

ABACI FROM THE ATHENIAN AGORA

(PLATES 73, 74)

THE numbers of the following two abaci continue those of inscriptions from the Athenian Agora published in this volume of *Hesperia*.

4 (Plate 73). Abacus-*sekoma* Fragment.

Corner of table-top of Hymettian marble with upper and lower surfaces and two adjacent sides preserved; irregularly broken on third side; the fourth side (at right) is not original but is roughly finished in a straight line perpendicular to the adjacent sides. Found June 10, 1937 in a context of the 2nd century after Christ in a well outside the Agora to the southwest (E 14:2).

Length, 0.21 m.; width, 0.179 m.; thickness, 0.053 m.

Height of letters, 0.011 m.

Inv. I 4940.

The letters are inscribed on the upper surface of the table in one line parallel to the front edge and set in from it. One raised band runs along the left edge of the table just before the beginning of the inscription; another raised band runs alongside the tops of the letters. On the other side of this raised band is a round hole, roughly cut through to the back (tapering from a diameter of 0.043 m. on top to 0.018 m. beneath), which is surrounded by a raised band; part of another similar hole may be seen in the break with its surrounding raised band interlocking with that of the first.

Early 3rd century B.C. (?)

Ϝ Η ϙ Δ Ϛ ϛ Ι C [

Measuring tables or *sekomata* have long been known from the Hellenistic period in Delos and elsewhere; see *Délos*, XVIII, *Le mobilier délien*, pp. 167-185, where several kinds are distinguished. Most usual are the slabs in which the complete shapes of the measures were cut; into these cavities metal liners were set, sometimes movable and sometimes permanently fixed. A smaller number shows holes similar to the one in our fragment but with cuttings in the form of notches for permanent attachment of the metal measures. Here there is no evidence of attachment, so the hole must have served merely as a temporary socket for the measure. That the measure was not only movable but also often removed is suggested by the many tiny pockmarks to the left of the hole which may well have resulted from frequent use of this spot as a resting-place for the sharp-pointed conical measure. But why would the cone be rested here while filled instead of in the hole? Surely the reason must be so that both parties to the

measuring transaction could see that it did not leak, as they could not have seen if the bottom had been set in the hole. It is also obvious that the sharp point suggested by these pockmarks indicates a vessel that was closed at the bottom and so had to be lifted out of its socket to be emptied (unlike many of the fixed metal liners which like their stone sockets must have had outlets which could be plugged and unplugged).

This combination of measuring table and abacus is known to me in only one other example: *I.G.*, XII, 5, Naxos 99, most extensively discussed by Dumont in *Rev. Arch.*, II, 1873, pp. 43-47. The Naxian piece is preserved complete, with basin-like holes cut for six measures ranging from a half-*chous* to a *kyathos* and a row of numbers as follows:

X Ϝ H ϙ Δ Ϟ † T | C

Whether the combination of measuring table and counting board was anything more than an economical use of one piece of furniture for two purposes is difficult to determine. Certainly the great majority of measuring tables seems to have functioned without the row of numbers for tallying purposes, since enough of them show the names of the measures cut into the stone to make unlikely the use of a more fugitive medium for other inscriptions like the abacus numbers. Furthermore, the tally of the units measured (so many *choes*, *kotylai*, etc.) could most easily be kept by lining up pebbles next to the appropriate cavities, so that the abacus numbers are not necessary for keeping track of commodity amounts. As a matter of fact, both the size of the numbers (from 500 or 1000 down) and the fact that the basic unit is specified as a drachma and divided into multiples and fractions of obols show that the abacus was for counting money rather than commodity amounts.¹ But since the measuring of commodities must most often have been accompanied by either sale or purchase, it would have been convenient after tallying the number of units measured to compute the total price by arranging pebbles beneath the appropriate numbers on the counting board. For example, if the wine in question amounted to three *choes* and three *kotylai* and the price was two obols for a *chous* (12 *kotylai* = 1 *chous*), then for each of the three pebbles that had been set against the *chous*-measure two would be put against the obol sign and for the three pebbles next to the *kotyle*-measure one would be put beneath the half-obol sign, and the total price could be seen to be one drachma (i.e., six obols) and a half-obol.

The size of the numbers on this abacus (from 500 down) is still too great to be limited to the comparatively petty transactions for which a comparatively small-unit *sekoma* was designed. It is likely therefore that the abacus was used to calculate prices not only in what might be called the retail trade but also for wholesale transactions.

¹ It is, of course, possible that the numbers might be used for tallying weights, but since that involves the assumption of some kind of weighing machine the monetary use is simpler.

Speculation about the original size of the slab is perhaps vain, but the fact that only two more numbers (OX) can have appeared at the right end suggests that the total width may not have been great. The restoration of these two numbers and a raised band along the right edge would almost exactly center the hole for the measure. As far as length is concerned, such a comparatively narrow slab (*ca.* 0.24 m.) would be unlikely to be more than twice as long, so the number of sockets may have been five or six.

5 (Plate 74). Abacus.

Fragment of large block of Pentelic marble with one narrow surface (top) preserved, picked, and perhaps part of one of the broad surfaces, rough picked. Taken up in 1933 from a marble dump of the 19th century excavations on the east slope of Kolonos Agoraios.

Length, 0.45 m.; width, 0.207 m.; thickness, 0.32 m.

Height of letters, 0.022-0.03 m.

Inv. I 1097.

Shallow-cut letters straggle across what must have been the top of the block at the time of its use as an abacus, since pebbles must have been placed next to the numbers.

] H \square Δ Γ \vdash O C [

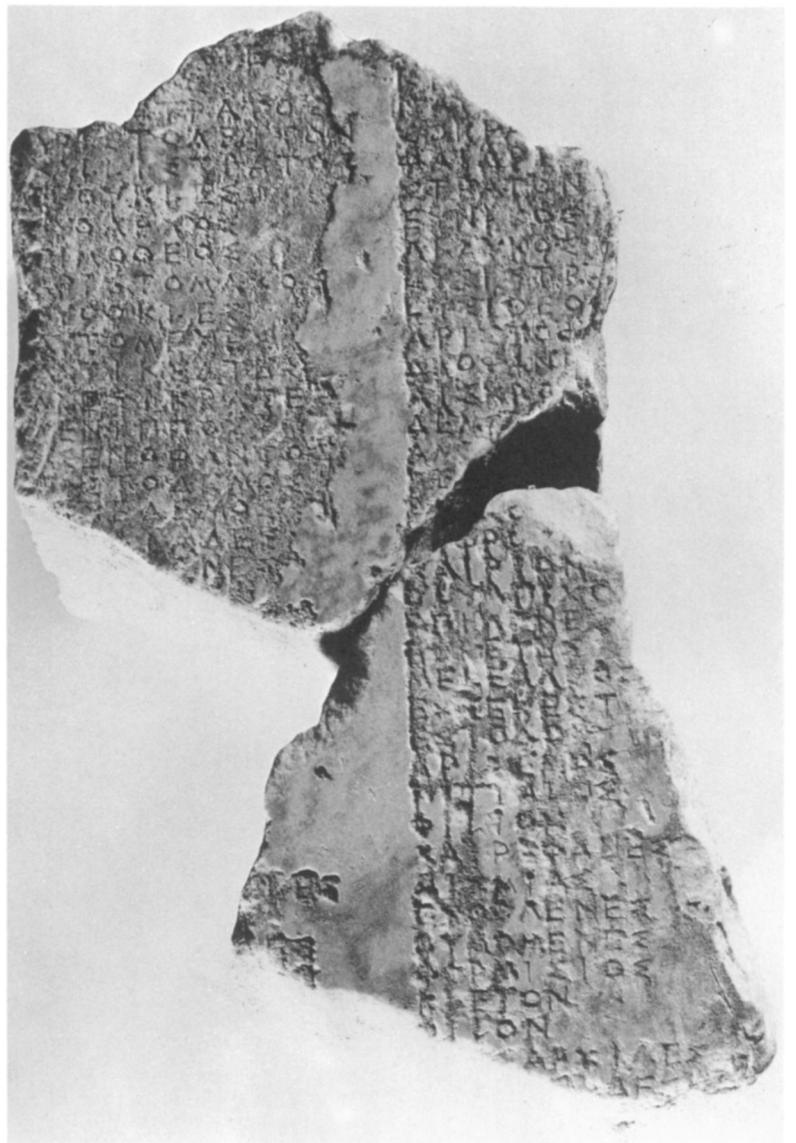
It seems likely that the stone was somewhat casually adapted for use as an abacus; its original function is not clear.

MABEL LANG

BRYN MAWR COLLEGE.



No. 2 I 953 f



No. 3 Roman Agora 20 and Agora I 1008c



No. 2 I 953 d + f + c

DONALD W. BRADEEN: NEW FRAGMENTS OF CASUALTY LISTS



No. 4 I 4940

MABEL LANG: ABACI FROM THE ATHENIAN AGORA



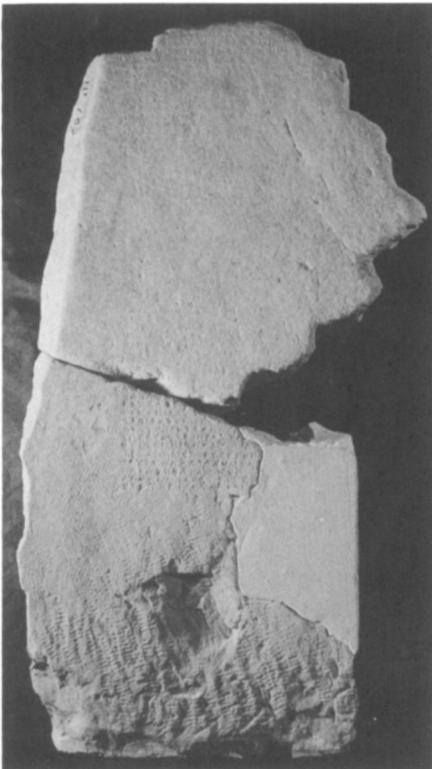
a. *I.G.*, II², 1628 as set up in E.M.



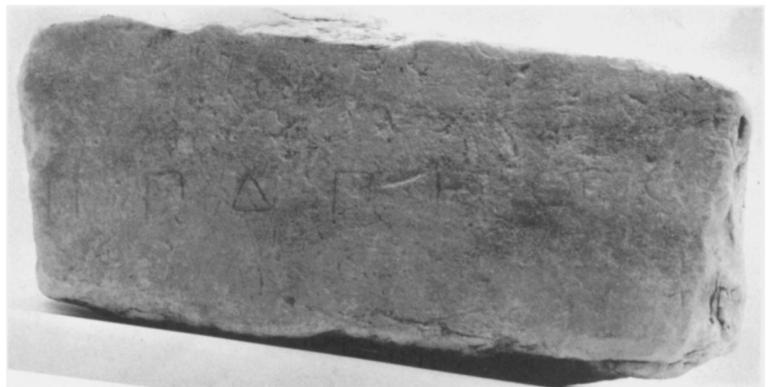
b. Remains of Heading of *I.G.*, II², 1628



d. Remains of Heading of *I.G.*, II², 1631



c. Agora I 5419 + E.M. 10384a



No. 5 I 1097

MABEL LANG: ABACI FROM THE ATHENIAN AGORA

DONALD R. LAING, JR.: A RECONSTRUCTION OF *I.G.*, II², 1628