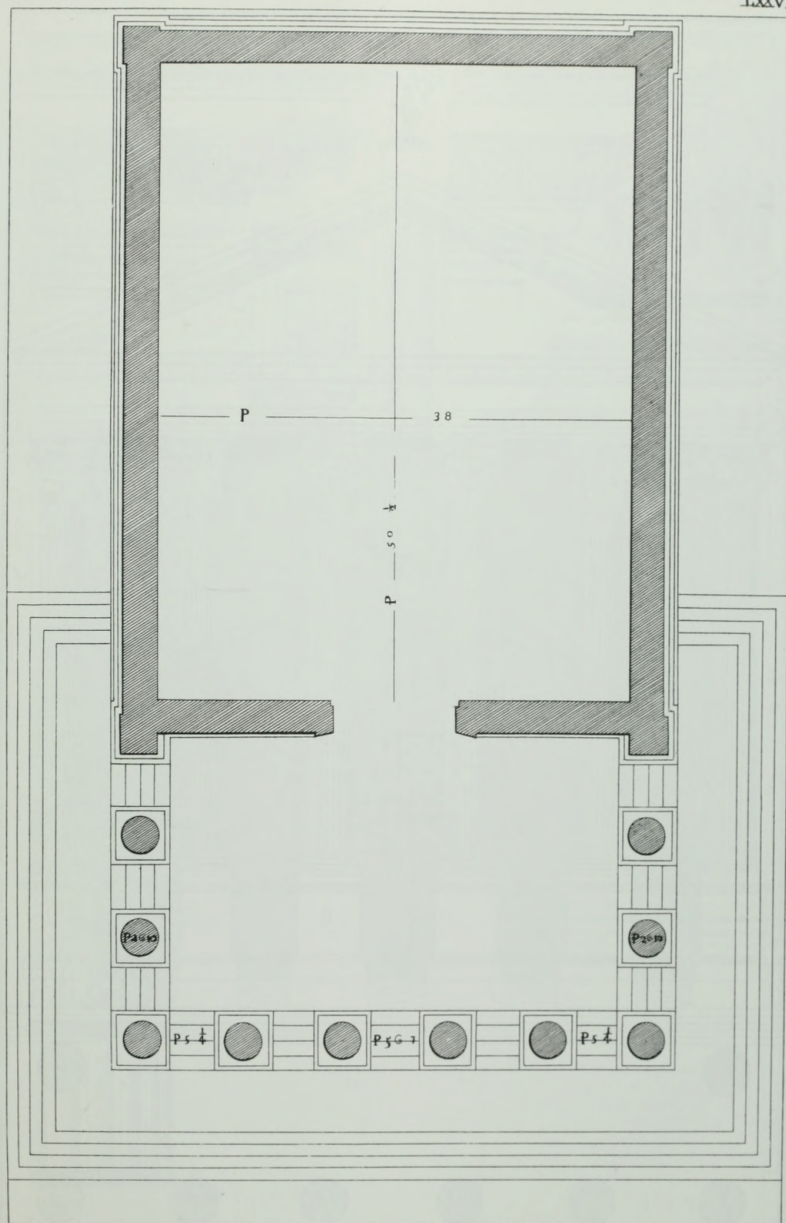
IN *Nismes*, a city of *Provence*, which was the native country of *ANTONINUS PIUS* the emperor, among many other beautiful antiquities, the two following temples are to be seen. This first is by the inhabitants of that city called *La Maison Quaree*, because it is of a quadrangular form, and they say it was a basilica. (What basilica's were, their use, and how

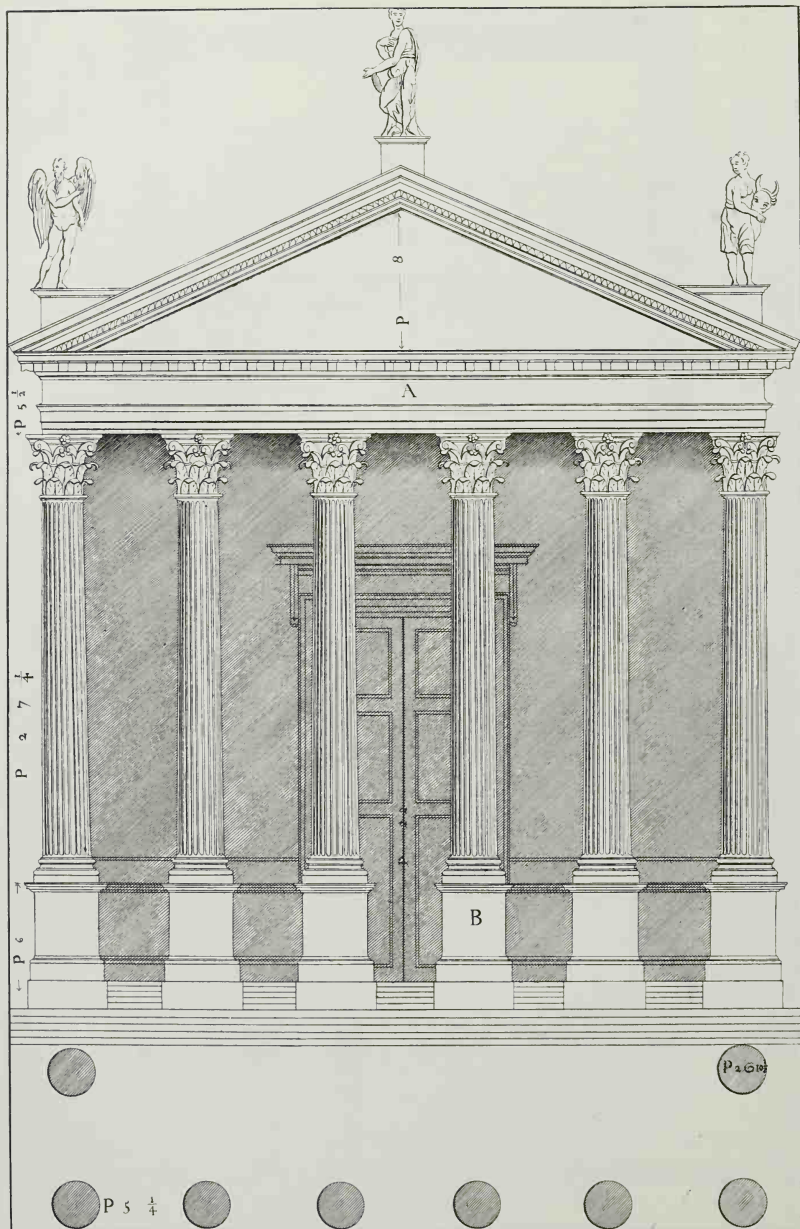


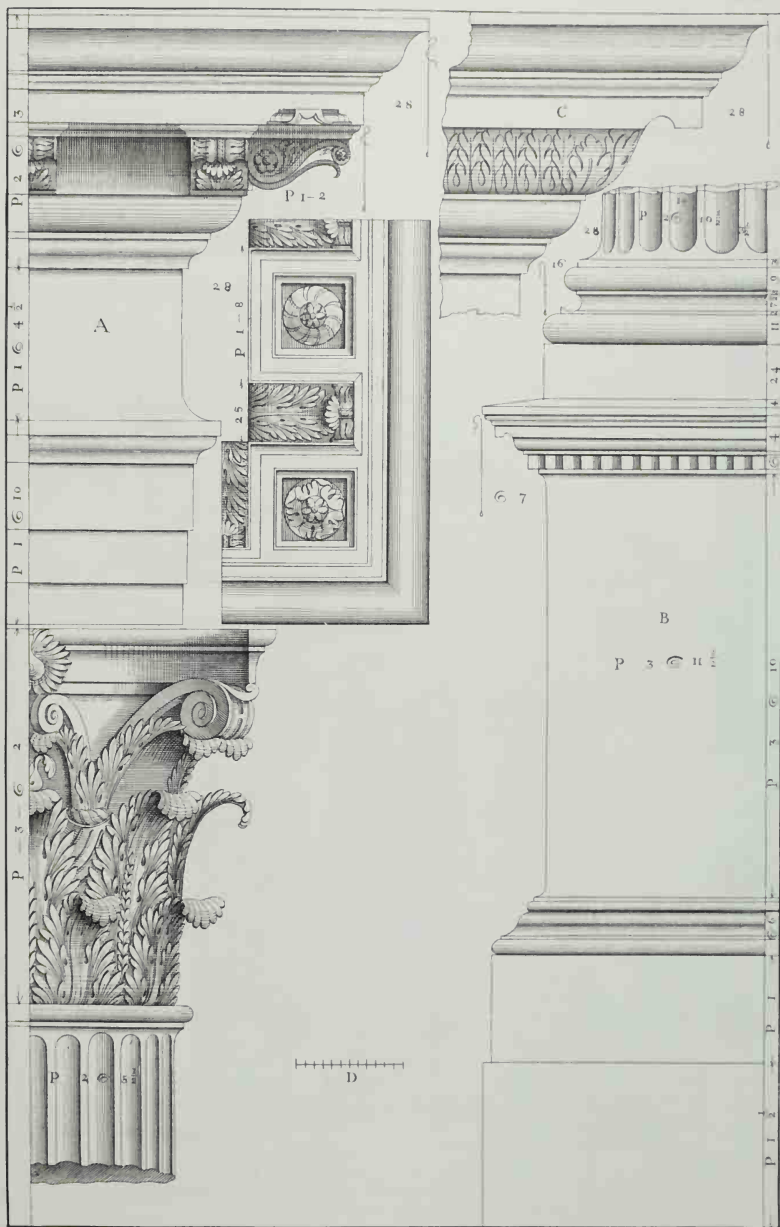


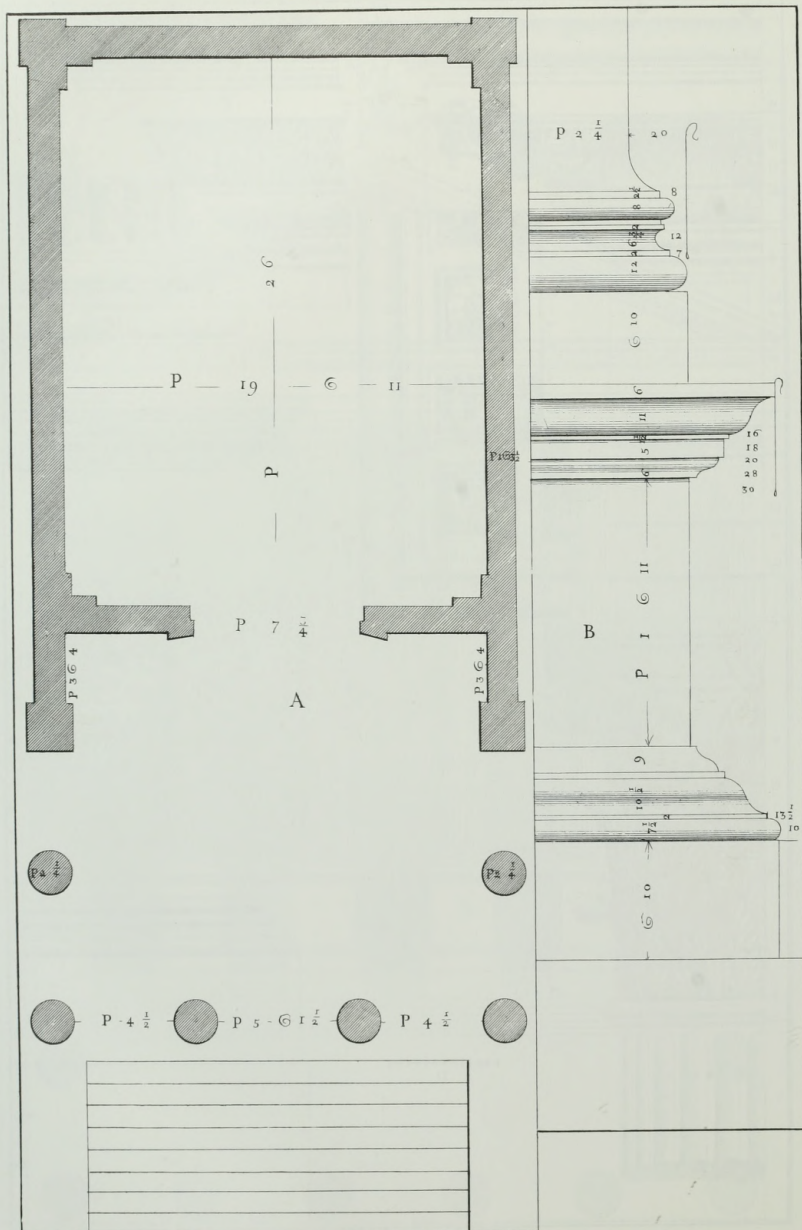


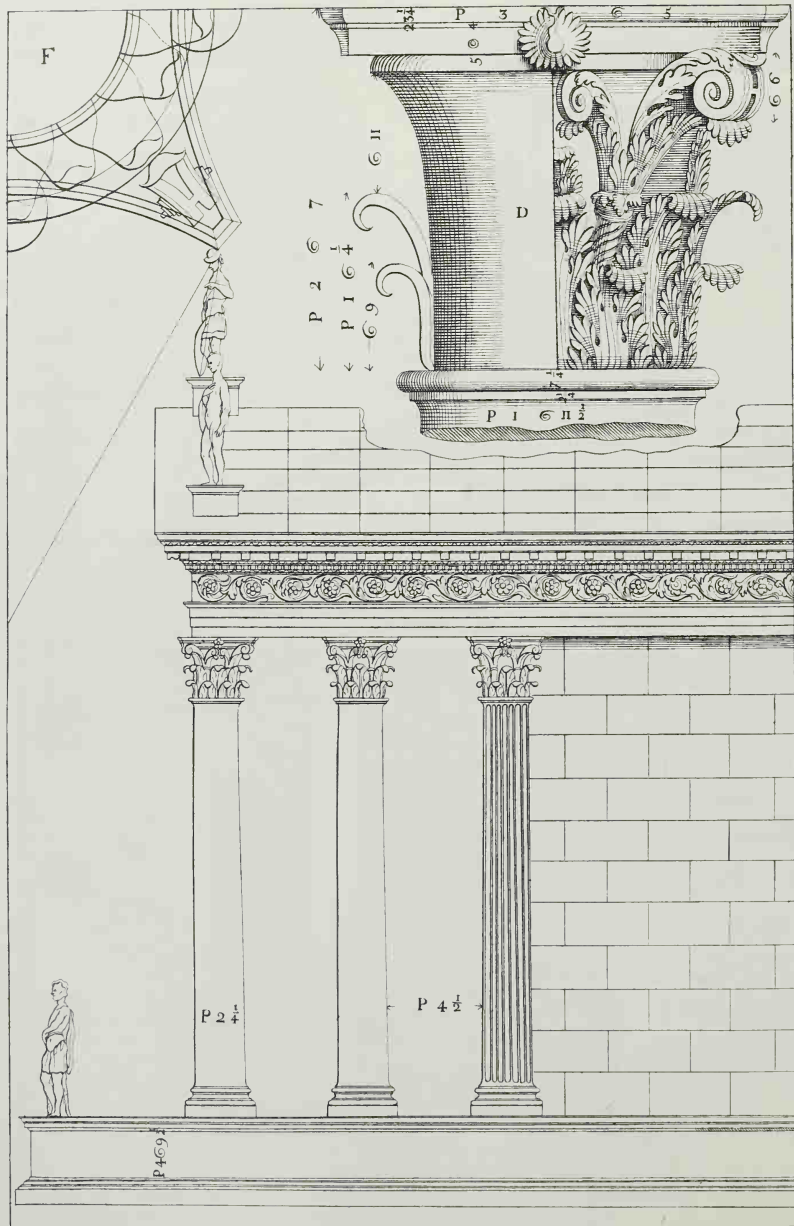












how they were made, has been mentioned in the third book, according to what VITRUVIUS says of them.) As they were of a form different from this, I believe certainly that it was a temple. What its aspect is, and its manner, by what has been said in so many other temples, is sufficiently manifest.

THE floor of the temple is raised from the ground ten foot five inches. A pedestal forms a basement round it, upon whose cimacia are two steps which support the base of the columns. And it might very easily be, that it was such steps VITRUVIUS means, when at the end of the third chapter of the third book he says, that in making a *poggio* round a temple, the *scamili impari* should be made under the bases of the columns, which are to answer directly to the body of the pedestal, which is, under the columns, and be level under the base of the column, and above the cimacium of the pedestal; which place has perplexed many. The base of this basement has fewer members, and is thicker than the cimacium, which, as has been elsewhere observed, ought to be done in pedestals. The base of the column is Attick, but it has some *baftoncini* more; hence it may be called Composite, and is suitable to the Corinthian order.

THE capitals are wrought in the manner of olive leaves, and the abaco carved. The flower placed in the middle of the front of the capital takes up the height of the abaco, and the orlo of the campana, which I have remarked was observed in all the ancient capitals of this kind. The architrave, the frize and the cornice, are the fourth part of the length of the columns, and all their members are carved with most beautiful inventions. The modiglions are different from any I have seen; and this their difference from the ordinary is very graceful. And although the capitals are in the manner of olive leaves, they are nevertheless carved in the manner of oak leaves.

OVER the gola dritta, instead of an orlo, there is an ovolo carved; which is seen but in few cornices. The frontispiece is directly made as VITRUVIUS teacheth in the before mentioned place.

As there are nine parts in the length of the cornice, one is given to the height of the frontispiece under the cornice. The erte, or pilasters of the door, are as thick in the front as the sixth part of the breadth of the openings. This door has very beautiful ornaments, and is very well carved. Over its cornice, and even with the pilasters, there are two pieces of stone wrought in the manner of architraves, which project forward from the said cornice, and in each of them there is a square hole ten inches and an half broad every way, in which I believe beams have been put, which reached to the ground, and where an additional door might have been made to put on and take off: which must have been made with latices, that the people standing without might see what was doing in the temple, without hindering the priests.

THERE are six plates of this temple.

IN the first, which is this, is designed the plan.

Plate 81,

IN the second the elevation of the front forwards.

Plate 82,

IN the third the elevation of the flank.

Plate 83,

IN the fourth is part of the members.

Plate 84,

A, the base of the columns.
B, the cimacia
C, the base } of the pedestal.

AND afterwards there is the designs of the fourth part of the upright, and of the plan of the capital.

IN the fifth are the architrave, the frize, and the cornice.

Plate 85,

IN the sixth are the ornaments of the door.

Plate 86,

E, the perforated piece of stone placed over the cornice of the door, even with the pilasters, and projecting from them.

THE foliage which are over it, are those of the frize that goes quite round the temple over the columns.

CHAPTER XXIX.

Of the other temple of NISMES.

THE following designs are, of the other temple of *Nismes*, which the people of the city say was the temple of *VESTA*; which in my opinion cannot be, as well because to *VESTA* the temples were made round, in resemblance of the element of the earth, of which they said she was the goddess; as also because this temple had passages round it, closed by continued walls, in which were the doors on the sides of the cella, and the door of the cella was in the front, so that it could not receive light from any part: neither can any reason be given why temples to *VESTA* should be made obscure; I rather therefore believe that it was dedicated to some of their infernal gods.

IN the inward part of this temple there are tabernacles, in which statues must have been. The inward front, opposite to the door, is divided into three parts. The floor, or pavement, of the middle part, is level with the remainder of the temple. The two other parts have their floor raised to the height of the pedestals; and to it one ascends by two pair of stairs, which begin in the passages, which, as I have said, are round this temple. The pedestals are a little higher than the third part of the length of the columns. The bases of the columns are composed of the Attick, and of the Ionick, and have a most beautiful scoma. The capitals are also composed, and very neatly wrought. The architrave, the frieze, and the cornice are without intaglia's, and the ornaments placed in the tabernacles that are round the cella are also plain.

BEHIND the columns that are opposite to the entrance, and which make, in our way of speaking, the great chapel, there are square pilasters, which also have composed capitals, but different from those of the columns; and they differ also the one from the other, because the capitals of the pilasters that are immediately near the columns, have intaglia's different from the other two; but all of them have so beautiful and graceful a form, and are of so beautiful an invention, that I don't remember to have ever seen capitals of that sort better and more judiciously made.

THESE pilasters support the architraves of the chapels on the sides, to which one ascends, as I have said, by the stairs in the passages, and therefore are by this means wider than the columns are thick; which is worthy observation.

THE columns that are round the cella support some arches made of squared stones; and from one of these arches to the other the stones are placed, which form the greater vault of the temple.

ALL this edifice is made of squared stones, and covered with flat stones, placed in such a manner that the one goes over the other; that so the rain might not penetrate.

I HAVE made use of the greatest diligence in these two temples, because they seemed to me edifices worthy of great consideration; and by which it may be known that it was in a manner peculiar to that age, that in every place the good way of building was understood. I have made five plates of this temple.

Plate 87. IN the first the plan is designed.

Plate 89. IN the second is half of the front opposite to the door in the inward part.

Plate 88. IN the third is the elevation of part of the flank.

Plate 90 and 91. IN the fourth and fifth are the ornaments of the tabernacles, of the columns, and of the soffits, which are all marked with letters.

A, the architrave, the frieze, and the cornice over the columns.

B, the capital of the columns.

P, the plan.

D, the capital of the pilasters behind the columns.

E, the capital of the other pilasters.

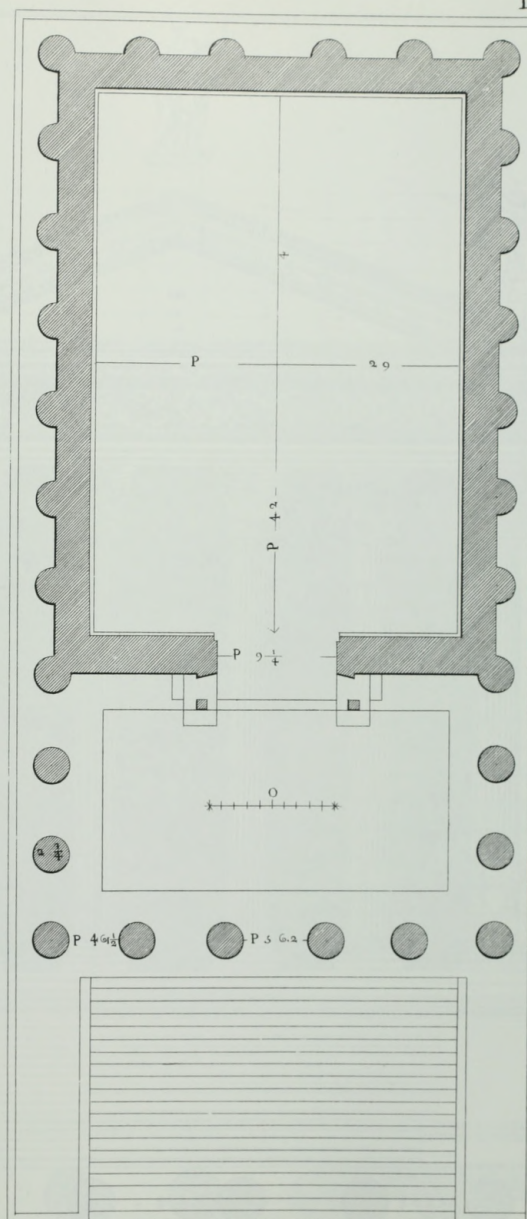
Plate 90. F, base of the columns and pilasters.

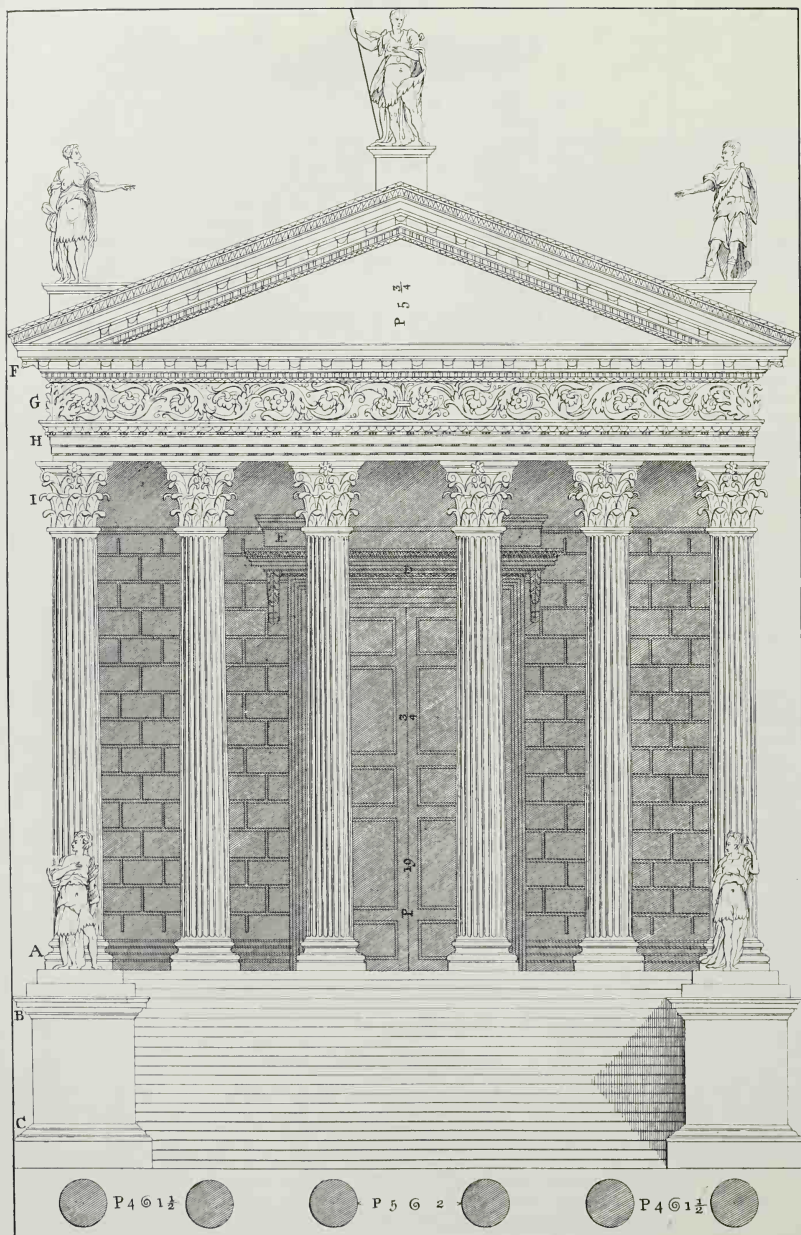
G, the pedestal.

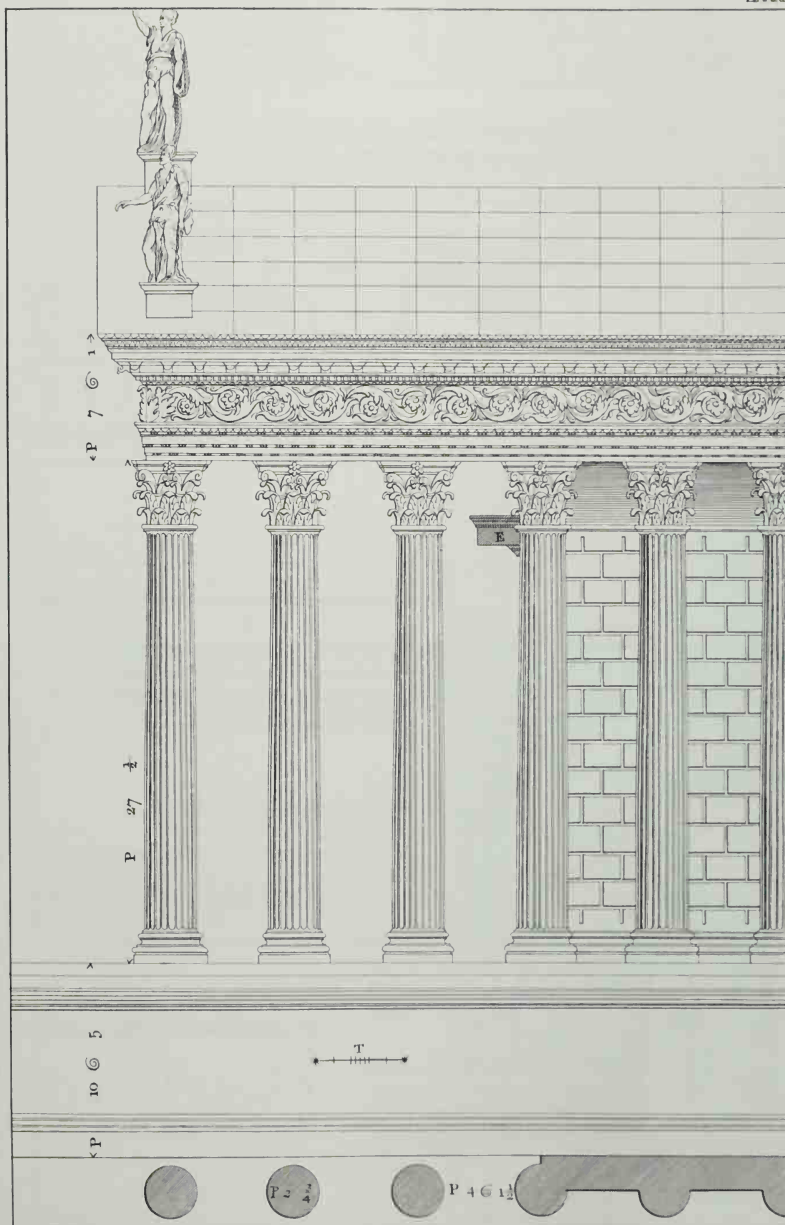
H, are the ornaments of the tabernacles, which are round the temple.

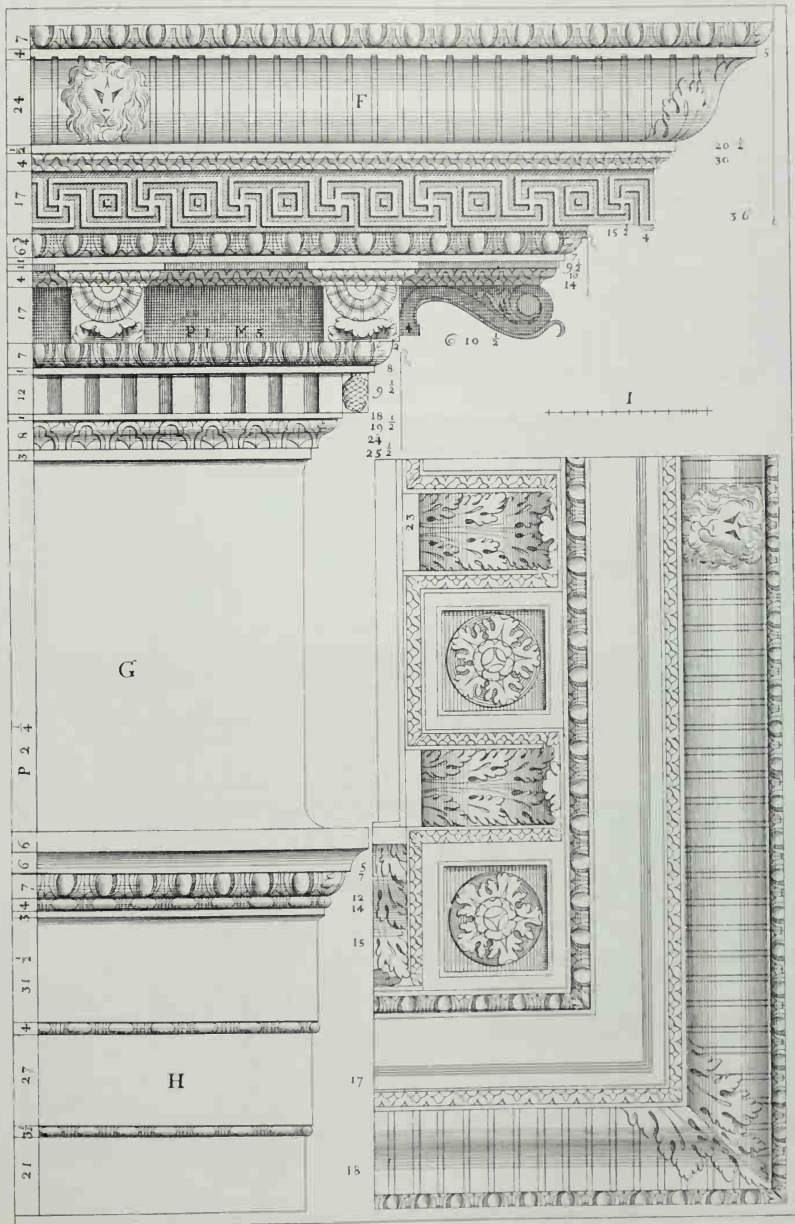
S, are the ornaments that belong to the tabernacle of the great chapel.

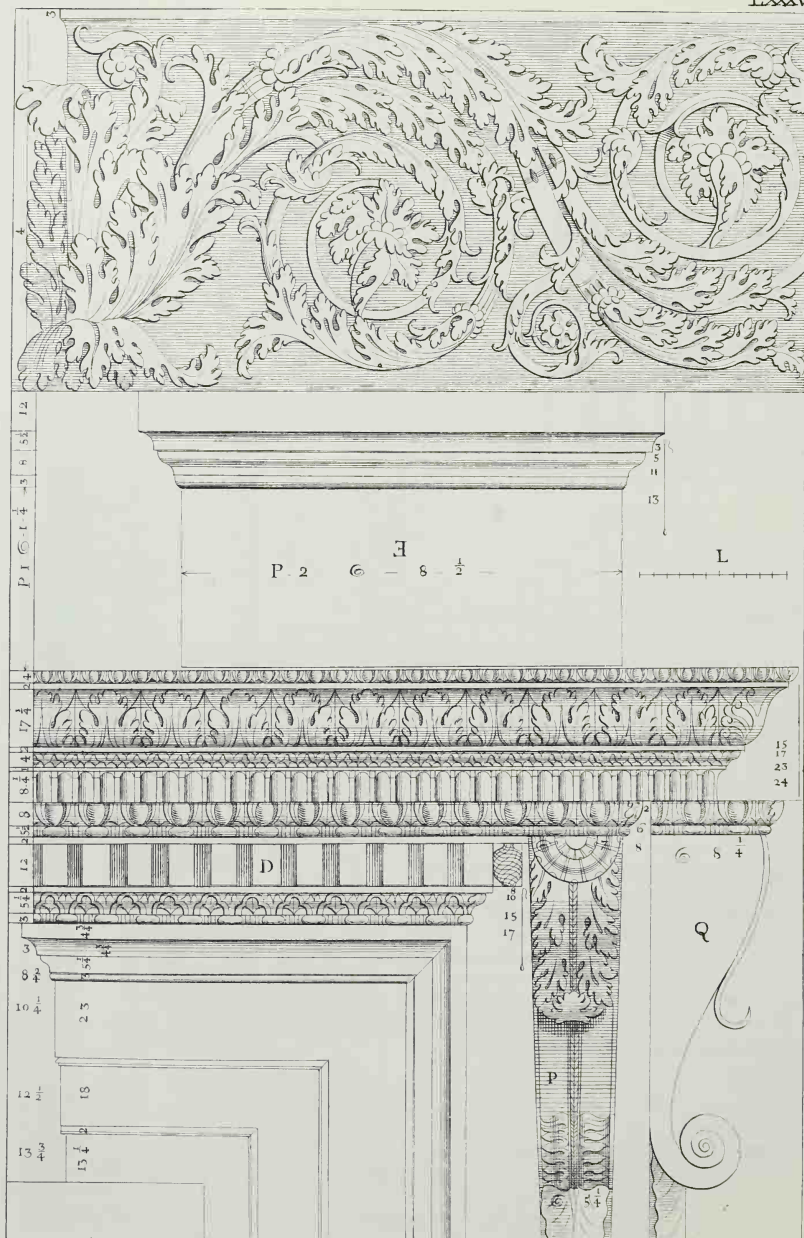
M, R, and O, are the compartments of the soffit of the said chapel.



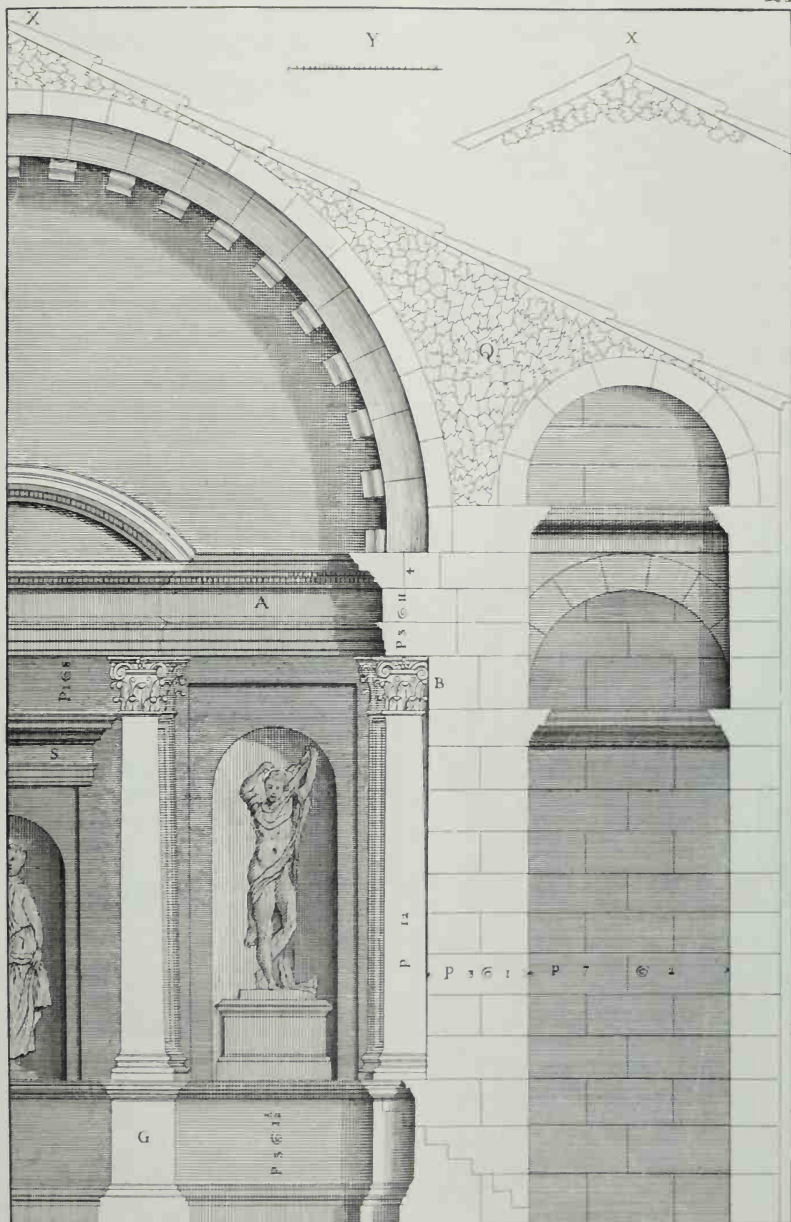


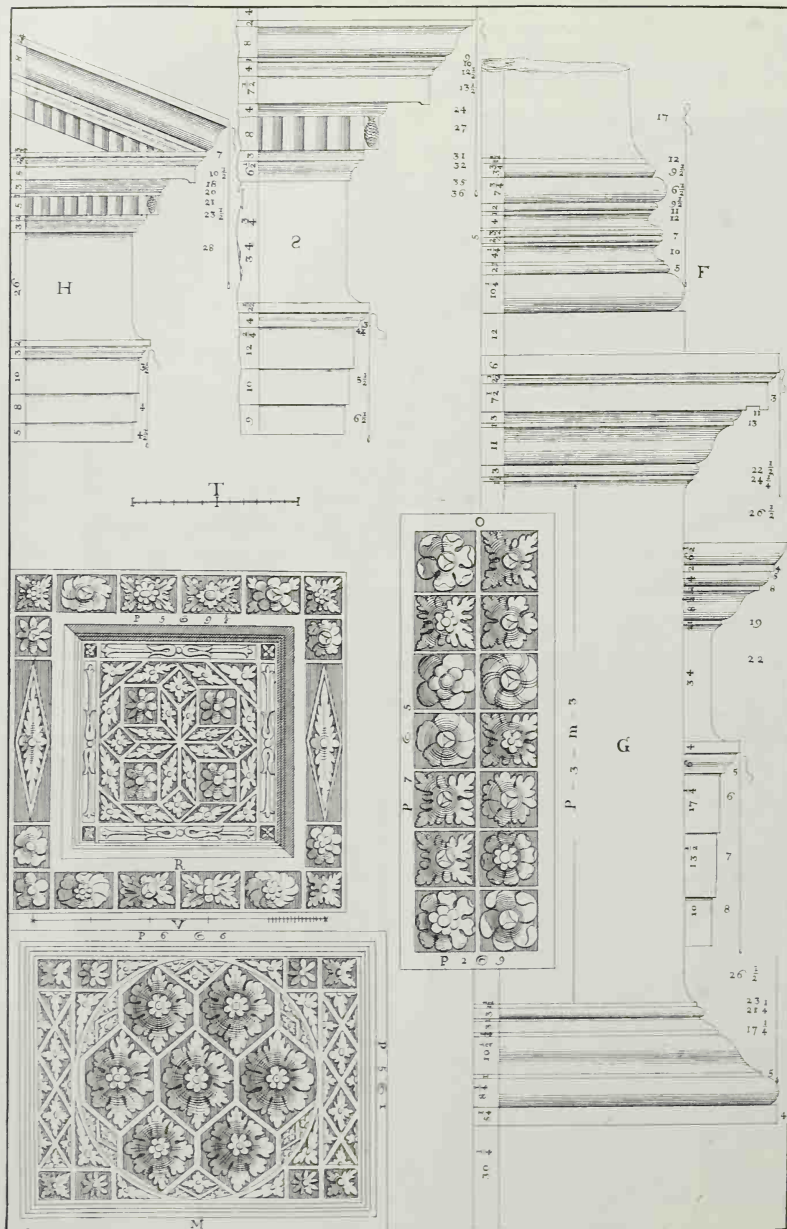


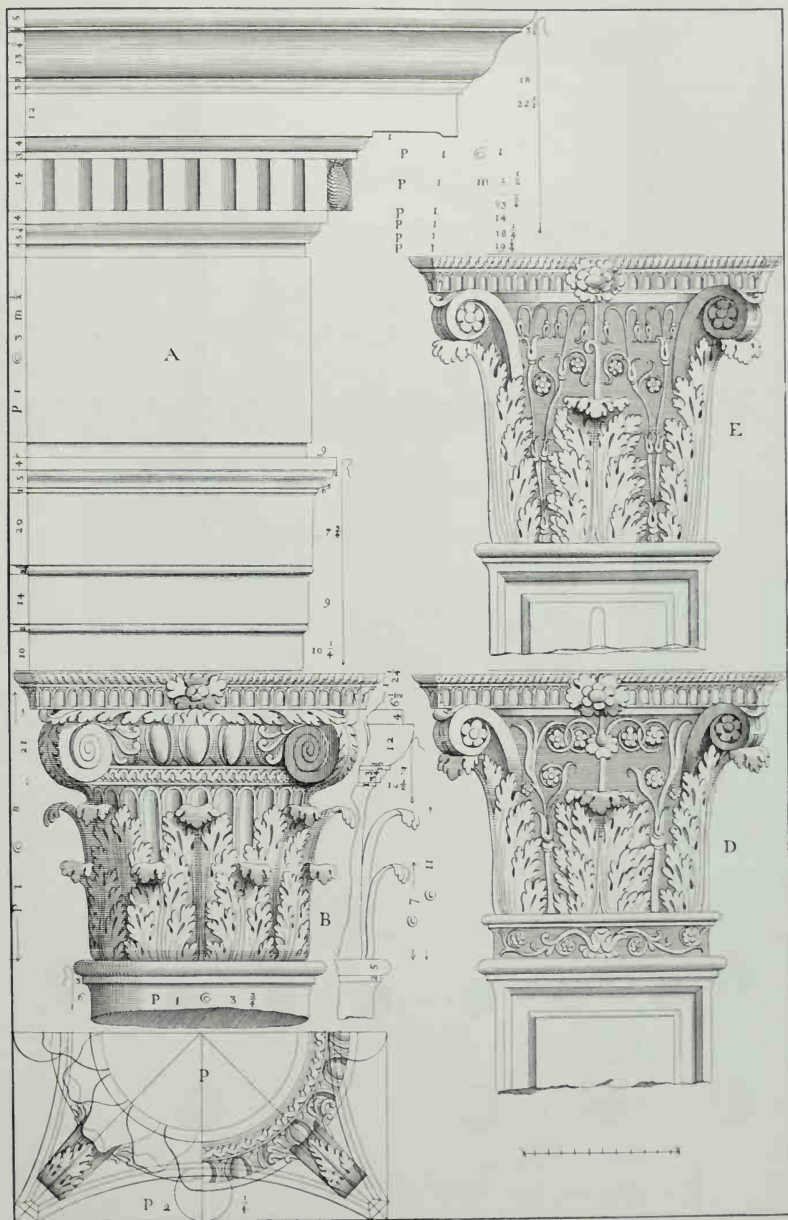




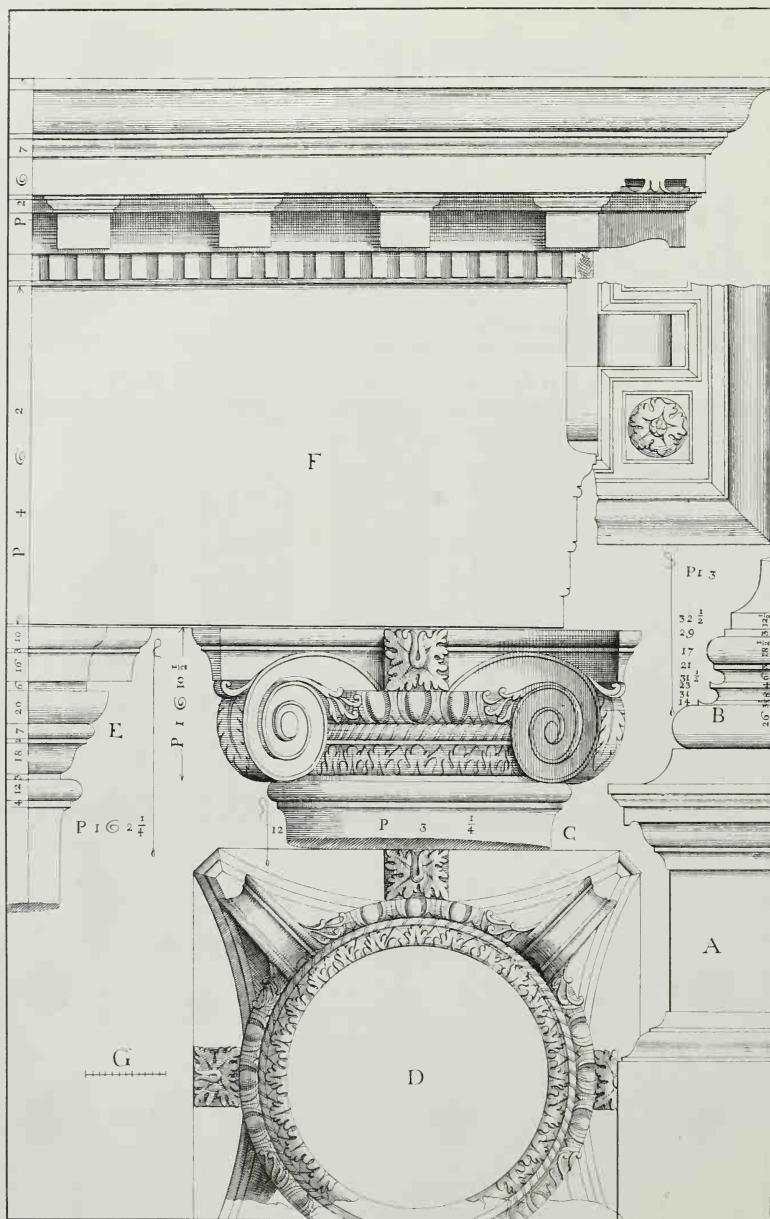


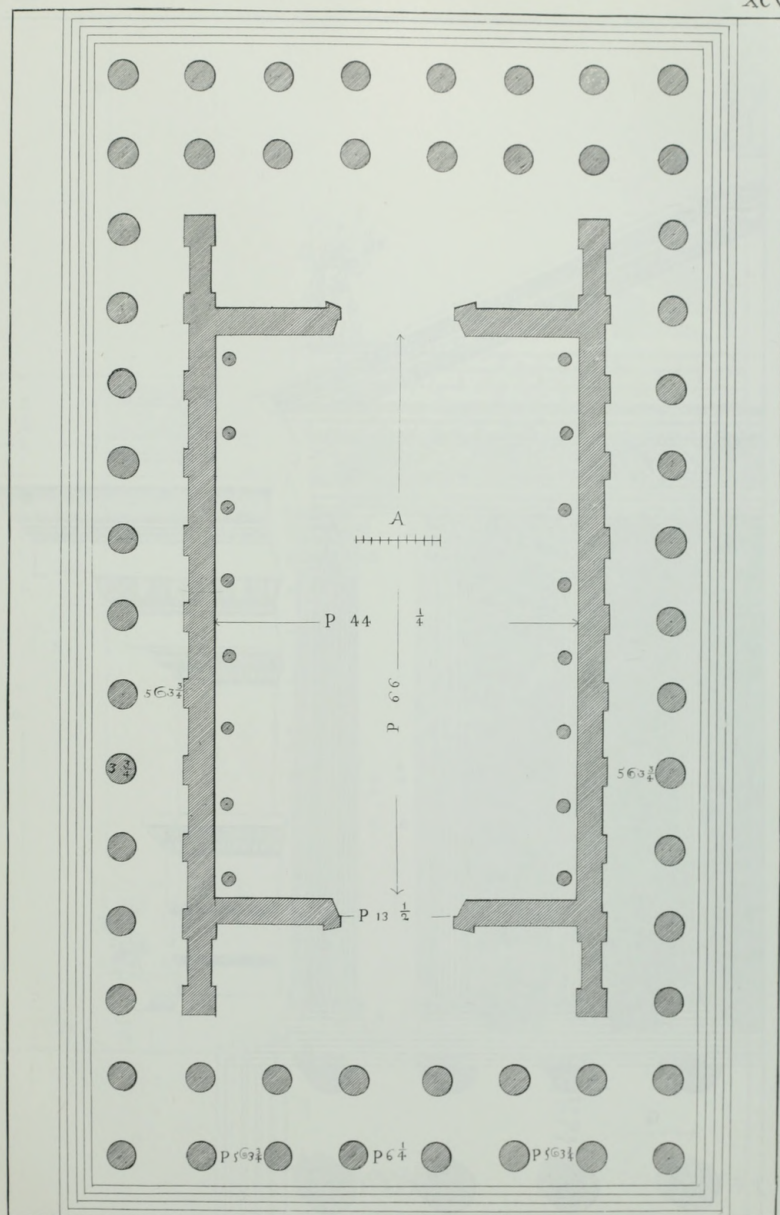


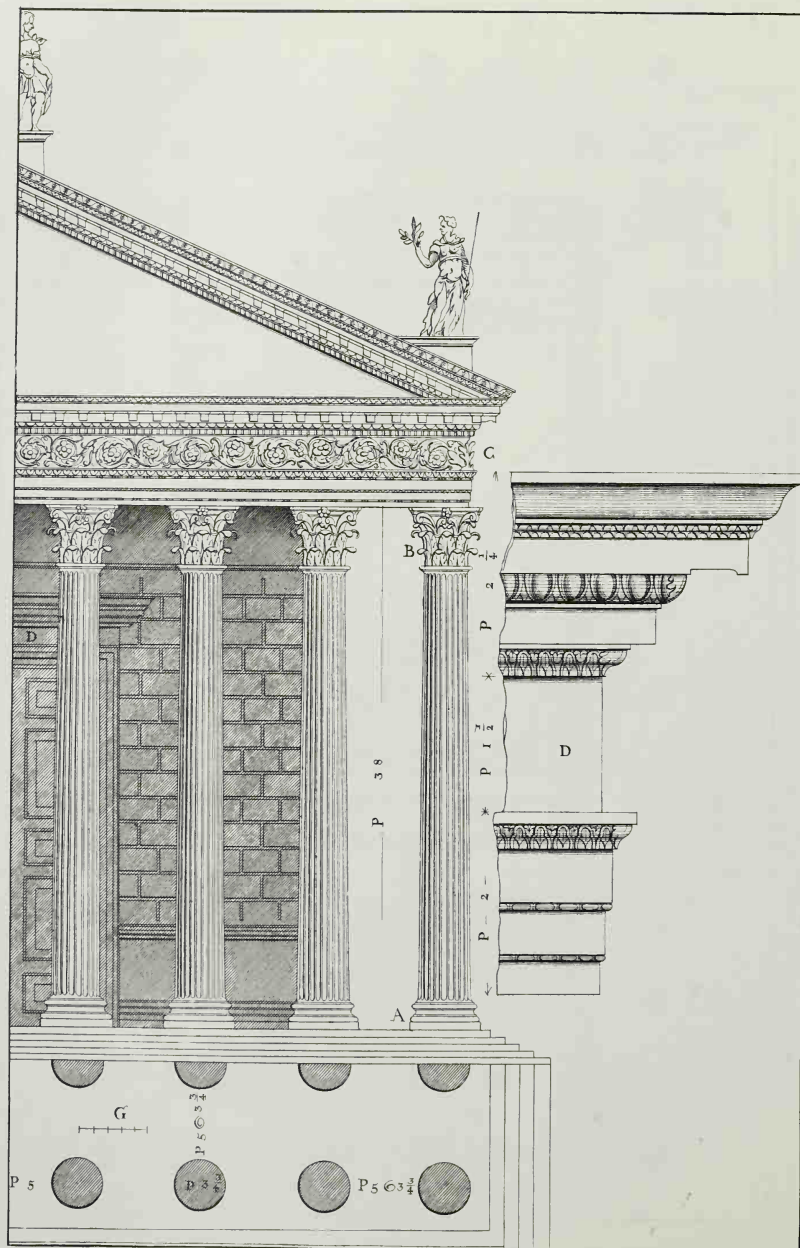


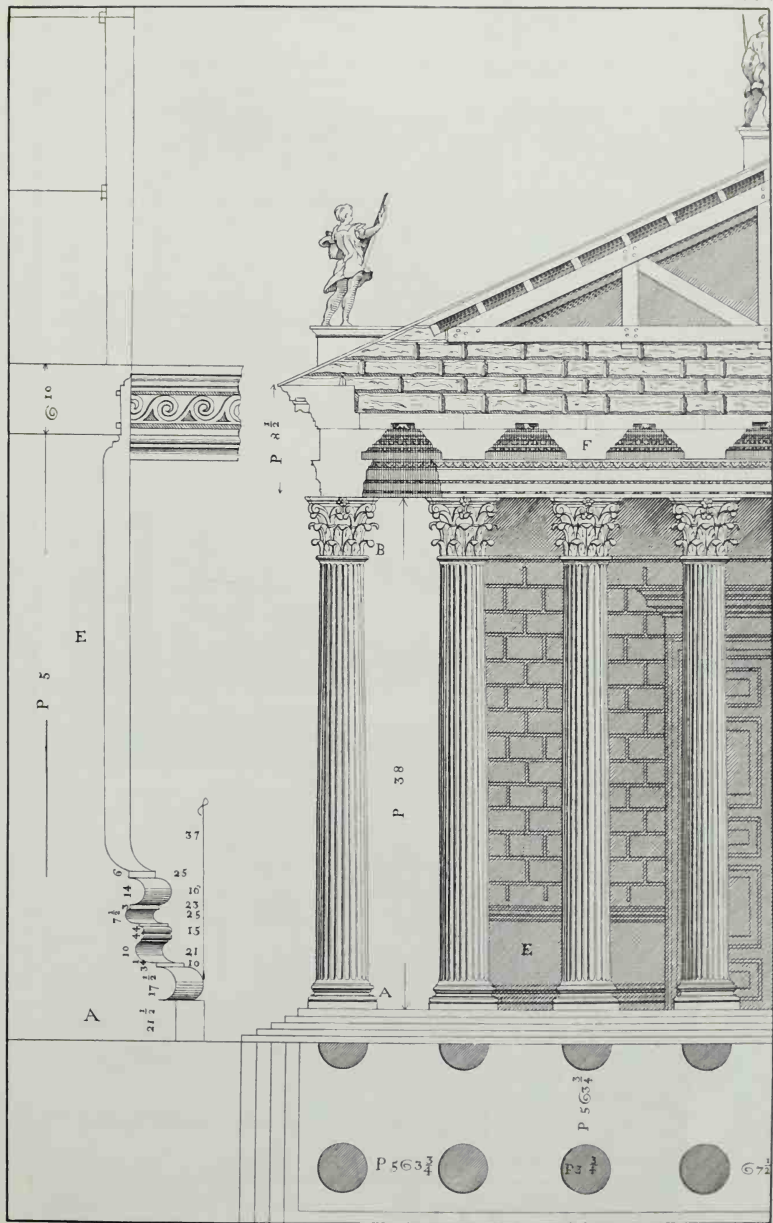


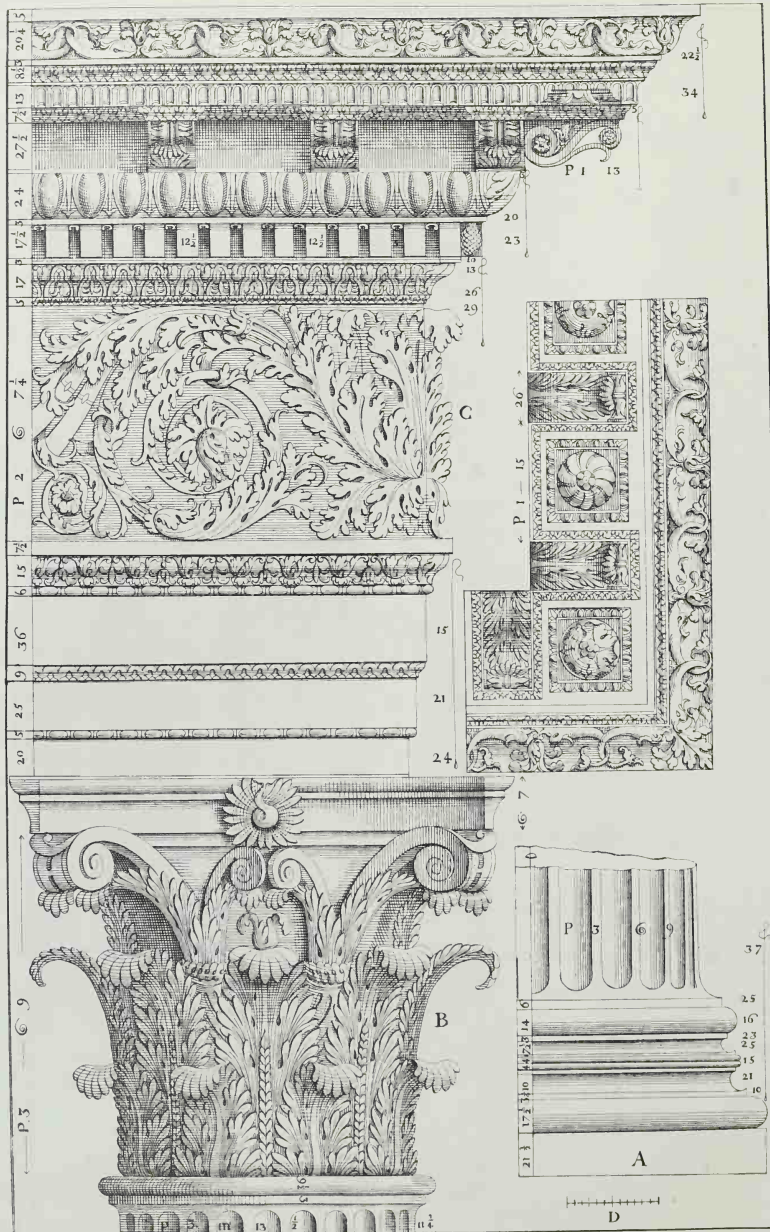


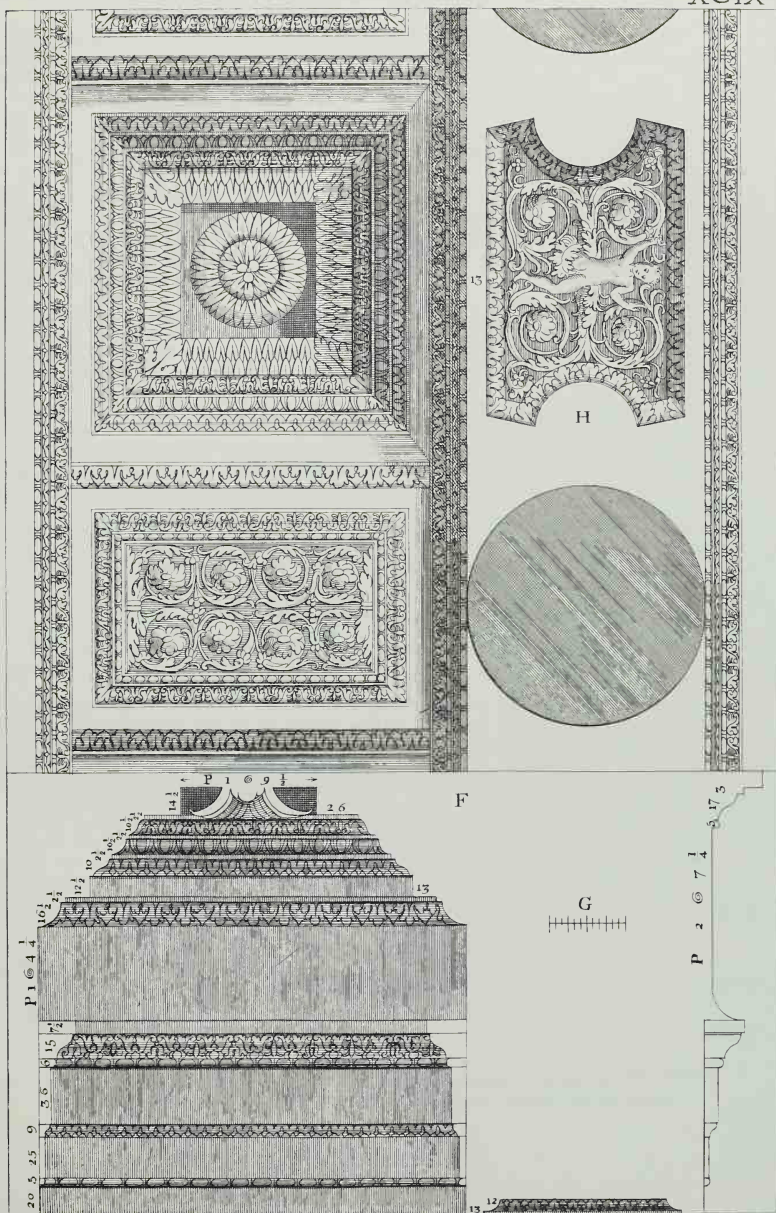












THE facona or profile drawn near the dado of the pedestal is of the architrave of the frize, and of the small cornice, which are over the pilasters, and is that which is marked C in the design of the flank.

C H A P. XXX.

Of two other temples in Rome; and, first, of that of CONCORD.

BESIDES the temples before mentioned, when those in *Rome* were treated of, the columns of the portico of the following temple are to be seen at the foot of the *Campidoglio*, near the arch of SEPTIMIUS, where formerly was the beginning of the *Forum Romanum*, which, in consequence of a vow, was built by F. CAMILLUS, and, according to some, dedicated to CONCORD.

IN this temple publick affairs were very often debated; by which it may be comprehended that it was consecrated, because it was in consecrated temples only, that the priests permitted the senate to assemble to transact publick affairs; and those only were consecrated which were built by the Augurs; hence these temples were also called curia's.

AMONG the statues with which it was adorned, writers make mention of that of LATONA, who had in her arms APOLLO and DIANA, her children; of that of ÆSCULAPIUS, and of HYGEIA his daughter; of that of MARS, of MINERVA, of MERCURY, and of that of VICTORIA, was in the frontispiece of the portico, which, during the consulat of M. MARCELLUS, and of M. VALERIUS, was demolished by lightning.

FROM what by the inscription, which is still to be seen in the frize, appears, this temple was consumed by fire, and afterwards rebuilt by order of the senate, and of the people of *Rome*. Hence I believe that it was not reitored to the beauty and perfection it had at first. Its inscription is this:

S. P. Q. R. INCENDIO CONSUMPTUM RESTITUIT.

THAT is, the senate and the Roman people rebuilt this temple, after it had been consumed by fire.

THE intercolumniations are less than two diameters. The bases of the columns are composed of the Attick and of the Ionick, and are something different from those which are commonly made, but are nevertheless made in a beautiful manner. The capitals may be said to be a mixture of the Dorick and Ionick: they are very well wrought. The architrave, and the frize in the outward part of the front are level, neither is there any distinction between them; which was done, that an inscription might be put there. But in the part within, that is, under the portico, they are divided, and have the intaglia's, which are to be seen in the design. The cornice is plain, that is, without intaglia's. Of the walls of the cella not the least part antient is to be seen; but have been since rebuilt not very well; one may nevertheless know how it must have been. I have made three plates of this temple.

IN the first the plan is designed.

Plate 92.

G, the architrave and the frize, which are under the portico.

IN the second is the elevation of the front of the temple.

Plate 93

IN the third are the members.

Plate 94.

A, the base of the temple.

B, the base of the columns.

C, the front of the capital.

D, the plan

E, the facona without the voluta } of the capital.

F, the architrave, the frize and the cornice.

C H A P. XXXI.

Of the temple of NEPTUNE.

OPPOSITE to the temple of MARS the Avenger, of which the designs have been already given, in the place that is called in *Pantano*, which is behind *Morforio*, was antiently the following temple, the foundations of which were discovered in digging to build

a house; and there was also found a very great quantity of marbles, all of them most excellently wrought.

It is not known by whom it was built, nor to what god it had been consecrated. But because in the fragments of the gola diritta of its cornice, one sees dolphins carved, and in some places between each dolphin there are tridents, I believe that it was dedicated to NEPTUNE. The aspect of it is winged round. Its manner thick of columns. The intercolumniations were one twelfth part of the diameter of the columns less than a diameter and an half, which I judge worthy to be observed, as I have never seen intercolumniations so small in any other antient edifice. Of this temple not the least part is to be seen standing; but from its remains, which are many, it is that one has come to the knowledge of the whole, that is, of the plan, and of the elevation, and of its particular members, which are all wrought with wonderful artifice. I have made five plates of it.

Plate 95. In the first is the plan.

Plate 96. In the second is the elevation of half the front without the portico.

D, is the modeno of the door.

Plate 97. In the third is the elevation of half the front, under the portico, that is, the first columns being taken away.

A, the profile of the pilasters that are round the cella of the temple, opposite to the columns of the portico.

E, the profile of the wall of the cella in the part without.

Plate 98. In the fourth are the particular members, that is, the ornaments.

A, the base.

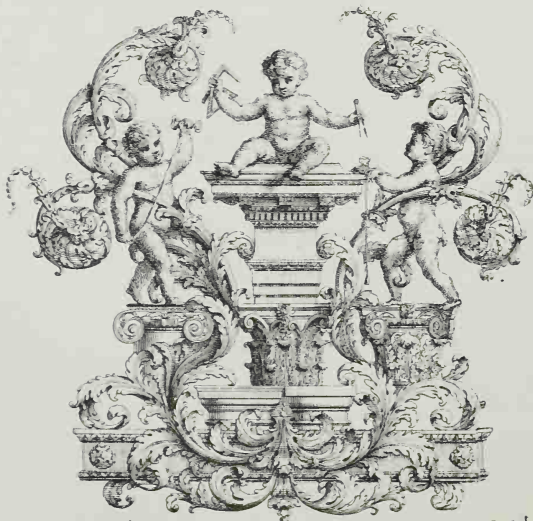
B, the capital; over which are the architrave, the frieze, and the cornice.

Plate 99. In the fifth are the compartments, and the intaglia's of the soffits of the portico's which were round the cella.

F, the profile of the soffits.

G, the foot divided into twelve inches.

H, the soffit of the architrave between one capital and another.



W. Kent Inv.

J. Ware Sculp.

FINIS.

(continued from inside front cover)

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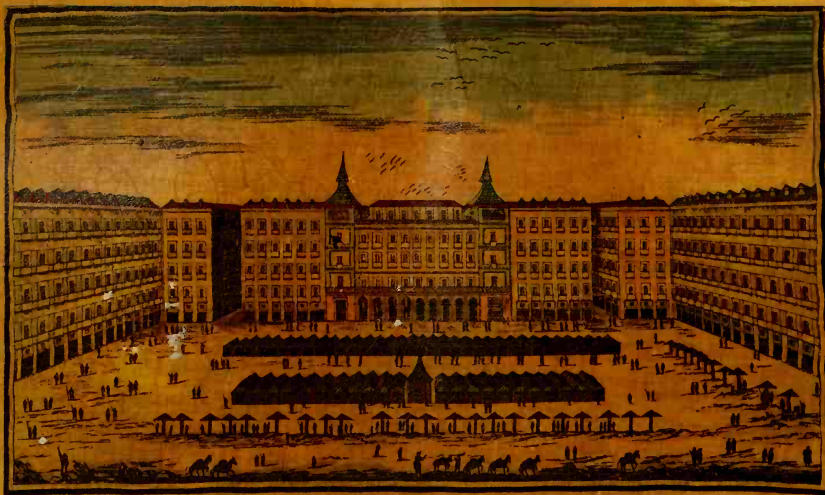
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