Source: The Ten Books on Architecture by Vitruvius (Translated by Morris Hicky Morgan 1914)

BOOK III

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INTRODUCTION

1. Apollo at Delphi, through the oracular utterance of his priestess, pronounced Socrates the wisest of men. Of him it is related that he said with sagacity and great learning that the human breast should have been furnished with open windows, so that men might not keep their feelings concealed, but have them open to the view. Oh that nature, following his idea, had constructed them thus unfolded and obvious to the view! For if it had been so, not merely the virtues and vices of the mind would be easily visible, but also its knowledge of branches of study, displayed to the contemplation of the eyes, would not need testing by untrustworthy powers of judgement, but a singular and lasting influence would thus be lent to the learned and wise. However, since they are not so constructed, but are as nature willed them to be, it is impossible for men, while natural abilities are concealed in the breast, to form a judgement on the quality of the knowledge of the arts which is thus deeply hidden. And if artists themselves testify to their own skill, they can never, unless they are wealthy or famous from the age of their studios, or unless they are also possessed of the public favour and of eloquence, have an influence commensurate with their devotion to their pursuits, so that people may believe them to have the knowledge which they profess to have.

2. In particular we can learn this from the case of the sculptors and painters of antiquity. Those among them who were marked by high station or favourably recommended have come down to posterity with a name that will last forever; for instance, Myron, Polycletus, Phidias, Lysippus, and the others who have attained to fame by their art. For they acquired it by the execution of works for great states or for kings or for citizens of rank. But

those who, being men of no less enthusiasm, natural ability, and dexterity than those famous artists, and who executed no less perfectly finished works for citizens of low station, are unremembered, not because they lacked diligence or dexterity in their art, but because fortune failed them; for instance, Teleas of Athens, Chion of Corinth, Myager the Phocaean, Pharax of Ephesus, Boedas of Byzantium, and many others. Then there were painters like Aristomenes of Thasos, Polycles and Andron of Ephesus, Theo of Magnesia, and others who were not deficient in diligence or enthusiasm for their art or in dexterity, but whose narrow means or ill-luck, or the higher position of their rivals in the struggle for honour, stood in the way of their attaining distinction.

3. Of course, we need not be surprised if artistic excellence goes unrecognized on account of being unknown; but there should be the greatest indignation when, as often, good judges are flattered by the charm of social entertainments into an approbation which is a mere pretence. Now if, as Socrates wished, our feelings, opinions, and knowledge gained by study had been manifest and clear to see, popularity and adulation would have no influence, but men who had reached the height of knowledge by means of correct and definite courses of study, would be given commissions without any effort on their part. However, since such things are not plain and apparent to the view, as we think they should have been, and since I observe that the uneducated rather than the educated are in higher favour, thinking it beneath me to engage with the uneducated in the struggle for honour, I prefer to show the excellence of our department of knowledge by the publication of this treatise.

4. In my first book, Emperor, I described to you the art, with its points of excellence, the different kinds of training with which the architect ought to be equipped, adding the reasons why he ought to be skilful in them, and I divided up the subject of architecture as a whole among its departments, duly defining the limits of each. Next, as was preëminent and necessary, I explained on scientific principles the method of selecting healthy sites for

fortified towns, pointed out by geometrical figures the different winds and the quarters from which they blow, and showed the proper way to lay out the lines of streets and rows of houses within the walls. Here I fixed the end of my first book. In the second, on building materials, I treated their various advantages in structures, and the natural properties of which they are composed. In this third book I shall speak of the temples of the immortal gods, describing and explaining them in the proper manner.

CHAPTER I

ON SYMMETRY: IN TEMPLES AND IN THE HUMAN BODY

1. THE design of a temple depends on symmetry, the principles of which must be most carefully observed by the architect. They are due to proportion, in Greek *ἀναλογία*. Proportion is a correspondence among the measures of the members of an entire work, and of the whole to a certain part selected as standard. From this result the principles of symmetry. Without symmetry and proportion there can be no principles in the design of any temple; that is, if there is no precise relation between its members, as in the case of those of a well shaped man.

2. For the human body is so designed by nature that the face, from the chin to the top of the forehead and the lowest roots of the hair, is a tenth part of the whole height; the open hand from the wrist to the tip of the middle finger is just the same; the head from the chin to the crown is an eighth, and with the neck and shoulder from the top of the breast to the lowest roots of the hair is a sixth; from the middle of the breast to the summit of the crown is a fourth. If we take the height of the face itself, the distance from the bottom of the chin to the under side of the nostrils is one third of it; the nose from the under side of the nostrils to a line between the eyebrows is the same; from there to the lowest roots of the hair is also a third, comprising the forehead. The length of the foot is one sixth of the height of the body; of the forearm, one fourth; and the breadth of the breast is also one fourth. The other members, too, have their own symmetrical proportions, and it was by employing them that the famous painters and sculptors of antiquity attained to great and endless renown.

3. Similarly, in the members of a temple there ought to be the greatest harmony in the symmetrical relations of the different

parts to the general magnitude of the whole. Then again, in the human body the central point is naturally the navel. For if a man be placed flat on his back, with his hands and feet extended, and a pair of compasses centred at his navel, the fingers and toes of his two hands and feet will touch the circumference of a circle described therefrom. And just as the human body yields a circular outline, so too a square figure may be found from it. For if we measure the distance from the soles of the feet to the top of the head, and then apply that measure to the outstretched arms, the breadth will be found to be the same as the height, as in the case of plane surfaces which are perfectly square.

4. Therefore, since nature has designed the human body so that its members are duly proportioned to the frame as a whole, it appears that the ancients had good reason for their rule, that in perfect buildings the different members must be in exact symmetrical relations to the whole general scheme. Hence, while transmitting to us the proper arrangements for buildings of all kinds, they were particularly careful to do so in the case of temples of the gods, buildings in which merits and faults usually last forever.

5. Further, it was from the members of the body that they derived the fundamental ideas of the measures which are obviously necessary in all works, as the finger, palm, foot, and cubit. These they apportioned so as to form the "perfect number," called in Greek *τέλειον*, and as the perfect number the ancients fixed upon ten. For it is from the number of the fingers of the hand that the palm is found, and the foot from the palm. Again, while ten is naturally perfect, as being made up by the fingers of the two palms, Plato also held that this number was perfect because ten is composed of the individual units, called by the Greeks *μονάδες*. But as soon as eleven or twelve is reached, the numbers, being excessive, cannot be perfect until they come to ten for the second time; for the component parts of that number are the individual units.

6. The mathematicians, however, maintaining a different view,

have said that the perfect number is six, because this number is composed of integral parts which are suited numerically to their method of reckoning: thus, one is one sixth; two is one third; three is one half; four is two thirds, or δίμοιρος as they call it; five is five sixths, called πεντάμοιρος; and six is the perfect number. As the number goes on growing larger, the addition of a unit above six is the ἕφεκτος; eight, formed by the addition of a third part of six, is the integer and a third, called ἐπίτριτος; the addition of one half makes nine, the integer and a half, termed ἡμιόλιος; the addition of two thirds, making the number ten, is the integer and two thirds, which they call ἐπιδίμοιρος; in the number eleven, where five are added, we have the five sixths, called ἐπίπεμπτος; finally, twelve, being composed of the two simple integers, is called διπλάσιος.

7. And further, as the foot is one sixth of a man's height, the height of the body as expressed in number of feet being limited to six, they held that this was the perfect number, and observed that the cubit consisted of six palms or of twenty-four fingers. This principle seems to have been followed by the states of Greece. As the cubit consisted of six palms, they made the drachma, which they used as their unit, consist in the same way of six bronze coins, like our *asses*, which they call obols; and, to correspond to the fingers, divided the drachma into twenty-four quarter-obols, which some call dichalca others trichalca.

8. But our countrymen at first fixed upon the ancient number and made ten bronze pieces go to the denarius, and this is the origin of the name which is applied to the denarius to this day. And the fourth part of it, consisting of two asses and half of a third, they called "sesterce." But later, observing that six and ten were both of them perfect numbers, they combined the two, and thus made the most perfect number, sixteen. They found their authority for this in the foot. For if we take two palms from the cubit, there remains the foot of four palms; but the palm contains four fingers. Hence the foot contains sixteen fingers, and the denarius the same number of bronze *asses*.

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