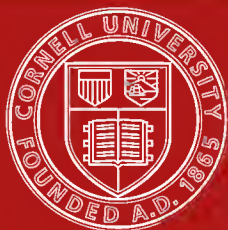


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A doric shaft and base found at Assos.



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A DORIC SHAFT AND BASE

FOUND AT

ASSOS.

BY JOSEPH THACHER CLARKE.



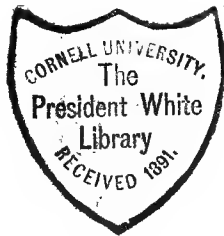
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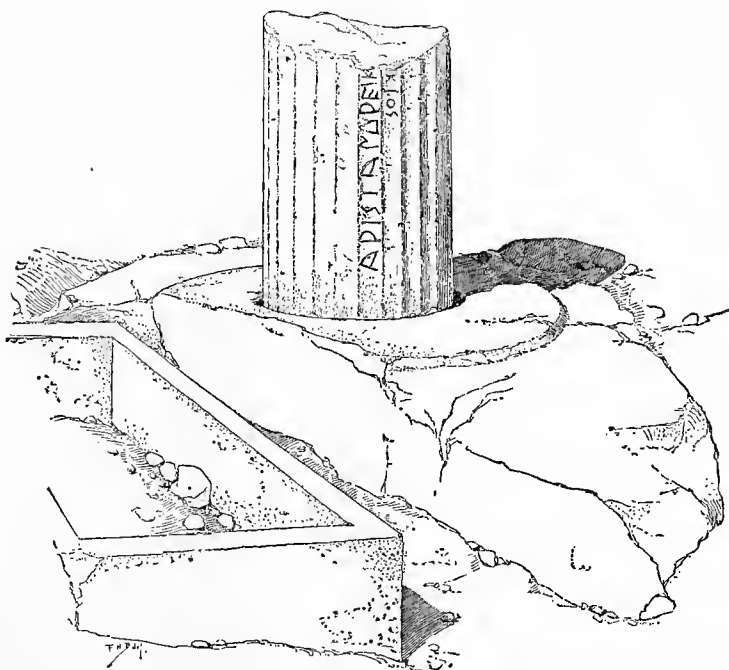
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A DORIC SHAFT AND BASE FOUND AT ASSOS.



Archaic Inscribed Column. [of Clennius]
Street of Tombs, Assos.

FIG. 1.

One of the most interesting monuments unearthed in the Nekropolis of Assos is the stump of an archaic Doric shaft: the only known example of a column of that order provided with an Egyptian base.¹

¹It is to be observed that the Attic bases of late form, which appear in the engraving of the two extremely ancient Doric columns found on the Akropolis of Athens (published by Ludwig Ross in vol. XIII of the *Annali dell' Instituto*, Roma, 1841, tav. c) do not belong to these shafts, but were added through an error, explained in the letter-press. As these columns were free-standing, they were,

Its relation to the earliest development of Greek architecture makes it a striking parallel to the proto-Ionic capital from Neandrea.² Both are important illustrations of the methods by which the Greeks simplified and improved architectural details derived from older civilizations. Each is a link in a long chain, and hence the presentation of each requires that more attention be devoted to the adjoining links, to the antique remains of similar character, than is possible in the narrow limits of a Report on the excavation of one site. The writer trusts that this consideration may be held to justify the separate publication of these results of the exploration of Assos and the southern Troad, undertaken by the Archæological Institute of America.

The column shown in *figure 1* was found during the digging of the second year (1882). It stood by the side of the main road which led through the burial-ground from the principal western gate of the city, and was distant about 130 metres from the fortifications. At this point, the native rock rises almost vertically, having been fully 1.2 m. above the pavement of the ancient street which passed close to it. When found, the column was but little below the surface of the accumulated earth. The rock was here levelled and cut

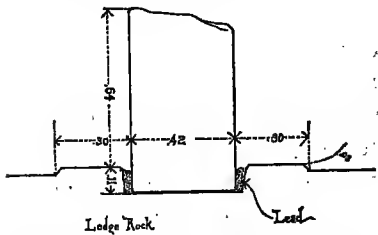


FIG. 2.—Section of the Doric shaft and base.*

to a broad base, in the centre of which was sunk a deep socket of the same plan as the lower diameter of the shaft (*fig. 2*). Into this the column was inserted, and set by a lead casting. A considerable part of this lead had been picked away by despoilers before being covered by the accumulating débris, and it is fortunate that the stone itself had not been entirely shattered in order to get at the six or eight pounds of metal which remained around and beneath it. Among the ruins of

without doubt, originally provided with bases; but at all events these members have not been found.

The only Greek Doric base known to the writer has little or no bearing upon the development of the style: it is that of the Column of the Naxians at Delphi, discovered and published by M. P. Foucart in his *Mémoire sur les ruines et l'histoire de Delphes*; *Archives des Missions scientifiques et littéraires*: Deux. Série, vol. II: Paris, 1865.

²J. T. Clarke, *A proto-Ionic Capital*, in the *Amer. Journal of Arch.*, vol. II, pp. 20, 136.

*These measurements differ from those on the following page, being taken from one side of the shaft, whereas the latter represent the average of both sides.

Assos those stones still exposed above-ground which were united by iron cramps have, almost without exception, been broken by the sledge-hammer, the employment of which for the purpose of obtaining such lead castings is familiar to the wandering gypsy-smiths in Asia Minor. So securely was the column attached to the bed rock that, although it is beyond question the oldest of all the monuments discovered in the Nekropolis, it is the only one which has not been overthrown. The shaft was irregularly broken off at a height of about 0.65 m. from its base. No remains of the upper part were brought to light by the further excavations in the vicinity.

During the Roman dominion, a segment of the base was cut away to make room for a monolithic sarcophagus,³ the approximate date of which is evident from its having contained, together with crumbling bones, the sherds of a vessel of red pottery ornamented with figures in relief,—the well-known Samian ware. This sarcophagus was buried beneath the surface of the earth, no respect being paid to the integrity of the column, which must, at that time, have been at least five hundred years old. The remaining part of the base, although much worn and fractured, shows the stone-cutting to have been careful and accurate: the bevelled edge is perfectly regular, and the distance from its upper circumference to the arrises of the shaft is on all sides exactly 0.298 m. The lower diameter of the base is 1.06 m.; its height 0.034 m.

The shaft is 0.425 m. in diameter. The stone of which it is cut is the same andesite as the bed rock. The resistance of this material to weathering depends greatly upon the stratum from which it is quarried, and the degree of exposure to the elements. Thus, some of the stones of the lower wall of the great eastern gate, which probably dates from the fourth century, having been subjected to the percolation of water since the time of the Turkish occupation, may be easily crumbled with the finger nail. The archaic column, on the other hand, has hardly been weathered at all: its arrises are perfectly sharp, and the letters engraved upon it as legible as when first cut. The channels, of an approximately segmental plan, are twenty-five in number. Their extreme shallowness, like the slight elevation of the base cut upon the bed rock, is sufficiently accounted for by the difficulty of

³ No. 76 of the list and general plan which will be given in the second Report on the Excavations at Assos.

working this exceedingly hard and gritty stone. Recent experiments made upon the andesite of Assos by a lapidary, under the supervision of the writer, have shown it to be one of the most intractable materials ever chosen for architectural details.

The number of the channels, unique among the remains of antiquity, is to be explained by the entirely isolated position of the column. As it stood in no relation to the axes of a building, it was not absolutely necessary to make the number of channels divisible by four,⁴ or even the opposite sides of the column symmetrical,⁵ and the channels consequently of even number. Within these limitations, the subsequent usage of the Greeks in channelling their columns seems to have been determined solely by considerations based upon the absolute size of the shafts, and the distance from which they were generally to be seen. The simile of Aristotle, in his *Ethics*,⁶ from which is derived our knowledge of the technical term employed for this detail, clearly shows that the *rhabdosis* was regarded by the architect, not as an independent feature of the design,⁷ but

⁴ All the multiples of four, from sixteen to thirty-two, appear in the buildings of Greece. Twenty-eight and thirty-two channels are, however, exceedingly rare: the former number being known to the writer only by the fragment of a Doric column found by him among the foundation stones of the theatre of Ephesos; the latter only by two Doric drums on the island of Samos, which have been described by L. Ross, in his *Reisen auf den griechischen Inseln des aegaeischen Meeres*: Stuttgart, 1840-43. These last were seen and measured by the present writer in 1879. They had then been removed from their former position and built into the wall of a vineyard. An approximate diameter is 1.04 m., showing that the building to which they belonged was of considerable size: at least half as large again as, for instance, the chief temple of Assos.

⁵ Eighteen channels (the only number not a multiple of four known to have been employed by the Greeks) are to be observed in the pronaos of the temple of Assos. The peculiar considerations which led to the adoption of this number have been set forth in the *Report on the investigations at Assos, 1881*: Boston, 1882, p. 89.

⁶ *Ethika Nikom.* x. 4. 2. The commentary upon this passage, attributed to Enstratios, betrays a want of understanding of the word *Ῥάβδος*, which is explained: *τὴν κατὰ μῆκος πῆξεν, ἥτις γίνεται, ὅταν πρὸς ὀρθῶς γωνίας ἰσθηται*. Still, it is not surprising that a Byzantine ecclesiastic of the twelfth century should have been wholly unacquainted with the details of antique architecture, and have supposed that the *rhabdosis* signified the erection of the column to a position exactly vertical.

⁷ Certain writers on Greek architecture fancifully assume this striation of the shaft to have been derived from, or at least to be analogous to, the ribbed stems of umbelliferous plants, notably the *Heracleum silphium narthex* (K. Bötticher, *Die Tektonik der Hellenen*: Ed. 2: Berlin, 1874, vol. I); or the cracked bark of the trunks of trees (P. F. Krell, *Geschichte des dorischen Styls*; Stuttgart, 1870: and many

simply in its relation to the general effect of the building.⁸ The number of channels is thus no indication of age, as has been so often assumed. For instance, the columns of the archaic temple of Kórinth, of large dimensions and situated in the plain, have twenty channels; while the small shafts of the interior of the temple of Aigina have only sixteen, as have also those of the much more recent temple of Sunion, which stand upon the narrow summit of an eminence, forming a landmark for mariners doubling the cape. All the instances of sixteen-channelled shafts, which are exceptions to the general usage, are to be explained by these considerations. The best parallel to the memberment of the Assos column is presented by the forty-four channels of that of the Naxians at Delphi (cf. Note 1), both intended to be seen from immediate proximity. It is evident, however, that, at the time when the Assos monument was erected, the practice of channelling had not been reduced to the system which rendered the Doric columns of later ages so regular in detail, but, frequently, so mechanical and uninteresting. The artistic effect of channelling a cylindrical shaft, thus emphasizing the line of support, had undoubt-

others). But that the Greeks attached no symbolical significance, no peculiarly architectural character even, to the channelling, is evident from the employment of the adjective *ῥαβδωτός* for any striation,—such as the furrows of sea-shells (Aristotle, *Hist. Animal.* iv. 4. 3), the ribbed ornamentation of drinking-vessels (Polemon in Athenaios, xi. 87), and even the stripes of garments (Xenophon, *Kyr.* viii. 3. 16).

⁸In the fourth chapter of the tenth book of the Nikomachean Ethics, Aristotle reviews his analysis of pleasure, and by the synthetical method determines its definitions. He explains that it is something complete in itself; not something gradually attained, but a consciousness of perfection which is independent of the condition of time. Hence, pleasure is not motion, inasmuch as this requires time, and presupposes some higher end, being thus, in itself, incomplete. This he illustrates by a comparison with architecture, which is perfect when it has produced that at which it ultimately aims, while its separate processes are imperfect, and differ entirely from each other. In specifying the details of the building of a temple, and in explaining the differences observable between them, he says: *ἡ γὰρ τῶν λίθων σύνθεσις ἑτέρα τῆς τοῦ κίονος ραβδώσεως, καὶ αὗται τῆς τοῦ ναοῦ ποιήσεως.* Did the great philosopher intend, in thus contrasting the fitting together of the stones with the channelling of the column, to illustrate also the distinction which is to be made between the mechanical juncture of the drums, on the one hand, and their incorporation into an æsthetic unity by this architectural expedient, on the other? He probably did not. The marked distinction which is to be made between these two processes may have led to the instinctive choice of them as similes; but it is plain from the details of the construction subsequently adduced,—namely the entirely unrelated *kreps* and triglyph,—that this idea was not definitely present in his mind. Such æsthetic subtleties would be less natural to the ancient Greeks than, let us say, to the modern Germans.

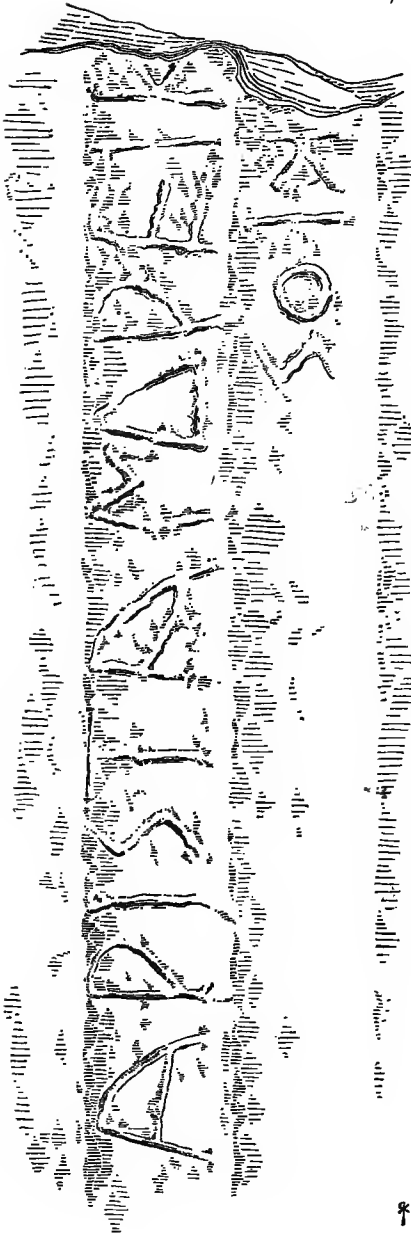


FIG. 3.—*Inscription on the Doric shaft.*

edly been observed by the primitive stone-cutter upon other columns, and imitated by him in a perfectly natural manner. He divided the circumference with a unit of measurement determined in entire independence of the axes. This proved to adjust itself most readily to twenty-five divisions of equal width; and the separating lines were cut as arrises,—no attention being paid to the odd number, or to the want of that symmetry which results from a correspondence of the channels to one or two parallel faces. From this peculiarity of the channelling, it is to be inferred that the abacus of the capital was not of a square but of a round plan, as is the case with the archaic columns found on the Akropolis of Athens (cf. Note 1).

There does not remain enough of the shaft to prove with certainty the apparent lack of an entasis. This refinement could hardly be expected, as the columns of the chief temple of Assos itself, though certainly of much later date, are straight-lined. Moreover, the small monument was

not exposed to be seen from a standpoint much below its base; there was thus little or no optical illusion, and consequent need of a correction of this kind.

The great age of the shaft (evident also from architectural considerations) is certified by an archaic inscription engraved in two of the channels (*fig. 3*). This inscription has been published by Dr. Sterrett,⁹ who assigns it to the sixth century, and reads: ΑΡΙΞΤΑΝΔΡΕΙ[Α?]. The last letter of the first line is, however, undoubtedly K. Professor Ramsay¹⁰ hence suggested 'Αριστάνδρη κ[. . .]; but, owing to the improbability of this Ionic form occurring at Aiolic Assos, has since, with the writer, preferred 'Αριστανδρε Ικ[. . .]; *exempli gratia*, 'Ικτινίου. This last reading has great weight of probability. Epitaph inscriptions not unfrequently began with the vocative; and, while neither of the feminine forms have been known to occur, no less than six men by the name of Aristandros are known from antiquity, the chief among these being Asiatics and Islanders. Furthermore, although of course not impossible, it would have been entirely exceptional, among the remains of Assos, for so prominent a monument to have been dedicated alone, or, in the first word, to a woman. The lines are *boustrophedon*. Of the second only the termination ΚΙΟΞ remains. The low position of these letters upon the stone (beginning 0.11 m. from the base) warrants the assumption that the inscription extended at least above the middle of the column. It would have been quite as easy to read letters engraved even at a height of two metres, as those near the bottom of the shaft; and the most natural method of inscribing the epitaph would be to extend the words along the greater length of the channel. That this was the usual relation is apparent from the noted inscription upon the *Colonna Nania*,¹¹ and from that upon the round

⁹ J. R. S. Sterrett, *Inscriptions of Assos. Papers of the Archaeological Institute of America*. Boston, 1885.

¹⁰ W. M. Ramsay, *Notes and Inscriptions from Asia Minor*. vi. *The Inscriptions of Assos*, in the *American Journal of Archaeology*, vol. i. 2. Baltimore, 1885.

¹¹ Chief among the free-standing votive columns known is the archaic *Colonna Nania*, from the Island of Melos: first described and engraved by G. F. Zanetti, *Due antichissime greche iscrizioni*, Venezia, 1755; and since often republished, appearing in the *Corpus Inscr. Graec.* vol. i, no. 3. Neither the capital nor the base of this column have been found, but apophyges at either end of the shaft prove the original existence of both. The celebrated inscription, occupying three-quarters of the total length, is engraved in two of the channels.

stele found by Finlay on the island of Aigina.¹² It is hence to be assumed that we have recovered less than one-eighth of the inscription,—even supposing it to have been restricted to two channels. No importance is however to be attached to this, beyond the consideration that an inscription of such length must have contained more than the name and patronymic of a single individual, which are all that appear upon the other tombstones of the Nekropolis.

The indications to be derived from the length of the inscription; from its commencing with the vocative; and, above all, from the situation of the column directly upon the native rock (so that no bodies could have been buried beneath it, as beneath every other sepulchral monument found at Assos); give some weight to the supposition that the column may have been erected, and the epitaph inscribed, as a memorial to a number of persons whose bodies had not been recovered for sepulture: persons, for instance, who may have been lost at sea, or have fallen in battle, and were thus honored by their relatives or by the Demos. Such were many of the sepulchral steles of the ancients. ‘Ο τύμβος οὗτος ἐνδον οὐκ ἔχει νεκρόν. (*Anthol. Palat.* VII. 311). Epitaphs of this kind have been preserved in great number in the *Anthology*.¹³ Still, it must be admitted that enough does not remain of the Assos column to seriously argue that we have here to deal with a cenotaph. The side of the stone bearing the inscription has been broken away fully ten centimetres lower than the rest, as if wantonly mutilated. With a few more letters its significance would have been clear.

The original height of the shaft in proportion to its diameter was without doubt considerably greater than was customary in the functional supports of the style. A comparison with the archaic free-standing columns hitherto known (among which, besides the *Colonna Nania* and the above-mentioned two archaic columns found upon the Akropolis of Athens, is a Doric shaft standing in the Athenian ceme-

¹² This archaic shaft, unchannelled and with a dedicatory inscription, engraved in four lines along almost its entire length, was first published by W. M. Leake, *On an inscription found in Aigina*, in the *Transactions of the Royal Society of Literature*, vol. II, xx: London, 1834. It was subsequently redrawn for the *Expedition scientifique de Morée*: Paris, 1831 etc., vol. III, pl. 46. The inscription is given in the *C. I. G.*, vol. II, appendix 2138, d.

¹³ *Anthol. Palat.* VII. 74, 272, 273, 274, 397, and others. The first of these was written upon the monument erected by the Magnesians above the empty tomb of Themistokles. Cf. Plutarch, *Themist.* XXXII. 4.

tery before the *Dipylon*¹⁴) leads to the assumption of a height of about six and a half diameters,¹⁵ or two metres and three-quarters. This estimate can hardly involve an error greater than 0.2m. A column of this height would have just sufficed to elevate an *agalma* above the reach of passers-by. It is clear that this was the purpose of the support. Upon vases, reliefs and coins, too numerous to be specified, free-standing shafts are represented, upholding an image, a vase, or other votive offering; these being generally of a symbolic character, as, for instance, the two cocks significant of the palaistra, the Nikes, or the owls of Athena, seen on almost all the Panathenaic vases. The two well-known columns with triangular capitals, standing on the side of the Akropolis of Athens, above the theatre of Dionysos, supported tripods.¹⁶

During the earliest ages, diminutive columns, generally of the Doric style, were employed to uphold the *ἱεραὶ Παρθέναι*.¹⁷ But the most

¹⁴ The only free-standing shaft erected as a sepulchral monument that has hitherto been known, is a Doric column elevated upon a round pedestal, and still standing in the cemetery before the *Dipylon* of Athens,—inadequately published, without illustration, by A. S. Rhousopoulos in the *Ἐφημερίς τῶν Φιλομαθῶν, Ἀθηναίσι*, 1870, No. 739; and by R. Schöll in the *Bullettino dell' Istituto*, Roma, 1870, No. XIII. These accounts disagree in important particulars: the former, for instance, stating that the upper and lower circumference of the shaft are respectively 0.88 m. and 1.0 m.; while the latter affirms the shaft to be *senza la solita riduzione*. The writer, who has himself examined the monument, is indebted to Dr. Sterrett for a drawing of the lower part of the shaft and of its peculiar support.

This column is of interest in the present consideration, from the fact that it stands, not upon a true base, but upon a round pedestal with terminal and socle mouldings. Nevertheless, as the monument is some two or three hundred years more recent than that of Assos, and consequently belongs to a period when the art of Greece was in its decline, and when the archaic and primitive features of the leading styles had been forgotten, it naturally cannot be compared, in historical significance, with the column of the sixth century from provincial Assos.

¹⁵ This is a weighted average of all the examples known, and closely agrees with the proportions of the column in the Athenian cemetery. This last monument, the best parallel in this respect, is stated by Rhousopoulos to have been 2.03 m. high, with a lower circumference of 1.0, and a base 0.33 m. high. Schöll assigns to it a total height of 2.34 m.

¹⁶ E. D. Clarke, *Travels in various countries of Europe, Asia and Africa*: Cambridge, 1810–23, vol. II, part 2. Also *C. I. G.* No. 227 b. Many representations of tripods supported upon columns appear upon vases and reliefs; a number of these have been collected by F. Wieseler, *Das Satyrspiel*, in the *Göttinger Studien, zweite Abtheilung*: Göttingen, 1847.

¹⁷ This is proved by Ross, *Berichte von den Ausgrabungen auf der Akropolis von Athen*, in his *Archäologische Aufsätze*: Leipzig, 1855–61. The inscriptions of the *Colonna*

striking parallel to the sepulchral column of Assos is supplied by the descriptions of the famous tomb of the orator Isokrates, erected near the Kynosarges. This was a round column (*κίων*)¹⁸ surmounted by the figure of a siren.¹⁹ The dimensions of the shaft and of the statue (respectively thirty and seven cubits), though much greater than those of the Assos column, and, indeed, exceptional during all Greek antiquity, agree with the representations of such monuments; and may serve to give an idea of the customary proportion between the support and the *agalma*. The loss of the capital of the column at Assos is to be regretted, not only on account of its independent archi-

Nania, the two archaic shafts from the Akropolis of Athens, and the round stele from the island of Aigina, before mentioned, all refer to the dedication of the votive offerings which were placed upon these supports. The same is true of the inscription in three of the flutes of the drum of an Ionic column from the Peloponnesos, given by P. M. Paciaudi, *Monumenta Peloponnesia*, Romae, 1761, vol. I; and reprinted in the *C. I. G.* No. 24.

¹⁸ Before the employment of stone columns in the temple architecture of Greece, the word *κίων* designated the great posts of wood which served as the supports of the timbered ceilings. In later times it was restricted, by common usage, to shafts of round plan, while the word *στήλη* signified a square, free-standing pillar. The exceptions prove this rule. Careful writers, when using either of these terms in a sense different from that usually attached to it, qualify it by an adjective. Thus, Plutarch (*Aem. Paul.* XXVIII) speaks of a *κίων τετράγωνος*, while the obelisk in the Hippodrome of Constantinople, being too large to be termed a stele, is called *κίων τετράπλευρος* (*Anthol. Palat.* IX. 682). A small round cippus, probably without a capital, is called *στήλη περιφέρης* by Pausanias (II. 12. 5). The exact determination of the use of these words is a point of great importance in the study of ancient architecture.

The learned authors of Liddell and Scott's Greek Lexicon (seventh edition, 1883) remark, in their definition of *κίων*, that the word is "expressly distinguished from *στήλη*" by Andokides (VI. 15). The passage in question throws, however, no light whatever upon the distinguishing differences between these two kinds of shafts. The orator merely relates that Diokleides, while witnessing the mutilation of the hermae, stood between a certain column and a certain stele.

¹⁹ Plutarch, *Vita decem rhet.* IV. 25. The same statements concerning the column are made by the ancient author of the anonymous life of Isokrates (II. 96., ed. Westermann). Philostratos (*Vitae sophist.* I. 17. 1) in describing this monument uses only the general term *σῆμα*.

A siren was placed also above the tomb of Sokrates (Anonymous *Vita Soph.* I. 74, ed. Westermann), above that of the poetess Baukis (Erinna, frag. 5: Bergk, *Poet. lyr.* ed. 1876, p. 927,—from *Anthol. Palat.* VII. 710), and above that of Kleo (Mnasalkas, frag. 17, from *Anthol. Palat.* VII. 491). Alexander, as is well known, erected statues of sirens upon the funeral pyre of Hephaestion (Diodoros, XVII. 115. 4). Images of sirens, placed upon the summit of free-standing columns and steles, are frequently shown by vase-paintings and other representations.

tectural significance, but because the dowel-holes upon its abacus would undoubtedly have given some indications of the nature of the image which it supported.

Architectural history has long led to the conclusion that the characteristic features of the Doric shaft were derived by the Greeks from the banks of the Nile. Since its demonstration, through the first adequate surveys of the monuments of ancient Egyptian architecture, no valid objection has been raised against this derivation, of which the present discovery may be considered a direct proof.

So striking is the resemblance of the channelled shafts of Egypt to those of Greece, that Jomard,²⁰ who first called attention to the proto-Doric character of the columns of Beni Hassan, felt it necessary to explain that they could not have been the work of Hellenic architects. In the supports of the rock-cut tombs of Beni Hassan, and in those found among the ruins of Calabshéh, Amada and other places, there is to be recognized a fixed architectural system, evidently determined by long practice, and, with but slight variations, adopted throughout Egypt as an established order. The columns of the first-named monuments may be considered as typical of this formation, not inaptly termed by Lepsius *l'ordre des colonnes-piliers*.²¹

The manner in which the number of channels was determined is made evident by the existence, almost side by side, of supports illustrating the various stages of development. The multiplication of the facets was brought about by chamfering the corners of a square pier, which was thus transformed into an eight-sided, and, when the process was repeated, into a sixteen-sided shaft. It was found, however, that the column of sixteen-sided polygonal plan had angles much too obtuse to give the desirable play of light and shade, and the natural expedient of grooving the narrow facets was hence adopted, the edges being sharpened into arrises, and the surfaces becoming channels.²² A portion of the original square pier was left

²⁰ *Description de l'Égypte*: Paris, 1821, vol. iv.

²¹ K. R. Lepsius, *Sur l'ordre des colonnes-piliers en Égypte*, in the *Annali dell' Instituto*, vol. ix, Rome, 1838.

²² The argument of Semper (*Der Stil in den technischen und tektonischen Künsten*. 2d. ed., München 1878), that the channels of the Doric column resulted, from an imitation of long strips of metal soldered together around a core of wood, appears inadmissible; and his remark: "the number of the channels increases in exact proportion with the absolute dimensions of the shaft, inasmuch as the grooving of the strips is dependent solely upon the character and thickness of the metal" (vol. II,

at the top, as an abacus; while the shaft was provided with a broad and flat base, projecting far beyond the lower diameter of the column. This sixteen-sided, channelled support was in general use during the twelfth dynasty, which is held by Mariette to have ruled during the twenty-ninth century B. C., and, even according to the calculations of Lepsius which place it at the latest possible date, was still some thousand years before the Trojan war.

It is not here necessary to bring forward proofs of the intimate connection of the Greeks with the inhabitants of Egypt, especially after the seventh century B. C., the period when the most important advances were being made in Hellenic architecture. The researches of modern Egyptologists have shown that, after the age of Psammetichos, no great work of the Egyptians could have remained unknown to the Greeks. The Egyptians had been, for centuries, the greatest masters in the art of stone-cutting which the world has known, while in this branch the Greeks had then everything to learn. The tradition that squared stones were first employed in Greece by the Phœnician Kadmos while building the walls of Boiotian Thebes,²³ is a reminiscence of this influence. The Egyptian origin of many of the methods of quarrying, cutting and lifting large blocks of stone, in use among the Greeks, becomes more and more certain as our acquaintance with the architectural remains of these countries increases. To take one instance among many: the peculiar method of employing the lewis, observable in early Hellenic buildings (witness the temple of Assos), is the same as that which appears upon Egyptian reliefs, and is recognizable among the débris of Egyptian quarries.

Thus, in the design and execution of stone supports, the architects of Greece, after the seventh century, had no need to make independent experiments. It was not necessary for them to pass through a development corresponding to that displayed by the square pier, the eight-sided, the sixteen-sided, and the channelled shafts of Beni Hassan. It is not probable that the octagonal shafts found at Troizen²⁴

p. 380): is sufficiently disproved by the many channels of the small columns of Delphi and Assos. Indeed Semper, while so clearly setting forth the development of the Ionic capital, is most unsatisfactory and contradictory in his account of the derivation of the forms of the Doric column: even going so far as to assume the supports of Beni Hassan to be either archaistic or debased (vol. I, p. 392), and to doubt the truth of there having been any historical connection between the primitive architectural styles of Egypt and Greece (vol. II, p. 382).

²³ Pliny, *Hist. Nat.* VII. 57. 5.

²⁴ W. Gell, *Itinerary of the Morea*: London, 1817.

and the drums of the same plan from Bolymnos²⁵ antedate the introduction of the Egyptian proto-Doric column, in the same way as do the well-known supports of the Tholos of Atreus and that shown on the relief of the Gate of the Lions at Mykenai. Pausanias (II. 31. 6) speaks of a temple at Troizen as one of the most ancient which he saw in Greece. But this passage, written during the second century A. D., though it certainly attests the great relative age of the building in question, can by no means be taken as an evidence that these columns, the very identity of which is not assured, are older than the seventh century B. C., and consequently could not owe the peculiarity for which they are remarkable to an imitation of the architectural details of Egypt. The shape of the columns of Troizen and Bolymnos, sufficiently common in Egypt, is rather to be taken as an indication that the designers of the earliest stone temples of Greece were uncertain which to choose among the three varieties of supports presented by the tombs of Beni Hassan. Were it nevertheless to be assumed that these archaic Greek monuments display no foreign influences whatever, the appearance of octagonal pillars in connection with them would, of itself, by no means suffice to prove that an independent Hellenic development determined all the features of the Doric column, which was of such marvellous perfection even in the most ancient and most primitive temples of the style. Moreover, the twenty-five channels of the shaft found at Assos make it extremely improbable that the sixteen-fold striation had been independently developed by the Greeks. As has already been mentioned, the irregular number shows that the stone-cutter imitated, from some model, the general effect of channelling, without understanding the significant artistic traditions which were so clearly pronounced and so invariably maintained in Egypt, where this model originated in that treatment of the facets first devised to sharpen the angles of the sixteen-sided prism which had resulted from chamfering the corners of a square pier. Had the Assos column been the direct outcome of the evolution which determined the order of the pier-columns, it would, in all probability, like them have presented a number of channels divisible by four.

How closely the Egyptian base was imitated, will be made plain

²⁵ L. Ross, *Reisen und Reiserouten durch Griechenland*. Vol. I. *Reisen im Peloponnes*. Berlin, 1841. Neither the remains from Troizen (Damala) nor those from Bolymnos have ever been drawn. Excavations at these ancient sites are greatly to be desired.

by a comparison of the stump found in the Nekropolis of Assos (*fig. 4, A*) with one of the interior shafts of the north-western tomb of Beni Hassan²⁶ (*fig. 4, B*), drawn with the old-fashioned *modulus* on the same scale. For such free-standing columns the channelled shaft and the broad base of Egypt were admirably fitted. These features were probably adopted, without essential change, throughout Greece. But, with the employment of the base in the functional supports of a

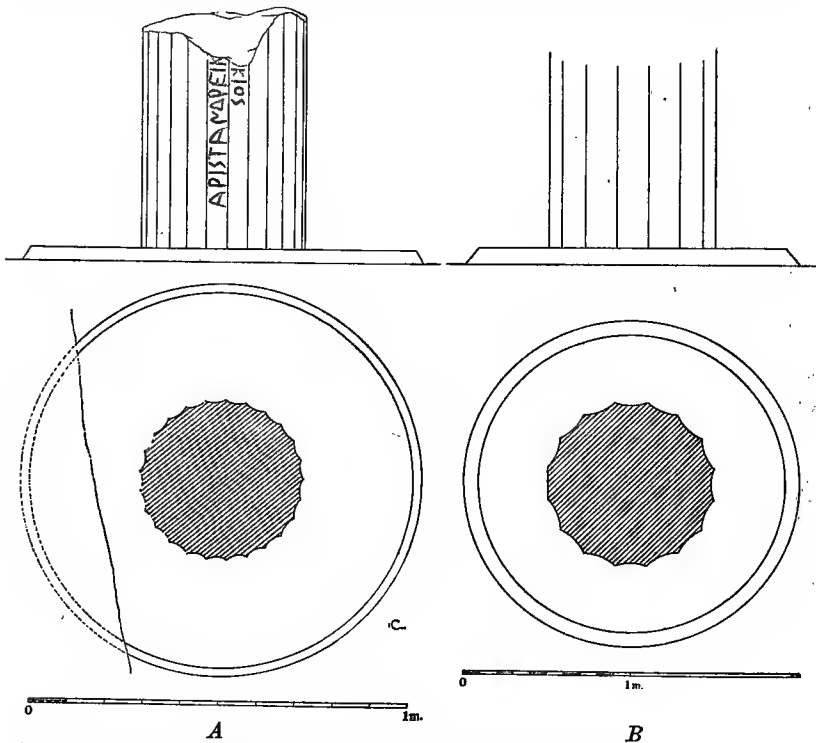


FIG. 4.—*A*, plan and elevation of the Doric shaft and base at Assos.

B, plan and elevation of a shaft and base from a tomb at Beni Hassan, Egypt.

²⁶ The measurements adopted for this illustration have been taken from the monograph of Lepsius, quoted above. That publication was based, in regard to the details in question, not only upon the previous surveys of Beni Hassan made by the French expedition, by Rosellini (*I Monumenti dell' Egitto e della Nubia*: Pisa, 1832-44), and by Wilkinson (*The Architecture of ancient Egypt*: London, 1850, pl. 2), but also upon the inedited drawings of a Russian architect, M. Jefimoff. Lepsius makes, however, the curious error of placing the arris, not the channel, in the axis of the abacus; cf. pl. xxxv. That this is not correct is evident from the drawings given by other authors (instance Rosellini, *Atlas*, vol. II, pl. 3) and especially from photographs.

building (notably in connection with the plan of the primitive temple *in antis*), a practical disadvantage made itself felt; one so serious that, in avoiding it, the appearance of the column was entirely changed. This was the interference of the projecting plinths with the passage through the intercolumniation. The slight elevation of the bases of Beni Hassan, like that of the one found at Assos, is to be explained by the extreme difficulty of cutting this member from the native rock. It is evident that, when such a base was formed of a separate stone slab, this must have been made of much greater thickness in order to bear, without cracking, the weight placed upon it. The proportional thickness thus determined may, in the buildings of small dimensions customary during the earliest ages, be estimated to have fully equalled the height of the upper step of later Doric temples. This assumption is borne out by the oldest and most carefully drawn representation of archaic Doric structures, that upon the well-known François vase.²⁷ The buildings here shown (for instance the house of the goddess Thetis, which is characterized in every way as a temple) have Doric columns with bases of considerable projection: straight-edged like those of Egypt, but higher and unbevelled. That this base was held by the designer to be an indispensable and characteristic feature, is evident from its being repeated in all the scenes where Doric columns were introduced. Nor is such a member shown upon the François vase alone.²⁸ In the archaic art of Greece channelled columns are frequently, nay generally, represented as standing upon bases of rectilinear outline.²⁹

In the *Denkmäler aus Aegypten und Aethiopien* (Berlin, 1849-59, vol. 1), Lepsius ascribes somewhat different dimensions to this column; the projection of the base, from the shaft to the upper edge of the bevel, being scaled as 0.37 m.

²⁷ *Monumenti inediti*, vol. IV, Roma, 1844-48, pls. LIV, LV.

²⁸ Compare the important representation upon the vase referred to in Note 37: furthermore, the bases of the channelled Doric shafts shown in E. Gerhard, *Auserlesene griechische Vasenbilder*; Berlin, 1839-58, vol. II, pl. 143; vol. IV, pl. 293; and, especially, pl. 281, Nos. 1, 2. The majority of the Panathenaic vases in the British Museum show Doric columns with bases.

²⁹ The wide distribution of such architectural forms throughout the ancient world is attested by the appearance, among the remains of Persian constructions referable to the age of Cyrus, of a base of precisely the same character as those of Beni Hassan, and as that now discovered at Assos. Compare the illustration published by M. Dieulafoy, *L'Art antique de la Perse; Achéménides, Parthes, Sassanides*: Paris, 1884, pl. XII and fig. 28. The materials as yet available for comparison do not suffice for us to decide with certainty whether this feature was derived by the well-trained architects of the Achaemenidae from the banks of the Nile, or from the coasts of

As illustrated in *figure 5*, the projecting stones, *AA*, would have greatly interfered with the passage. Such an obstruction had been no disadvantage before the closed tombs of Beni Hassan, but upon the threshold of the Hellenic temple it would have been intolerable. Nothing could be more natural than to fill out the narrow space between the sides of the bases, *B*, so connecting the separate blocks as to form a continuous plinth: *the common base of all the columns*. Thus originated the Doric stylobate. This would remain a mere hypothesis, but for the explicit testimony of those ancient authors who have defined this architectural term: the stylobate was the upper step alone.³⁰ And, what is still more to the point, it was in the Doric style, and in no other, that this character of a base was attached to the upper step.³¹

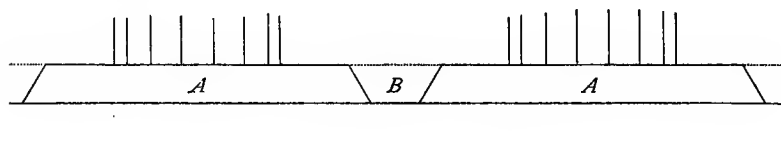


FIG. 5.

In the Ionic style the base, which, together with the capital, had been derived from Mesopotamia, consisted of mouldings. These roundels and scotias permitted great emphasis to be given to the member, its diameter being at the same time comparatively restricted. Hence, the projection of the Ionic base could never seriously interfere with the passage between the columns. In the Doric style, on the other hand, the principles of design were essentially different, and did not permit the introduction of curved lines of a contrary flexure in a member of such eminent importance to the constructive framework as the base. Moreover, the well-known tendency of the Doric, in

the Aegean. The gabled roof and archaic-Greek proportions of the tomb of Cyrus certainly favor the latter assumption.

³⁰ This is plain from the fact that the stylobate was considered requisite, even when the steps were transformed into a socle: Vitruvius, III. 4. 5. The Roman architect here evidently follows Hellenic traditions. Compare Hesychios, *s. v. κρηπίς*. The distinct character of the stylobate is especially apparent when, as in certain archaic temples of Sicily, it is of considerably greater height than the lower steps.

³¹ This all-important passage of Pollux (VII. 121) reads *στυλοβάτης, ἡ τοῦ Δορικῆς κίονος βᾶσις· σπεῖρα δὲ, ἡ τοῦ Ἴωνικῆς*. Hesychios, *s. v. στυλοβάτης*, also attributes to the stylobate the character of a base.

contrast to the Ionic,³² was to merge all the constituent parts in an inseverable whole, depriving them, as far as possible, of their individual independence. The only way, in accordance with these principles, by which the straight-lined base could be retained in the temple *in antis* and in the peripteros, was so to unite the separate slabs as to form a continuous plinth. Thus was the channelled shaft of Egypt, together with its base, introduced into the architecture of Greece, and embodied with the native Doric entablature in a fabric of perfect unity.

In æsthetic respects, the ultimate criterion of all artistic development, the creation of the stylobate was decidedly advantageous. The peripteral temple was to the Greeks an *anathema*, a votive offering to the deity. This was hereby elevated upon a single base, upon a consecrated floor, which isolated the fane even from the surrounding steps and the pavement of the temenos. Notwithstanding the fact that the stylobate, at least in later times, seems to have been conceived as extending over the entire foundation,³³ the columns of the Doric pronaos were provided with a separate plinth,³⁴ and the same member appears within the naos of those temples which were provided with galleries and inner ranges of columns.³⁵ The fact that

³² Ionic columns, from their independent and more decorative character, were more frequently employed as free-standing shafts than were those of the Doric style. The general use of the former as sepulchral monuments has led to the erroneous assumption that the ancients attached to the Ionic column a distinctly mortuary significance. This view, first suggested by O. M. von Stackelberg (*Der Apollo Tempel zu Bassae in Arcadien, und die daselbst ausgegrabenen Bildwerke*: Frankfurt am Main, 1826), has been elaborated by F. Carellius (*Dissertazione esegetica intorno all'origine ed al sistema della sacra architettura presso i Greci*: Napoli, 1831), and especially by Raoul-Rochette (*Monuments inédits d'antiquité*, Paris, 1833; and in the *Journal des Savants*, Paris, 1833). This hypothesis scarcely needs serious disproof. The frequent adoption of Ionic forms for the isolated monuments of a nekropolis is fully explained by the architectural considerations before indicated.

Instances of the employment of Doric columns as sepulchral monuments are, however, by no means uncommon. Such shafts are represented upon many painted vases: to name one collection, instance Inghirami, *Pitture di vasi etruschi*: Ed. 2: Firenze, 1852-56, vol. II, 137, 142, 154, etc. The majority of the existing remains of such columns are of the Doric style. At least one other Doric shaft stood in the Nekropolis of Assos.

³³ That the stylobate comprised the entire floor, above the foundations and steps, is evident from Vitruvius, III. 4. 2.

³⁴ This is the rule, the only exceptions being the temples of Selinous and Assos.

³⁵ Instance the Parthenon, the great temple of Zeus at Olympia, that of Aigina, that of Poseidonia,—in short all the edifices with this arrangement.

the dipteral plan, so common in the Ionic style, is never known to have occurred in the Doric, may in some measure be explained by the consideration that the inner columns would, from many points of view, have appeared altogether destitute of a base. Taken together with the greater relative height of the Ionic column, its possession of an independent base may have also contributed to the not unfrequent adoption of Ionic columns in the interior of Doric structures: instance the Propylæia of Athens.

The supports employed by the Greeks before the introduction of the proto-Doric shaft from Egypt seem to have been round wooden posts, encased in sheets of beaten metal, without vertical striation, but provided with bases as well as capitals of round mouldings. The engaged columns of the Tholos of Atreus, and that represented upon the relief above the Gate of the Lions at Mykenai, certainly imitate empæistic forms. While the use of these columns was entirely discontinued in Greece, reminiscences of them were preserved in the corresponding details of Etruscan architecture. The so-called Tuscan order had derived many of its leading features from Greece at a period when the columns of Beni Hassan were still unknown to Hellenic designers. In Italy the development of the column, not being influenced by the straight-lined and projecting base, followed an entirely different course, much less successful than that of Greece. The base of the former, with its circular plinth and tore of equal height, described by Vitruvius (IV. 7. 3), retained the primitive Hellenic forms almost unaltered. Such bases as these could never have been combined in a continuous plinth. Without the influence of Egypt the column of the Doric style must have remained similar to that of the Etruscan temple.

Among the Greeks the adjacent bases of the functional supports were so connected as to form the stylobate; but the case was not the same with the free-standing shafts of the Doric style. In isolated monuments, æsthetic and practical considerations, as well as ancient traditions, led to the retention of the independent plinth. The Greeks seem never to have been guilty of that modern solecism:³⁶ the erection of a free-standing column without a base. The inorganic juncture of a channelled shaft with a pavement was held to be inadmissible, even by the designers of the Hellenistic period; as is exemplified by the before-

³⁶ Instance the light-house on the jetty at Margate, and similar Doric columns without bases in London, Paris, etc.

mentioned column of the Athenian cemetery. Vase-paintings, too numerous to require specification, show that, after the characteristic forms of the original Doric base had been entirely forgotten, the three steps of the peripteros were placed beneath the channelled column, to form a transition between the horizontal pavement and the upright shaft.

That the Egyptian forms of the base, however, long continued unaltered, is proved by the accurate representation of this member in the careful drawing of a vase in the museum of Florence.³⁷ A Doric column is there shown, standing upon a low projecting slab, with bevelled edge, in all respects like the bases of Beni Hassan. The indications of primitive usage to be derived from such representations, —indeed, the entire history of Greek architecture,—might well have led to the assumption that the Egyptian base would be found in Hellas, were it possible to bring to light some column of the archaic period,³⁸ erected in entire independence of any other support. These conditions are fulfilled in the discovery now published, which provides a striking proof of this theory of development.

Unfortunately, so little remains of the column that it is not possible to perceive from it what progress the Asiatic Greeks of the sixth century had made in that incomparable artistic development which led from the mechanical baldness of the rock-cut supports of Beni Hassan to the organic perfection of the inclined and curved shafts and of the vigorous and graceful capitals of the Parthenon. No epoch of architectural history is of greater interest, the knowledge of none could be of greater practical value, than that immediately preceding the first appearance of the Doric style in its completeness: for complete it is, even in the oldest known temples. The column from Assos is a memorial of this period; and, though but a fragment, forms one of the most important results of the investigations carried on at that site, by furnishing a direct and decisive proof of the Egyptian origin of the Doric shaft, and by explaining the character of a common base which, throughout antiquity, was attached to the stylobate.

JOSEPH THACHER CLARKE.

³⁷ Engraved in Inghirami, *op. cit.*, vol. III, pl. CCCXIV.

³⁸ It may be observed in this connection that the peculiarly provincial character of the art of Assos greatly increased the probability of primitive features being there retained. The sculptures of the temple upon the akropolis, for instance, are so archaic that they have hitherto been universally regarded as nearly a century more ancient than the date to which the building is now assigned.

