

ALESSANDRO DE MAIGRET
(*Naples/Ṣan‘ā’*)

New stratigraphical data for the ancient chronology of Tamna‘

The excavations carried on until now in Tamna‘ (today’s Hajar Kuḥlān, Wādī Bayḥān, Yemen) by the Italian-French Archaeological Mission (four campaigns, from 1999 to 2002), have brought to light a great temple, devoted to the goddess Athirat, on the north-western limit of the site (Sector A) as well as ten houses in the so-called “Market Place”, situated approximately in the centre of the city (Sector B).¹ The architectural technique used in all these constructions, as well as the pottery typology and the 14C sample analyses allowed us to date all buildings to a period that goes from the end of the 4th century BC to the 2nd century AD. For their archaeological characters, the private houses near the South Gate and “Timna Temple 1”, dug by the American Foundation for the Study of Man in 1950–1952,² should also be included to the same chronological panorama.

Some brief archaeological soundings performed in the second campaign (2000) in the Sectors A and B, have allowed us for the first time to penetrate below this main and more known constructive level (Stratum A) and to collect some interesting information about the cultural phase that preceded it (Stratum B).

The archaeological sounding in Sector A

The first sounding (A.00/S2) was performed (25/9–11/10/2000) in the open court of the temple of Athirat, against the wall M60, which delimits the sanctuary’s northern row of rooms from the inside (fig. 1). The area of excavation, of 3×3 m, has been confined to an area free from structures, and the depth, which started at the absolute level of 10.7 m, went up to 5.1 m (fig. 3a). The total depth of the sampled area was therefore 5.6 m. Given the particular character of the temple’s basement, which consists of a rectangular platform (1.8 m high) contained by a strong stone wall filled up with depurated, pressed earth, the

¹ A. DE MAIGRET, *Tamna‘, Ancient Capital of the Yemeni Desert. Information about the First Two Excavation Campaigns (1999, 2000)*, Proceedings of the Conference “Arid Lands in Roman Times”, Rome 9–10 July 2001 (in press); ID., *Gli scavi di Tamna‘, antico crocevia commerciale nel deserto Yemenita*, Proceedings of the Conference “Early Navigation and Trade in the Indian Ocean”, Ravenna 4–6 July 2002 (in press).

² G.W. VAN BEEK, *Recovering the Ancient Civilisation of Arabia*, *Biblical Archaeologist*, 15 (1952), p. 2–18; W. PHILLIPS, *Qataban and Sheba. Exploring the Ancient Kingdoms on the Biblical Spices Routes of Arabia*, New York 1955.

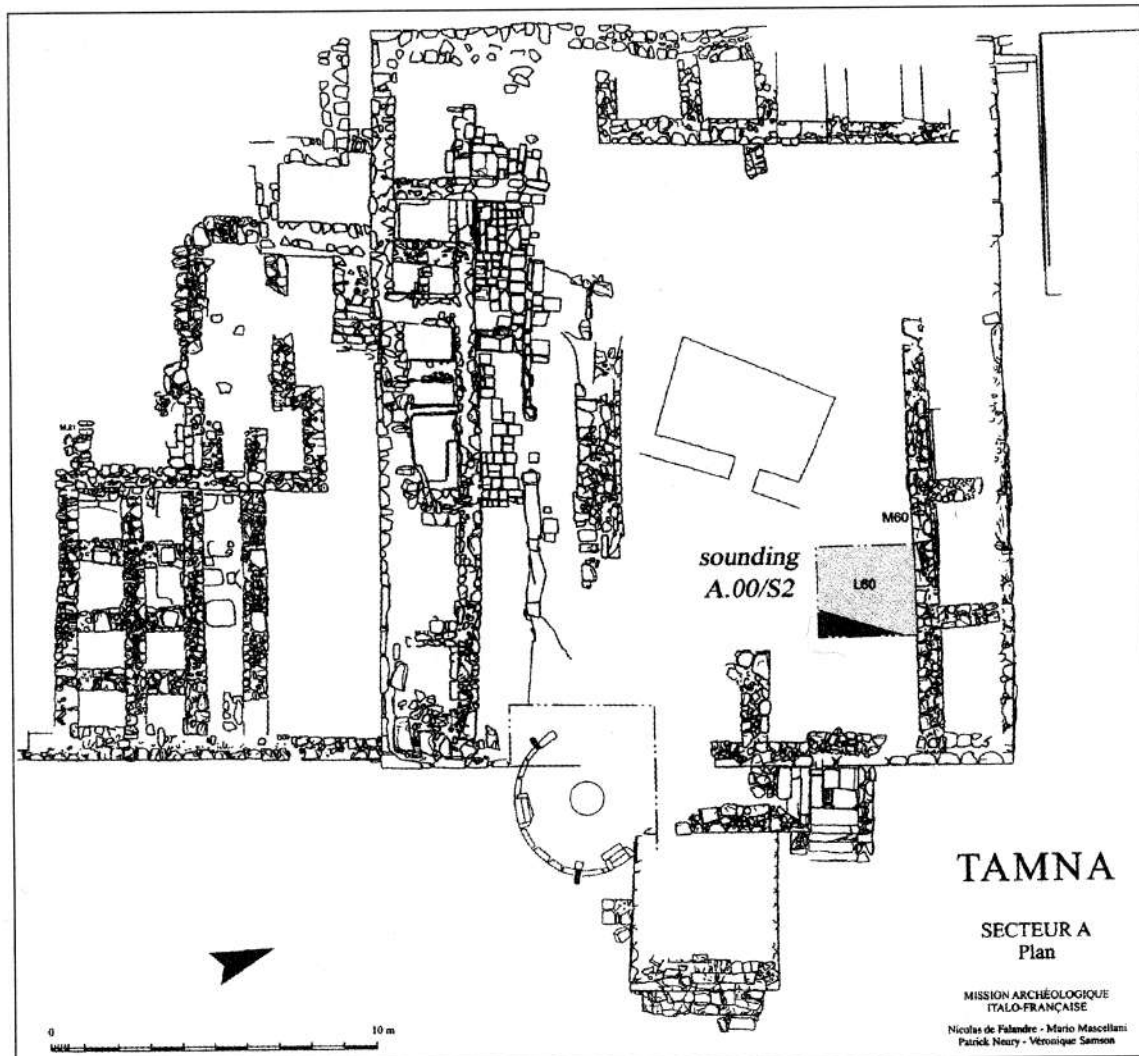


Fig. 1. Localisation of sounding A. 00/S2 in the temple of Athirat

sounding revealed in its superior part and for a thickness of 1.80 m such a kind of earth (*level 1*), whose artificial origin was proven by alternated, multicoloured and levelled thin layers. Wall M60 hardly notched such level and its base stones stopped at a level of 10.5 m. *Level 1* turned out to be rather poor in pottery and it stopped at a level of 8.9 m, in a well-defined horizontal way. A charcoal sample, collected at the base of this *level 1*, gave us a calibrated dating sometime between 400 and 110 BC (Beta Analytic 157166).

At this point a layer of compact light brown earth full of mud-bricks of the same colour and pottery fragments (*level 2*) started. The bricks were related to a strong wall (M70) that, at 8.5 m, started to appear in the eastern section of the excavation. The only visible limit of this wall, facing west, departed from the northwest corner of the sounding and disappeared into its south section (to 1.1 m from the southeast corner), showing a southwest-northeast orientation for the structure. Going down into the area at the northwest of M70 (in the space

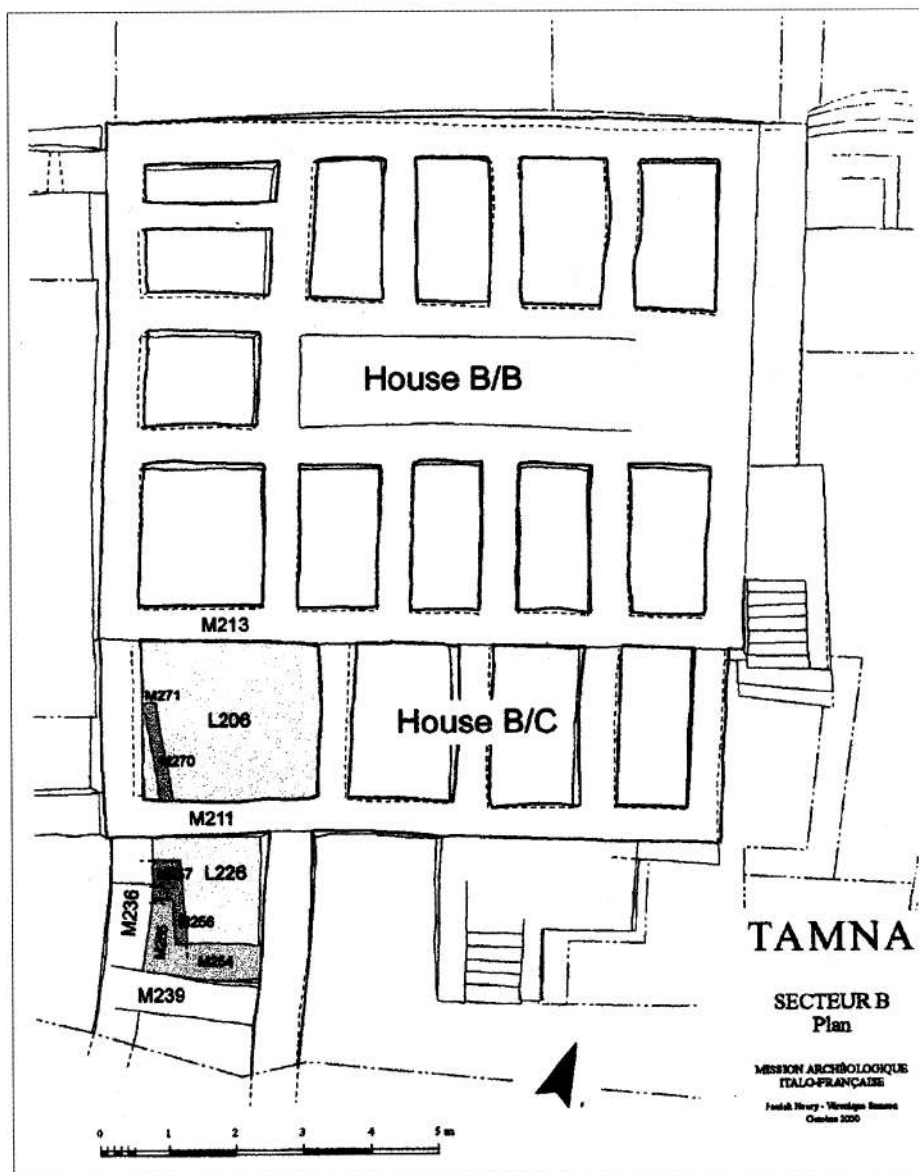


Fig. 2. Localisation of sounding B. 00/S1 (L206) and B.00/S2 (L226) in House B/C

that was called L60), the type of ground didn't change very much, and numerous animal bones were added to the abundant pot shards.

To level 7.4 m the brick wall M70 revealed an enlargement of its base in L60 (of around 20–30 cm). This foundation stopped rather irregularly after about 30 cm, leaving the place to a loose, light greyish-brown ground (*level 3*). We were here at level 7.1 m, and we decided to go down only in the west half of the sampled area with the purpose of verifying the presence of other deeper structures and to pick up further pottery samples. The excavation continued in this soft greyish earth, where abundant ceramics, numerous bones and small charcoal fragments were found. Once level 5.1 m was reached, and having identified neither structures nor changes in the ground, we decided to arrest the work, not

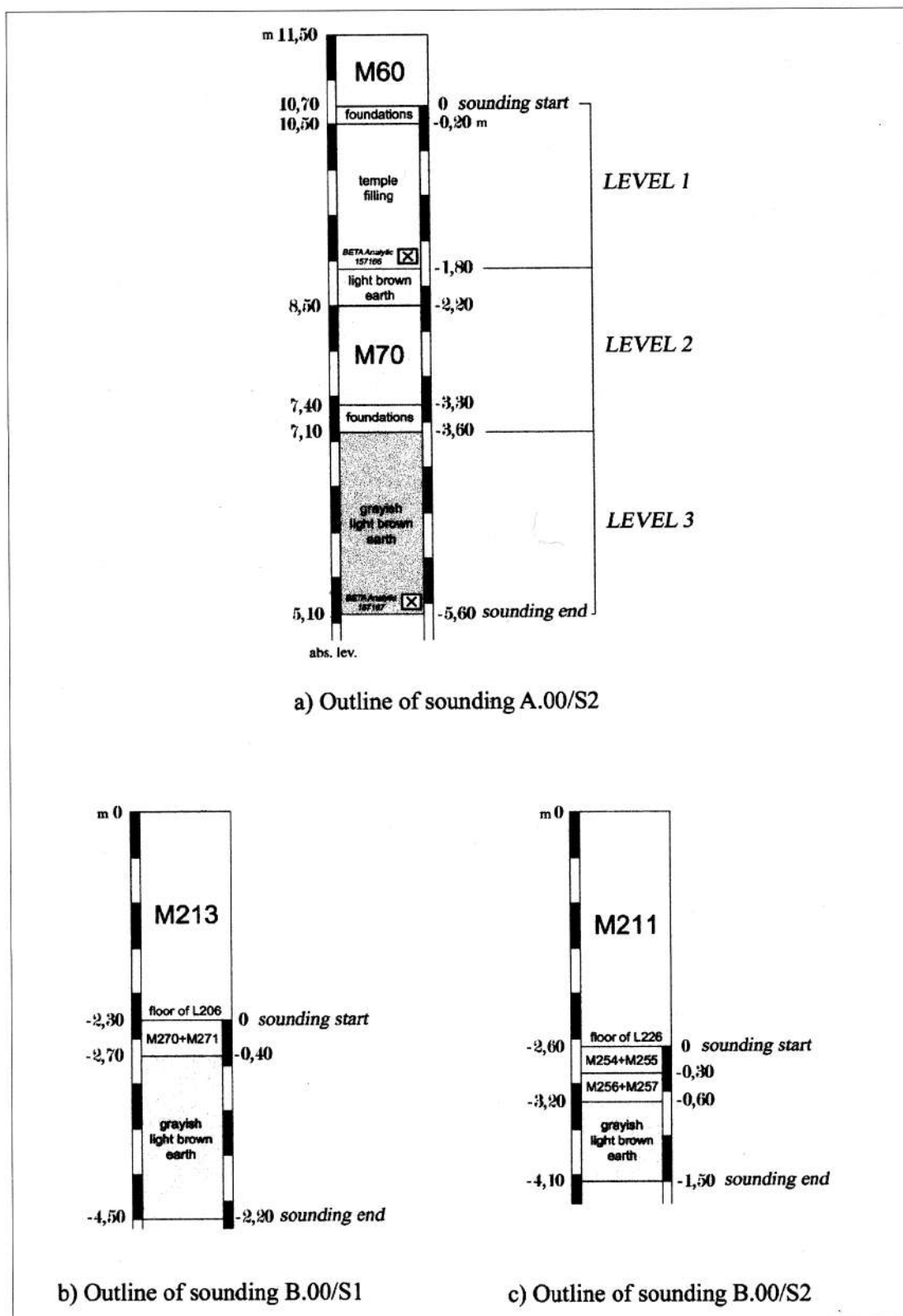


Fig. 3. Outlines of Tamna' stratigraphical soundings

to mention the danger of a possible collapse of the walls of the sounding. A charcoal sample, collected at the bottom of the sampled area, gave us a calibrated dating between 930 and 770 BC (Beta Analytic 157167). According to the lower absolute level reached in the excavation (5.1 m), and considering that level 0.0 m corresponds to that of the country ground outside the tell, it could be supposed that a further deepening of the probe is bound to uncover (if there were not, of course, natural relieves) other more ancient archaeological levels for a depth of about 5 m, before we could have reached the virgin soil.

The pottery

The pottery recovered in *level 1*, related to the artificial filling of the rectangular basement of the temple of Athirat, was not abundant (6 *zambils* [T.00.A/26, 29, 33, 35, 39, 70], of which some were half full), also probably because of the depurated character of this type of earth. Judging from the forms of the vases (fig. 4) that re-enter among the common types in the levels F, E and D of Hajar Bin Humayd,³ it would appear that the earth used for packing the base platform of the temple had been taken from a near layer of demolition (abundant in the orange earth from crumbled bricks, common in many of the structures we dug in Tamna') which should be datable between 350 and 250 BC. Among the characteristic forms we quote the cups with superiorly flat rim (fig. 4: A26:1),⁴ the bowls with flaring edge (fig. 4: A29:13; A33:1),⁵ the jars with straight natural edge decorated with incised "rope" and "chevron" designs (fig. 4: A29:1; A35:2)⁶ or combed wavy lines (fig. 4: A29:2,3),⁷ the ring-bases with a single grooved straight line (fig. 4: A29:15).⁸

The pottery from the *level 2*—contextual to wall M70—appears to us different (figs. 5–8), showing at first sight the specimens typical of what we could call "carinated pottery", well underlined, for instance, from the repertoires of Yalā (layer A)⁹ and of Hajar Bin Humayd (levels preceding to the layer K). As we said, pot shards recovered in this level were particularly numerous (12 full *zambils* [T.00.A/43, 47, 49, 50, 52, 58, 59, 60, 64, 65, 66, 69]); this abundance and the fact that they were found together with a lot of capri-ovine bones, would lead to think at a dump which grew in L60, against the western face of wall M70. Carinations are common either in bowls with ring-base (fig. 5) or in jars of different shapes (fig. 6). Many forms bear a more definite comparison with the "carinated" repertoire of Yalā and Hajar Bin Humayd, showing narrow relationships with vases and/or vascular attributes from former's layer A (c. 800–550 BC) and latter's levels K–O (c. 750–550 BC). I refer particularly to the craters with vertical walls and multiple engraved decorations (fig. 6: A49:20),¹⁰ to those ones with external fillet under the rim (fig. 7: A49:15; A50:1),¹¹

³ G.W. VAN BEEK, *Hajar Bin Humeid. Investigation at a Pre-Islamic Site in South Arabia*, Baltimore 1969.

⁴ See, for instance, G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 174, fig. 31: H755, H744, H730; p. 241, fig. 98: H1007, H953, H611.

⁵ *Ibid.*, p. 241, fig. 98: H705; p. 236, fig. 93: H502.

⁶ *Ibid.*, p. 254, fig. 111: H184; p. 187, fig. 44: H813.

⁷ *Ibid.*, p. 194, fig. 51: H815; p. 206, fig. 63: H485; p. 214, fig. 71: H609.

⁸ *Ibid.*, p. 225, fig. 82: H173.

⁹ A. DE MAIGRET, *La ceramica sabea. Specificità e sviluppi da uno studio delle forme*, Arabia, 1 (2003), in press.

¹⁰ A. DE MAIGRET, *La ceramica sabea, cit.*, fig. 3: 4–7; G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 214, fig. 71: H1866.

¹¹ A. DE MAIGRET, *La ceramica sabea, cit.*, fig. 7: 6, 7; G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 186, fig. 43: H1914; p. 211, fig. 68: H2304.

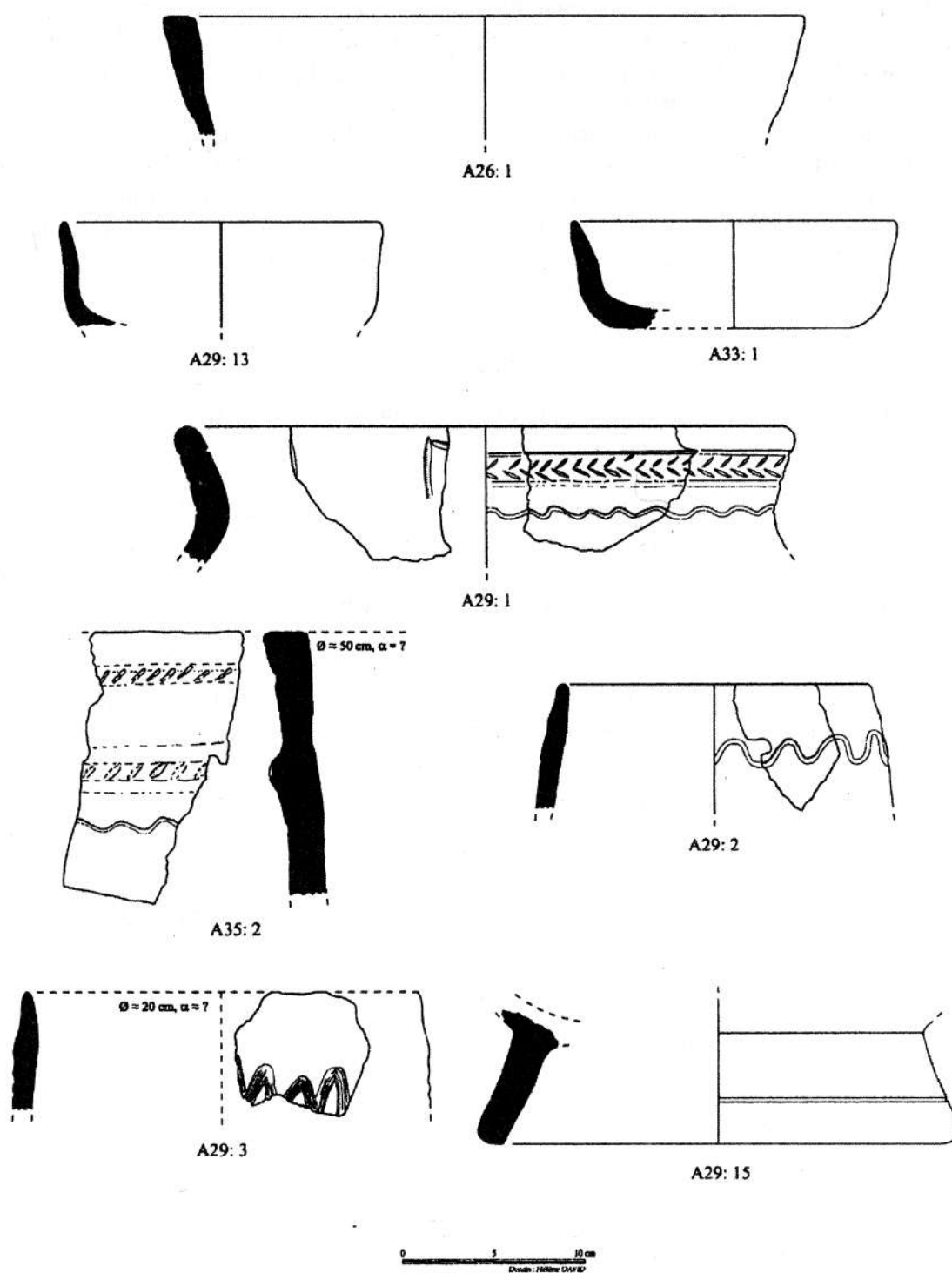


Fig. 4. Tamna'. Pottery from sounding A.00/S2, level 1

to the big jars with parallel horizontal fillets (fig. 7: A50:10),¹² to the piriform jars (or “torpedo jars”) with narrow flaring neck (fig. 7: A49:18,19; A58:8; A69:3),¹³ to the lids with painted or incised decoration (fig. 7: A69:6),¹⁴ to the digitate handles of lids (fig. 7: A47:19,20),¹⁵ to the loop handles (fig. 7: A64:11).¹⁶ The comparisons with the materials from the layer A of Yalā seem particularly fitting: I would say that, in a general comparison, the two repertoires—that of level 2 from Tamna¹ sounding A.00/S2 and that from Yalā “House A”—seem almost the same (as further approaches to the Yalā repertoire, note the perforated lids [fig. 8: A64:10; A69:2],¹⁷ the large deep bowls with double rim [fig. 6: A64:2],¹⁸ the round buttons applied as a decoration under the rim [fig. 8: A64:5]¹⁹ and even the palaeography of the inscriptions [fig. 8: A64:12]).²⁰

The pottery of level 3—which was found under the base of the mud-brick wall M70—was also abundant, (10 full *zambils*: [T.00.A/71, 74, 77, 79, 83, 84, 87, 92, 94, 95]. Due to the absence of structures in the narrow dug space, it is difficult to make hypothesis on its origin, but the big quantity of bones that accompanied it should still reveal a dumping function of the zone. The typology of the vases seems similar to that seen for level 2 but, to a more careful examination, we note at least two main variants: 1) the comparisons with the repertoire from the layer A of Yalā clearly decrease; 2) there is a gradual increasing in the number of the comparisons with pieces that, even if present in levels K–O of Hajar Bin Humayd, seem to demonstrate a more common frequency in the most ancient layers (P–S) of that site. These observations, even if generic, seem to confirm a greater ancientness of the collection, as pointed out from the stratigraphical datum and the above mentioned C14 results. For the comparisons with the lowest layers of Hajar Bin Humayd, we note particularly the carinated bowls with a single groove under the rim (fig. 8: A77:4; A84:1),²¹ an increasing number of ledge handles (fig. 8: A84:4; A94:1; fig. 9: A94:7,8),²² the incised and/or painted decoration on the vertical walls (fig. 9: A79:4),²³ the jars with narrow flaring neck (fig. 9: A84:5,10),²⁴ sometimes with an inside support for the lid (fig. 9:

¹² A. DE MAIGRET, *La ceramica sabea, cit.*, fig. 19: 1, 2; G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 177, fig. 34: H2180; p. 202, fig. 59: H2796.

¹³ A. DE MAIGRET, *La ceramica sabea, cit.*, figg. 21, 22 (I call these jars “giare onerarie” (“cargo jars”) for an hypothetical function suggested by their shape and their international diffusion [cf. p. 6]); G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 256, fig. 113: H2026, H1884 (G. Van Beek calls these jars “Type 4100 (sand-temper) ware”; he remarks their wide spread [p. 369]).

¹⁴ A. DE MAIGRET, *La ceramica sabea, cit.*, figg. 23–24; G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 191, fig. 48; p. 192, fig. 49. The decorated motives on lids end at Hajar Bin Humayd with level M: as a consequence they represent a terminus ante quem around 600–650 BC.

¹⁵ A. DE MAIGRET, *La ceramica sabea, cit.*, figg. 23, 24; G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 191, fig. 48: H2068.

¹⁶ A. DE MAIGRET, *La ceramica sabea, cit.*, fig. 26: 1–6; G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 193, fig. 50: H2067; p. 190, fig. 47: H2069.

¹⁷ A. DE MAIGRET, *La ceramica sabea, cit.*, fig. 25: 1–4.

¹⁸ *Ibid.*, fig. 4: 1, 3; fig. 5: 2, 3.

¹⁹ *Ibid.*, fig. 19: 1; fig. 20: 6.

²⁰ *Ibid.*, fig. 2: 5–8; fig. 9: 7, 8; fig. 21: 2; fig. 22: 4–6.

²¹ G.W. VAN BEEK, *Hajar Bin Humeid, cit.*, p. 176, fig. 33: H2835; p. 227, fig. 84: H2955, H2632X; p. 228, fig. 85: H2834; p. 238, fig. 95: H2644.

²² *Ibid.*, p. 247, fig. 104: H2523, H2592; p. 250, fig. 107: H3019, H3020; p. 242, fig. 99: H2744; p. 246, fig. 103: H2789.

²³ *Ibid.*, p. 195, fig. 52: H3098.

²⁴ *Ibid.*, (e.g.) p. 179, fig. 36: H2928, H2934.

A94:9),²⁵ the wide mouth jars with expanded rim (fig. 9: A84:8).²⁶ The palaeography of the inscription on a cup (fig. 9: A84:9) should be compared with that on two pot-shards from the layer B of Yalā.²⁷

The archaeological soundings in the Sector B

Two other brief sample excavations were performed in the rooms of a private house dug in the second campaign (September-October 2000) on the southern limit of the "Market Place" (fig. 2). The first one (B.00/S1) was carried on in the floor of *locus* L206 and the second (B.00/S2) in that of *locus* L226.

L206 is the larger (2.6 m×2.4 m) of a row of rooms (house B/C) which were annexed, from south, to a great and beautiful house (house B/B, or "bayt Ya'ūd", as from the inscription found in its northern side). What is preserved of both these buildings, is their high and massive stone basement, perfectly levelled on the upper part in order to accommodate the mud-bricks of the upper floors (today disappeared). In L206, we dug down to its earthen floor which, as in the other rooms of both the houses, corresponded to an inside offset of the stone walls (fig. 3b). Here the comparative level was of -2.30 m from the upper face of the room northern wall (M213). Going down below this floor, two small mud-bricks walls were found (M270 and M271), showing the same orientation of L206. These structures delimited a *locus* (L260), which entered under the south-western corner of L206. Here the pottery clearly changed in comparison to that found inside the houses, and we decided to continue to dig, carefully isolating the materials. The walls M270 and M271 terminated after a while and the sounding continued, without recovering further structures, in a light brown-greyish earth with inclusions of bricks fragments down to a level of -4.50 m from the upper face of the northern wall of L206 (M213).

The second sounding was carried out breaking down the earthen floor of L226, an adjoining room to L206 (fig. 2). Used as sheepfold, it had to be annexed against the southern side of house B/C in a second time. Under the floor, at a level of -2.60 m from the surface of the northern wall (M211) of the room (fig. 3c), two rough stone structures were recovered (M254 and M255). They were partially hidden by the foundations, respectively, of the southern (M239) and western (M236) walls of L226. At this level, the pottery turned out to be of the classical carinated type. Around 30 cm deeper, other two stone structures appeared, M256 and M257, which, starting from under M255, turned to West, disappearing under M236, in correspondence of the door that allowed the access to the sheepfold L226. The digging that continued to the East of these structures, revealed their scarce depth: the bases of the rows didn't go under the level of -3.20 m. The ground here was light brown-greyish with frequent inclusions of pot-shards and animal bones. The excavation was arrested to a level of -4.10 m.

The pottery

The pot-shards we collected in B.00/S1—under the floor of L206—were relatively abundant: 9 half-full *zambils* (in order of deepness: T.00.B/282, 285, 286, 293, 295, 299,

²⁵ *Ibid.*, p. 179, fig. 36: H3012; p. 196, fig. 53: H3182; p. 248, fig. 105: H3072, H3046.

²⁶ *Ibid.*, p. 202, fig. 59: H2839, H2567; p. 250, fig. 107: H3019, H3020; p. 252, fig. 109: H2470.

²⁷ G. GARBINI, Yemen.

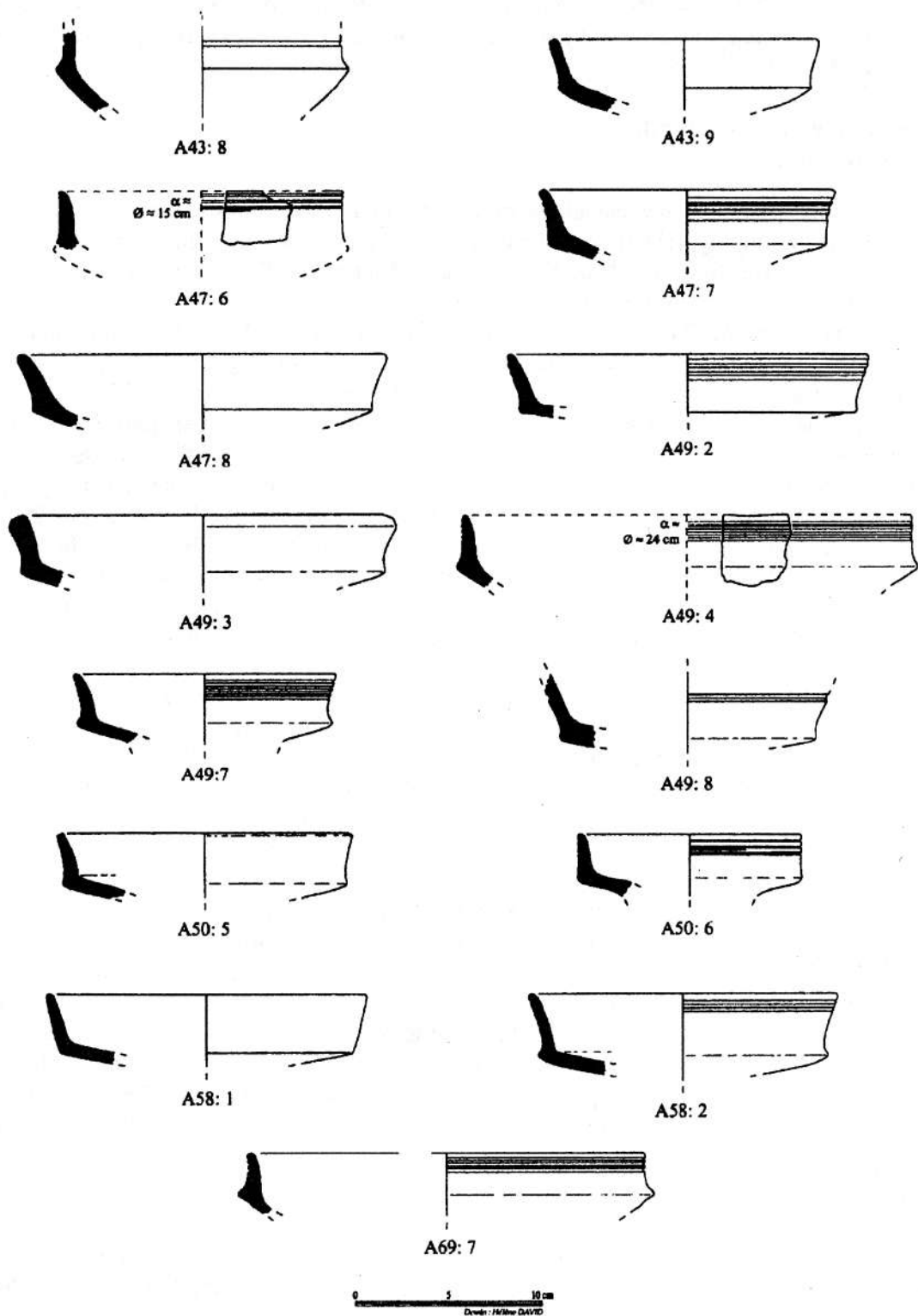


Fig. 5. Tamna'. Carinated bowls from sounding A.00/S2, level 2

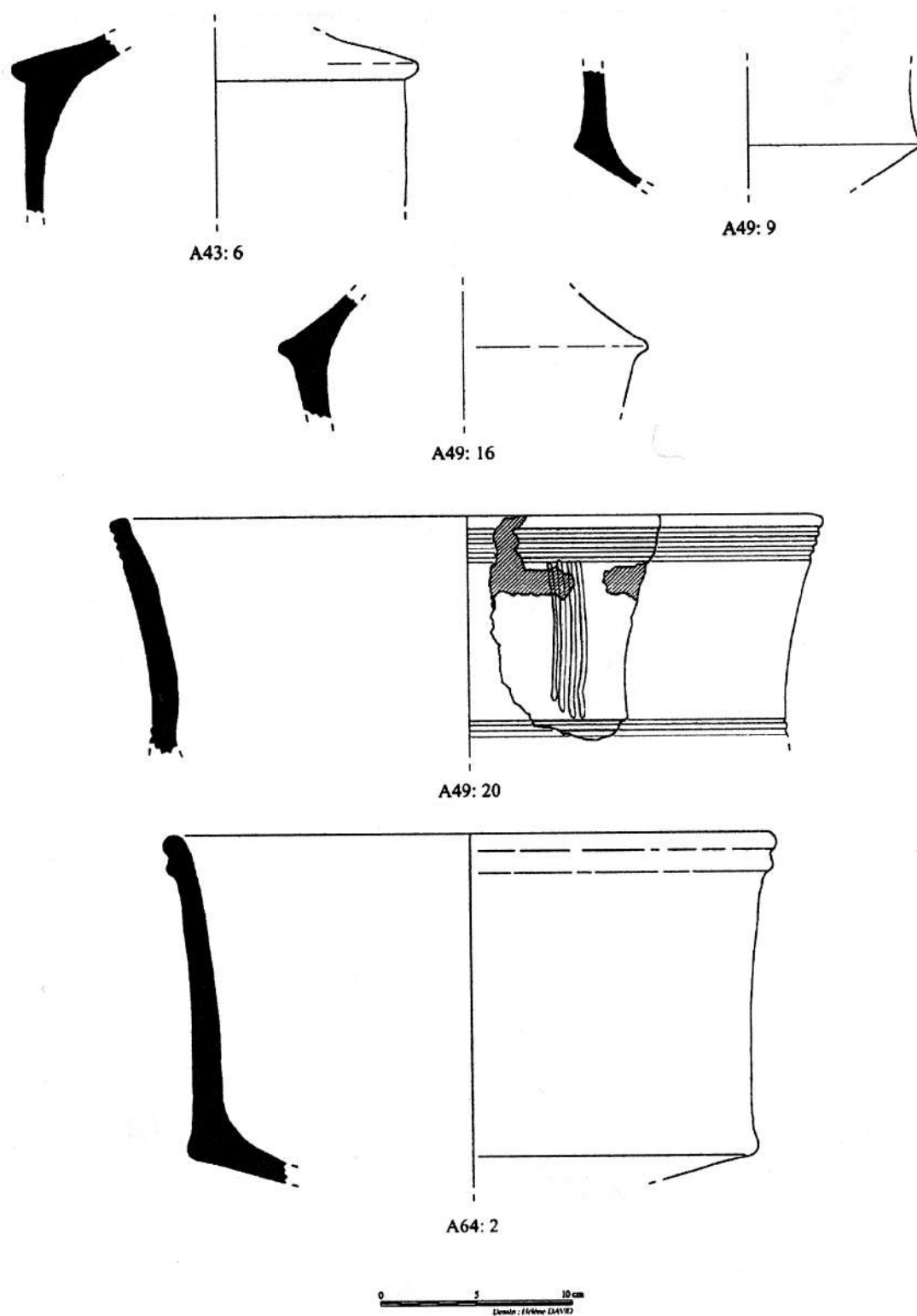


Fig. 6. Tamna'. Carinated jars from sounding A.00/S2, level 2

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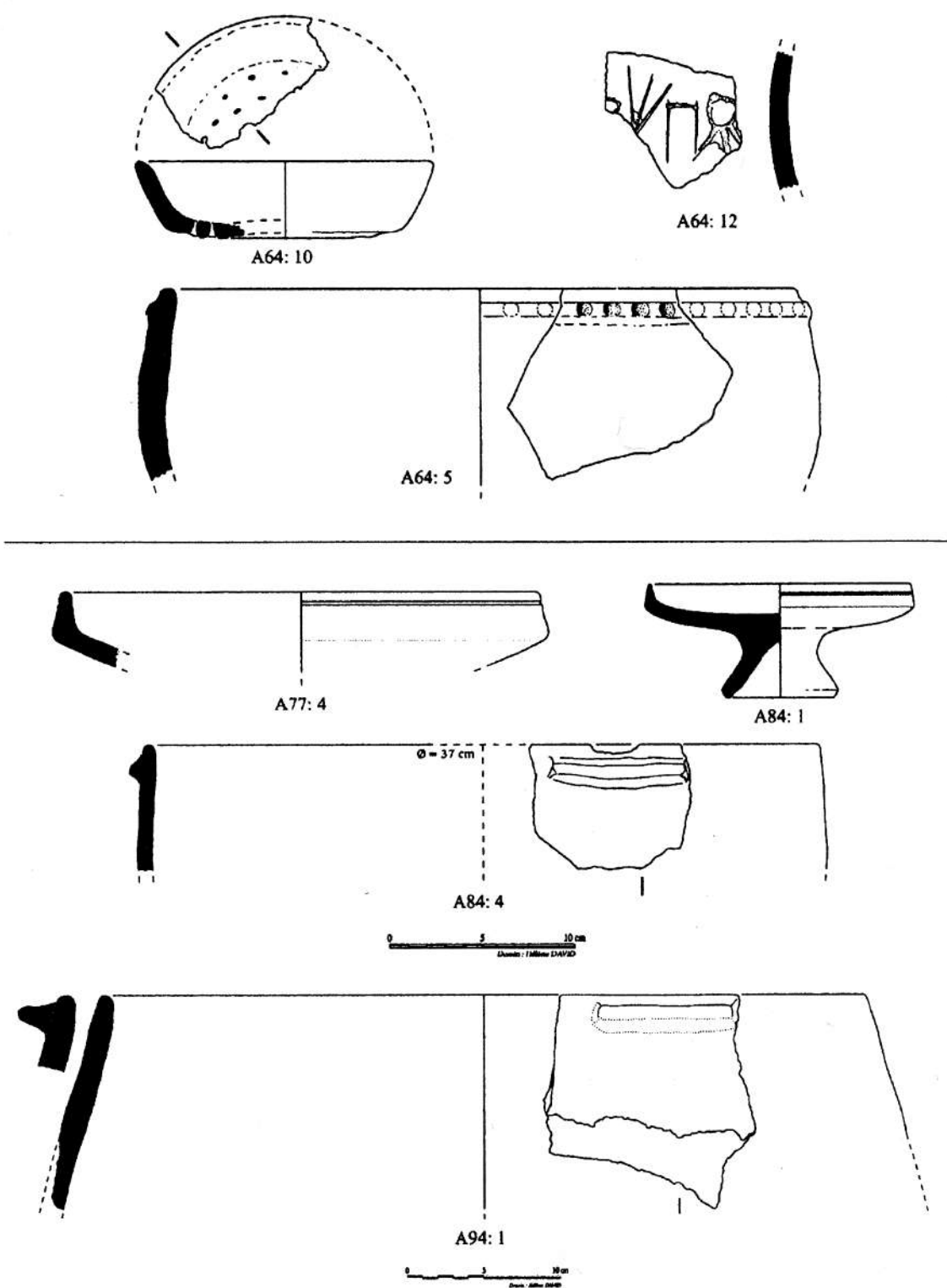


Fig. 8. Tamna'. Pottery from sounding A.00/S2, level 2 (up) and level 3 (down)

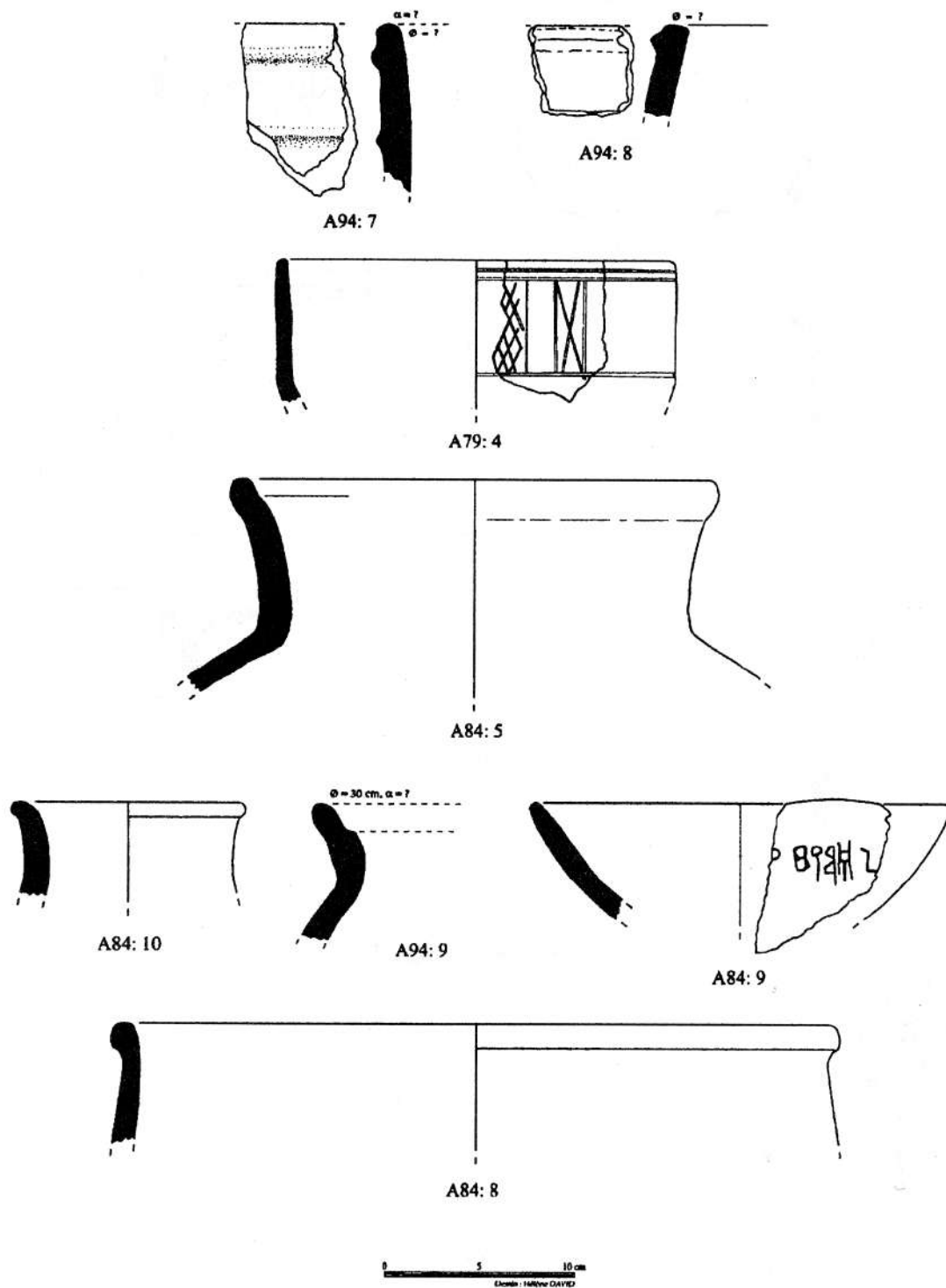


Fig. 9. Tamna'. Pottery from sounding A.00/S2, level 3

300, 301, 302). Those found in B.00/S2—under the floor of L226—were enough scarce instead: 4 three-quarters full zambils (in order of deepness: T.00.B/244, 245, 262, 266).

If we exclude the more superficial *levées* (T.00.B/282, 285; T.00.B/244–245), where, in the context of the walls foundations the repertoires appear minced and mixed, the vases that we found in the level of grayish-light brown earth seem entirely similar to those described for the *level 2* of the sounding of the temple of Athirat. We immediately notice, together with numerous carinated vase-walls (both related to cups and to cylindrical jars), double-rim cups, “torpedo jars”, lids, trumpet ring-bases, etc. On the outside, the clay of the beige-pinkish vases is often covered with the characteristic and delicate red-purplish wash. Black pottery with dense micaceous inclusions is also abundant, reminding us, for instance, the typical kitchen ware of Yalā.

Conclusions

The pottery recovered in the soundings of Tamna' appears distinctive and homogeneous. Distinctive, because it belongs to the repertoire of the so-called “carinated pottery” that it is found in the more ancient South Arabian sites (not only at Yalā and Hajar Bin Ḥumayd, but also at Hajar at-Tamrah [layers IIC–V] and Shabwah [levels IV–III]): this kind of pottery clearly distinguishes itself from the later one which is contextual to the temple of Athirat and the houses of the “Market Place”. Homogeneous, because both the pottery coming from the sounding in the temple of Athirat (T.00.A/S2) and that found in the two soundings in the rooms of the house B/C (T.00.B/S1 and T.00.B/S2) appear to belong to a same typological-cultural horizon. In particular, the repertoires recovered in *level 2* of sounding T.00.A/S2 and those coming from the two sounding T.00.B/S1 and T.00.B/S2 appear to be the most similar, while that found in the *level 3* of sounding T.00.A/S2 appears somewhat different (because more ancient).

As we have seen, the *level 2* of sounding T.00.A/S2, that that is related to the brick wall M70, can be dated, on the base of the pottery types, between 800 and 550 BC (if Yalā's layer A is considered) or between 750 and 550 BC (if we refer to Hajar Bin Ḥumayd's levels O–K). A similar dating should be attributed as well to the pottery found in rooms L206 and L226 of house B/C.

The chronology for *level 3* of sounding T.00.A/S2 should be earlier, having to date back from the beginning period of *level 2* (800 or 750 BC) to a period that we don't know exactly, but that the chronological range offered by the 14C results (Beta Analytic 157167) seems somehow to point out (930–770 BC). In addition, we should point out that the anthropic levels could continue down for at least other 5–6 meters below the lower level we reached in sounding T.00.A/S2, and that the beginning of Tamna' should therefore go up much more in the time (perhaps until in the last centuries of the 2nd millennium BC).

To sum up the data that we until now have for the level (Stratum B) that at Tamna' preceded the well known final one (Stratum A), tell us that it finished around the 550 BC. The analogies between the pottery from the sounding in the temple of Athirat (*level 2*) and that from the soundings under the house in the “Market Place” (two clearly separated zones in the great ruin of Tamna') allow us, at least for the moment, to generalize the hypothesis. This surprises us because in this way an occupational gap would exist, of at least two centuries, before the foundations of the Athirat temple and of the “Market Place” houses (Stratum A) were implanted over this level (Stratum B). After four excavation

campaigns, we are convinced that the construction of the great buildings of Stratum A doesn't have to go up again over the 350 BC²⁸ (such dating, after all, falls within the 14C values [400 and 110 BC] of the sample Beta Analytic 157166 from the filling earth of the Athirat temple). Such a gap seems to concern also other sites until now dug in the region: Hajar Bin Ḥumayd, where we assist to a clear change in the technique and orientation of the wall structures between layer K (c. 550 BC) and the following layer J; Hajar at-Tamrah, in which it seems to finish, with layer I, the occupation; Hajar ar-Rayḥānī, where we see a gap between layer VC and VB; Shabwah in which an ample interval results between layer VI and VIA; Yalā, where at the end of layer A we have the definitive abandon of the city. To such stratigraphical gaps and mutations always corresponds a clear-cut typological change between carinated and non-carinated pottery.

In conclusion, the gap we found in the occupational sequence of Tamna'—between around 550 and the 350 BC—would seem to concern also other South Arabian centres of the Ramlat as-Sab'atayn. If such generalization was confirmed by future excavations in other sites, I think that such new phenomenon (of which we cannot understand now the causes) will force us to reconsider many of our archaeological, philological and historical conclusions on ancient Southern Arabia.

²⁸ Cf. A. DE MAIGRET, *Gli scavi di Tamna', antico crocevia commerciale nel deserto Yemenita*, Proceedings of the Conference "Early Navigation and Trade in the Indian Ocean", Ravenna 4–6 July 2002 (in press).