CHAPTER 6. BENTENG TUA (KALE GOWA)[1]

6.1 The Environment

Benteng Tua ("Old Fortress") lies around eight kilometres from the Jeknekberang mouth (Figure 6-1). It falls mostly within Kecamatan Somba Opu, Kabupaten Gowa, although the northeastern section is included within Kotamadya Ujung Pandang (Figure 6-2a). Suburban housing generally characterises the site as well the land fringing the northern bank of the Jeknekberang as far as the Gowa Kabupaten capital of Sungguminasa. Not far to the north and west of Benteng Tua, SSPHAP's surveyed area ceases along a line marking the approximate onset of comprehensive medium density housing, where site survey did not appear promising (Figure 6-1). Before this recent urban creep, the land immediately northwest of Benteng Tua, and elsewhere in the vicinity, consisted of broad expanses of wet rice fields studded or ringed by settlements on the raised surfaces, as shown by both the 1914 land-use map (Figure 5-3) and the nearly identical 1969 land-use map (Figure 6-2b).

The feature which Sukamto and Supriatna (1982) show as a single outcrop of Baturape-Cindako volcanics extending westwards to Benteng Tua (Figure 5-2) actually breaks into disconnected puddles and strands near the site (Figure 6-2a). The westernmost feature ends with Bonto Biraeng, a two-headed hill enclosed by Benteng Tua. It is also the hill closest to the coast within the whole southwestern coastal plain.

I made three tests of the low-lying soils north of the Baturape-Cindako volcanics (locations shown in Figure 6-3). Tests 1 and 2 identified the soil as clay with some silt, and slightly acidic with a pH of 6, while the northernmost, soil test 3 (Figure 6-3), identified a clayey silt with a virtually neutral pH of $6^3/_4$.

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[1] Kale Gowa ("Body of Gowa") is the name generally used by western scholars for this site (e.g. Reid, 1983a), whereas "Benteng Tua" is the name generally used in Indonesian reports (e.g. Rahim, 1975; Nurhadi et al., 1980). The latter name is preferable in the present context to distinguish the former fort from the kampung of Kale Gowa contained inside.

During the survey Peter Bellwood and myself inspected a report of shells turning up at two wells at Bone-Bone (Photo 6-1), almost at the centre of the walled area, where the Baturape-Cindako outcrop peters out at the coastal alluvial plane (Figure 6-3). By the time of our visit the wells were largely full, so we had to collect shells around the wells' rims as our sample, while our interpretation of the stratigraphy rests on informants' reports. These reports indicated that the top six metres of the soil profiles inside the wells consist of clays and silts, followed by 1½ metres of silts and black sand mixed with some shell fragments, and black estuarine mud and concentrated shell fragments between 7½ metres depth and the lowest, dry-season water table at nine metres depth. Following Heffernan's identikit (see Heffernan, 1980) and descriptions by Allan (1950) and Hinton (1972), I identified the collected shell species as *Strombus canarium*, *S. dentatus* (Photo 6-4), *Asaphis deflorata*, *Polymesoda* sp., *Batissa* sp., *Navicula subnavicularis*, *Anadara thackwayi*, *Anadara* cf. *cinneata*, and several Narissidae species. All of these shellfish pertain specifically to sandy intertidal or mudflat environments (Allan, 1950:16; Hinton, 1972:7; Heffernan, 1980:38-40), except for *Strombus dentatus* which Hinton (1972:117) describes as a rare species found in shallow water up to 30 metres depth. The sample returned an uncorrected radiocarbon date of 5800 ± 90 BP (ANU-5925). The date needs to be corrected to account for the difference in radiocarbon levels between the atmosphere (on which laboratory standards are based) and the estuarine environment where the shellfish lived. In this instance the "model ocean marine mixed layer" correction is appropriate (see Stuiver et al., 1986), leading to a corrected age estimate of 4290 ± 100 BP. This age corresponds almost perfectly with the height of the mid-Holocene transgression reconstructed for Sulawesi's southwest peninsula (Whitten et al., 1987:20).

At the height of the mid-Holocene transgression, then, the low-lying land (eight metres or less above present sea level) which dissects and surrounds Benteng Tua was apparently

estuarine, with a beach at Bone-Bone.[2] Bukit Bikuling, a nearby hillock of Baturape-Cindako volcanics (7.1.2; Figure 6-2a), contains Maros points and other microliths (small flaked stone artefacts) associated with the "Toalean" hunter-gatherer industry which lasted from around 8000 BP to around 3500 BP (Glover, 1976; Chapman, 1986). If Bukit Bikuling is a late Toalean site then it would indicate use of what would have been an island in the estuary. By the same token the edge-ground hatchet and flaked stone artefacts found on the low-lying land within Benteng Tua would date to the last 4000 years and are probably post-Toalean (Figure 6-4a; Appendix G).

The retreat of the seas after the mid-Holocene transgression would have established fresh wetlands, seasonally inundated with each monsoon, which Higham (1989:70) recognises as an ideal environment for wetland cereals such as rice. Moreover, within the historical past the headwaters of the Garassik River apparently cut back until finally capturing the headwaters of the Gumanti River (5.4.3). By at least the 17th century the full list of Benteng Tua's advantages included defensibility of a raised location, access to the coast by foot and watercraft, access to river water on a year-round basis, and an abundant rice crop nurtured by the enhanced seasonal inundation.

6.2 Recording the Site

Benteng Tua was by far SSPHAP's largest and most complex fieldwork site,[3] and so provides a comprehensive example of SSPHAP's site-recording methodology (see 5.5.2). Our initial goal, to follow the surrounding brick wall, was hindered by the razing of much of the original wall. Where the wall outline was not obvious we mapped the land-use zones along the suspected wall line, noted the presence of brick rubble, and recorded locations with exposed *in situ* bricks (Figure 6-3; Photos 6-2 to 6-6). At one point we lost the thread of

[2] Note that *bone* is "Old Bugis" for sand (Macknight, 1983:105).
[3] Nine days of fieldwork between 12 October 1986 and 1 February 1987 were spent recording the site.

the wall and surveyed zones 33 to 36 outside the old fortress. Knowing of royal graveyards and other *keramat* (mystically powerful) places within the fortress (Nurhadi et al., 1980), we ran transects to them from convenient places along the wall line. By zone 122 these social foci and the wall outlines had been mapped, after which we surveyed a further 60 zones to plug remaining gaps in the site's documentation (Figure 6-3). A further two "zones" were posited to accommodate artefact collections of approximate provenance,[4] giving a grand total of 184 zones. In all, Benteng Tua's recorded artefacts included 10,773 earthenware sherds and 7502 tradeware pieces, eight flaked stone artefacts, one ground-edge hatchet, one iron fragment and one coin (6.2; Appendix D).

From our survey the modern (1986) land use inside and abutting Benteng Tua can be reconstructed. The highly variegated patterns extend from wet-rice fields and brush, to housing complexes containing the densest housing at any site which SSPHAP's "Gowa survey" mapped (Figure 6-6b). Also we mapped around 3.8 km of former brick wall enclosing an area of 840,000m². In SSPHAP's survey methodology, not only were the survey zones mapped but also the site recorders estimated the percentage of each zone which appeared as an exposed surface (5.5.2). Therefore the surveyed area can be expressed either as the mapped surveyed surface or as the exposed surface. The 200,734m² of mapped zones included 141,880m² inside the walls, 37,515m² along the walls, and 21,339m² outside the walls, while the 142,134m² of exposed surface included 101,627m² inside the walls, 23,037m² along the walls, and 17,470m² outside the walls. The surveyed areas of the fortress can be calculated either as 141,800 plus 37,515m², or as 101,627 plus 23,037m², divided by the 840,000m² of fortress, i.e. 21.3% and 14.8% of the total respectively. These estimates bracket the 15%-20% range which Ammerman et al. (1978) found to be a fully adequate sample

[4] One was a collection given to us by the Kaballokang inhabitants, labelled "zone 133" (Photo 6-22 to 6-24), and the other was a collection made by Suaka within Tamalate in 1979 (labelled "zone 0"). These "zones" are included in the tradeware seriation (B.4).

after applying a variety of simulated sampling strategies to a completely excavated Masai settlement.

6.3 Sherdage Densities Within Benteng Tua

To examine chronological changes in the settlement patterns within Benteng Tua, the tradeware pieces are divided into the four clusters - "Early", "Ming", "Qing", and "Recent" - generated by the seriations (B.4). The "early" pieces are too few to warrant making estimates of densities and so I merely present their frequencies in the zones where they were found (Figure 6-4a). The densities of the other tradeware pieces, expressed as pieces/100 m^2, are calculated from dividing the number of pieces (Ming or Qing or recent) within a zone by the exposed land surface within the zone.

This figure is here used to represent density of occupation, although I acknowledge the difficulties. Firstly, factors other than the percentage of the surface which is exposed would affect the relationship between surface and subsurface sherdage contents (B.4.1), but I have no clear control over them and so I have to ignore the complication. Secondly, individual vessels rather than sherds are the preferable unit for the archaeologist using ceramic remains (Skibo et al., 1988), and while my analysis always treats cases of conjoinable sherds as a single piece, many of my zones may well be represented by two or more sherds treated as separate pieces because the sherds were not matched up. Thirdly, sherds can move owing to gravity and slopewash processes, although at least some of these effects can be accounted for by taking the appropriate observations in the field. Fourthly, Bintliff and Snodgrass (1988b) note that off-site sherdage not representative of occupation can occur as "haloes" surrounding the old settlement or as widespread "carpets" over the fields. It largely reflects the practice in which farmers systematically collected animal and human excrement, together with household rubbish, to be spread across the cultivated landscape as fertiliser. However, this practice may not have been followed at Benteng Tua, as indicated by the agricultural land-use zones within or abutting the former fortress walls (zones 62, 83, 85, 111,

119, 158, 171, 176) which contained no surface artefactual content or at most a very light presence of earthenwares. The insignificance of off-site sherdage densities in South Sulawesi, as also clear at Benteng Sanrabone (Bulbeck, in prep. b) and other SSPHAP sites, would agree with South Sulawesi's status as an area of generally high rainfall, given the strong negative relationship between average rainfall and off-site sherdage densities (Bintliff and Snodgrass, 1988b).

If we are to compare trends over time, the same density gradients should be used for the Ming, Qing and recent categories. Hence to see the overall distribution, I plotted all the Ming, Qing or recent densities from all 182 mapped zones onto a histogram with 0.1 gradients. The 0.1 gradients were joined into 0.2 gradients, then 0.3 and 0.4 gradients, to even out stochastic irregularities in the distribution. The value of "0" (no pieces) stood out, after which steps in the distribution of the densities appeared at 1.2, 3, 9 and 25. Thus I accepted the density classes 0, 0.01-1.2, 1.21-3, 3.01-9, 9.01-25, and 25+, and mapped the density classes on the site zones for the Ming, Qing and recent pieces. To extrapolate from these depictions to the whole site, the simplest procedure which gives a unique solution is to draw Thiessian polygons around the surveyed zones, i.e. to draw lines through all the points which are equidistant between adjacent surveyed zones, and assume that the best estimate of the tradeware density within the Thiessian polygon is the tradeware density of the surveyed zone contained therein. Inadequately surveyed areas where the edges of the Thiessian polygons extend well beyond any surveyed zone are shown with question-marks (Figures 6-4b to 6-5b).

The potential usefulness of tradeware densities in registering occupation can be checked by comparing the "recent" densities (Figure 6-5b) against the 20th century maps (Figure 6-6). The overall shape of settlement suggested by the tradewares certainly appears correct. It extends to details such as continuous settlement along the former western wall, a large settled area in the northeast, and a largely unsettled area in the north-central part of the site.

There are of course some discrepancies, which can be attributed to several factors. The recent sherdage not only averages out 20th century occupation but should also reflect 19th century occupation (B.4). For instance, while the reconstruction of the now-deserted "Palantikang" kampung, which is picked up even better by the Qing sherdage, can be considered a success, the technique only partly registered the 20th century desertion of the area between Palantikang and Gowa-Gowa (cf. Figures 6-5 and 6-6a). Also, the recent sherdage registers the dense housing complexes (developed since the late 1970s) with varying degrees of strength. A second factor is that a few areas were poorly surveyed. One such area is the land between the Gowa-Gowa and Bone-Bone kampungs, shown as vacant on the 1914-1916 map, and probably also unoccupied in 1986 as we found no roads leading up to it. But my extrapolated Thiessian polygons lead me to reconstruct quite dense settlement because the closest surveyed areas were quite densely settled.

Some of the settlement names recorded by the Dutch (Figure 6-6a) differ from SSPHAP's (Figure 6-6b). "Latebung" would appear be a corruption of "Lakiung". "Palantikang" (installation place) is an unusual name for a small kampung, and may have derived from its propinquity to the *Batu Pelantikan*, or installation stone of the Gowa kings, now stationed just outside the Sultan Hasanuddin Complex. Gowa-Gowa looks like the old name for Kale Gowa. I am yet to find evidence that the name "Kale Gowa" has any antiquity, and I suspect it might be a hybridisation between "Kalling" (cf. Figure 2-2) and "Gowa". The name Bonto Biraeng may still be applied to the area I recorded as kampung Mangasa. The toponym "Katangka" appears to have moved across the road into what is now Kotamadya Ujung Pandang, possibly related to the construction of high-status housing there (fieldnotes) and the military housing complex immediately behind. This change appears to relate to three others. (i) The old Katangka kampung area is now part of Bone-Bone. (ii) The area of Biseya (Bisei) has been whittled back. (iii) The name "Katangka Toa", claimed by the inhabitants living at the fort's northern bastion, would reflect their willingness to

acknowledge the Katangka label, but specifically in the context of their status as the area's original inhabitants before the housing developments.

Considering the three phases of reconstructed settlement patterns - 15th-17th centuries, 17th-19th centuries and 19th-20th centuries - we see that the middle phase looks generally intermediate between the other two, and conforms to the general pattern of increasing tradeware densities with time. The exception is Bonto Biraeng Timur where the tradeware densities appear to have decreased slightly over time (cf. Figures 6-4b and 6-5). The Ming phase, i.e. the general period when the site operated as a fort, can be characterised by a concentration of tradewares on Bonto Biraeng Timur, and two smaller concentrations of tradewares in the central east and central west parts of the fort (Figure 6-4b).

6.4 The Benteng Tua Fortifications

SG (p.26) states that Tunipalangga (r. 1547-1565) built the brick walls around Gowa (Benteng Tua) as well as Somba Opu, and that the walls built by Tumapakrisik Kallona (r. 1511-1547) had only been earthen. Tumapakrisik Kallona and his predecessors apparently ruled from Benteng Tua, whereas Tunipalangga apparently ruled from Somba Opu (Mukhlis, 1975:56-57). Benteng Tua apparently became Gowa's primary palace centre again in 1618 when Tamalate (Benteng Tua) was built (LB:89). Commencement of the new walls had probably begun by 1615 when the Englishman Cockayne recorded that 'all the whole land is making of bricks for two castles this summer to be finished' (Reid, 1981:11).[5] Although the palace at Somba Opu was rebuilt in 1631 (LB:92), the Tamalate palace remained in use until 1639 (LB:100) before finally being demolished in 1647 (LB:109). Under pressure from the Dutch, Gowa demolished the walls of Gowa (Benteng Tua) in 1670 (LB:138). According to Andaya (1981:174), by 1676 Gowa's

[5] The small discrepancy of three years could reflect a lengthy period before Benteng Tua was actually finished, or a slightly rubber chronology in the Royal Diary.

walls had been rebuilt by simply replacing the bricks[6] loosely on each other, but they were then destroyed as prescribed by an interim treaty between Gowa and Bone's Sultan Sahaduddin. However, the walls must have been still up or back up by 1677 when Sultan Sahaduddin captured Benteng Tua's walls (Andaya, 1981:184; Bulbeck, 1990). In 1694 Gowa's sultan, Abdul Jalil, relocated his palace to Datak within Gowa, i.e. Benteng Tua (LB:180). So Benteng Tua served as Gowa's fortified palace on four occasions: during (and preceding) Tumapakrisik Kallona's reign, i.e. up to 1547; 1618-1631, with secondary use until 1639; 1670-1677; and for an unknown period from 1694 onwards.

Benteng Tua's several phases as Gowa's palace suggest that the fortification remains might well evince restorations and extensions. Indeed, SSPHAP's team observed two types of wall construction based on our detailed observations at 36 stations (Figures 6-3 and 6-7). One type had a central wall made of large bricks flanked by side walls of smaller bricks, with earth packed between the brick walls. It stretched from the Kaballokang-Lakiung gate to the gate between Lakiung and Mangasa, and then from the gate between Mangasa and Kale Gowa to a point halfway along the southern wall. The most illustrative section is reproduced in Figure 6-8 (station XXXII) and the best standing profile is shown in Photo 6-5 (station XVIII). Elsewhere we recorded double walls of smaller bricks separated by earth, as illustrated at stations XXXI (Photo 6-3) and XVI (Photo 6-6).[7]

All the fort's brick walls were apparently built using clay as mortar in the "one-on-two" method which involves laying each brick transversely across two bricks in the course below. Whether the brick walls had foundations is unclear. Although the central wall extended two metres below the former ground surface at station XVIII (Photo 6-4) and 70 cm below the present ground surface to basal silt at station V, these ground surfaces might possibly be raised above their levels when the bricks had been laid. The extant wall can

[6] *Batu merah*, wrongly understood as "red stones" by Andaya.
[7] All the originals of Benteng Tua's wall sections were drawn by Iwan Sumantri. See Appendix E for definitions of "large" and "smaller" bricks.

stand as high as three or four metres above the prevailing ground surface in Mangasa, and a similar height above the external ground surface along much of the northern wall.

The brick measurements taken at the various stations can be pooled into larger samples representing the various segments of fortress wall (Figure 6-7). The figures not only illustrate the larger size of the central-wall bricks compared to other bricks, but also suggest size variation within either the large or the smaller bricks at different places along the fortress. Table 6-1 gives the full data summarised in Figure 6-7, while Table 6-2 investigates the statistical significance of the brick size differences based on one-tailed Student's t-tests.

Consider first the t-test values involving bricks used in the different types of walls (Table 6-2). The systematically larger size of the central-wall bricks stands beyond doubt; in every comparison the possibility that their larger size could be due to chance is much less than one in two thousand.

In contrast the side-wall bricks and double-wall bricks are very similar when considered as total samples. Whatever size differences are involved could be due to chance at either the five or ten percent confidence intervals. But the similarity does not cover comparisons made between the various wall segments. Whether we compare the side-wall bricks in different segments, the double-wall bricks in different segments, or the side-wall bricks in one segment with the double-wall bricks in another segment, statistically significant metrical differences emerge, occasionally at the confidence interval of one in two thousand (Table 6-2).

Further, the metrical variation appears to be clearly directional. Start at the Mangasa double wall and follow the double-wall and side-wall bricks around the fortress in a clockwise direction. Average brick length consistently decreases over the four wall segments involved, average breadth consistently decreases over the five wall segments involved, while average thickness remains stable or decreases over four of the five segments (Figure 6-7). Considering only those 24 cases (length, breadth or thickness) for which a t-test has been calculated, and using the five percent

TABLE 6-1. BENTENG TUA BRICK SIZES BY WALL SEGMENT AND WALL TYPE

	LENGTHS				BREADTHS				THICKNESSES			
Central-Wall Bricks												
WALL SEGMENT	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range
Kaballokang-Lakiung Gate	22	40.5	±3.2	(35-49)	24	21.1	±1.6	(18-24)	29	6.9	±0.7	(6-8.5)
Lakiung	37	40.6	±2.1	(35-44)	50	20.2	±1.6	(16.5-23	54	7.0	±0.9	(4.5-9)
Kale Gowa	27	42.7	±2.1	(37-45)	35	21.1	±1.0	(19.5-23)	39	7.0	±0.9	(5-9)
Total	86	41.2	±2.6	(35-49)	109	20.7	±1.5	(16.5-24)	122	7.0	±0.9	(4.5-9)
Side-Wall Bricks												
WALL SEGMENT	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range
Kaballokang-Lakiung Gate	19	23.8	±3.5	(19-29.5)	36	13.0	±2.1	(7.5-16.5)	38	3.6	±0.5	(3-4.5)
Lakiung		---			13	14.5	±1.9	(11-17)	37	3.9	±0.7	(3-5.5)
Kale Gowa	2	20.5		(19,22)	3	11.7		(10-14)	3	4.0		(3-6)
Total	21	23.5	±3.4	(19-29.5)	52	13.3	±2.1	(7.5-17)	78	3.8	±0.6	(3-5.5)
Double-Wall Bricks												
WALL SEGMENT	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range
Mangasa	18	25.0	±3.0	(19-29)	64	14.9	±1.9	(10-19.5)	72	3.9	±0.6	(2.5-5.5)
Kale Gowa	14	21.1	±2.2	(17-26)	38	12.5	±1.2	(10-16)	47	3.4	±0.4	(2.5-4.5)
Katangka Toa	30	22.45	±1.1	(20-24)	30	13.0	±0.8	(11-14)	30	3.6	±0.3	(3-4.5)
Total	62	22.9	±2.5	(17-29)	132	13.8	±1.9	(10-19.5)	149	3.7	±0.6	(2.5-5.5)
Bungung Bissua (Bissu's Well)												
	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range
Large Bricks	1	38			2	20.0		(18,22)	1	5		
Smaller Bricks	6	23.3	±3.1	(19-27)	15	12.9	±1.6	(9-16)	19	3.2	±0.5	(2.5-4)
Hasanuddin Complex (Graveyard Wall?)												
	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range	n	$\bar{x}$	SD	Range
Smaller Bricks	1	18			14	12.0	±1.0	(11-14)	15	3.7	±0.5	(3-4.5)

TABLE 6-2. ONE-TAILED STUDENT'S T-TESTS COMPARING THE BRICK SAMPLES FROM BENTENG TUA (NEGATIVE VALUES SHOW THAT THE MEASUREMENT IS SMALLER FOR THE COLUMN SAMPLE)

TOTALS

	LENGTH			BREADTH			THICKNESS		
	Central	Side	Double	Central	Side	Double	Central	Side	Double
Central	--	25.60^{+++}	41.29^{+++}	--	24.95^{+++}	30.82^{+++}	--	27.59^{+++}	60.06^{+++}
Side	-25.60^{+++}	--	0.83$^{\#}$	-24.95^{+++}	--	-1.53$^{\#\#}$	-27.59^{+++}	--	1.19$^{\#}$
Double	-41.29^{+++}	-0.83$^{\#}$	--	-30.82^{+++}	1.53$^{\#\#}$	--	-60.06^{+++}	-1.19$^{\#}$	--

SEGMENTS — BRICK LENGTHS

	CENTRAL			SIDE		DOUBLE		
CENTRAL	K-L Gate	Lakiung	Kale Gowa	K-L Gate	Lakiung	Mangasa	Kale Gowa	Katangka
K-L Gate	--	-0.14$^{\#}$	-2.79^{+}	15.50^{+++}	--	15.19^{+++}	19.37^{+++}	27.88^{+++}
Lakiung	0.14$^{\#}$	--	-3.77^{++}	21.68^{+++}	--	21.54^{+++}	25.16^{+++}	41.16^{+++}
Kale Gowa	2.79^{+}	3.77^{++}	--	22.15^{+++}	--	22.46^{+++}	29.81^{+++}	44.53^{+++}
SIDE								
K-L Gate	-15.50^{+++}	-21.68^{+++}	-22.15^{+++}	--	--	-1.09$^{\#}$	2.48$^{\#\#\#}$	1.86$^{\#\#\#}$
DOUBLE								
Mangasa	-15.19^{+++}	-21.54^{+++}	-22.46^{+++}	1.09$^{\#}$	--	--	4.00^{++}	4.03^{++}
Kale Gowa	-19.37^{+++}	-25.16^{+++}	-29.81^{+++}	-2.48$^{\#\#\#}$	--	-4.00^{++}	--	-2.83^{+}
Katangka	-27.88^{+++}	-41.16^{+++}	-44.53^{+++}	-1.86$^{\#\#\#}$	--	-4.03^{++}	2.83^{+}	--

SEGMENTS — BRICK BREADTHS

	CENTRAL			SIDE		DOUBLE		
CENTRAL	K-L Gate	Lakiung	Kale Gowa	K-L Gate	Lakiung	Mangasa	Kale Gowa	Katangka
K-L Gate	--	2.17$^{\#\#\#}$	0.00$^{\#}$	31.91^{+++}	10.55^{+++}	12.57^{+++}	24.08^{+++}	24.24^{+++}
Lakiung	-2.17$^{\#\#\#}$	--	-2.76^{+}	17.52^{+++}	9.97^{+++}	14.04^{+++}	25.93^{+++}	21.80^{+++}
Kale Gowa	0.00$^{\#}$	2.76^{+}	--	19.31^{+++}	14.62^{+++}	15.60^{+++}	31.92^{+++}	33.56^{+++}
SIDE								
K-L Gate	-31.91^{+++}	-17.52^{+++}	-19.31^{+++}	--	-3.13^{+}	-4.77^{++}	1.76$^{\#\#\#}$	0.00$^{\#}$
Lakiung	-10.55^{+++}	-9.97^{+++}	-14.62^{+++}	3.13^{+}	--	-0.61$^{\#}$	4.32^{+}	3.56^{+}
DOUBLE								
Mangasa	-12.57^{+++}	-14.04^{+++}	-15.06^{+++}	4.77^{++}	0.61$^{\#}$	--	6.20^{++}	4.59^{++}
Kale Gowa	-24.08^{+++}	-25.93^{+++}	-31.92^{+++}	-0.61$^{\#}$	--	-6.20^{++}	--	-1.97$^{\#\#\#}$
Katangka	-24.24^{+++}	-21.80^{+++}	-33.56^{+++}	0.00$^{\#}$	3.56^{+}	-4.59^{++}	1.97$^{\#\#\#}$	--

TABLE 6-2. ONE-TAILED STUDENT'S T-TESTS COMPARING THE BRICK SAMPLES FROM BENTENG TUA (CONT.)

SEGMENTS				BRICK THICKNESSES				
		CENTRAL		SIDE		DOUBLE		
CENTRAL	K-L Gate	Lakiung	Kale Gowa	K-L Gate	Lakiung	Mangasa	Kale Gowa	Katangka
K-L Gate	--	-2.24###	-0.50#	22.68***	17.28***	21.65***	27.97***	23.47***
Lakiung	2.24###	--	0.00#	21.12***	17.71***	23.27***	25.42***	19.91***
Kale Gowa	0.50#	0.00#	--	20.43***	16.68***	21.66***	24.80***	19.72***
SIDE								
K-L Gate	-22.68***	-21.12***	-20.43***	--	-2.14###	-2.62*	2.04###	0.00#
Lakiung	-17.28***	-17.71***	-16.68***	2.14###	--	0.00#	4.14**	2.18###
DOUBLE								
Mangasa	-21.65***	-23.27***	-21.66***	2.62*	0.00#	--	5.03*	2.60*
Kale Gowa	-27.97***	-25.42***	-24.80***	-2.04###	-4.14**	-5.03*	--	-2.38###
Katangka	-23.47***	-19.91***	-19.72***	0.00#	-2.18###	-2.60*	2.38###	--

INSIDE STRUCTURES cf. FORTRESS SMALL BRICKS - LENGTHS

	SIDE - Kaballokang	Lakiung Gate	DOUBLE - Mangasa	Kale Gowa	Katangka
Bissu's Well (small bricks)	-0.31#		-1.18#	1.77###	1.21#

INSIDE STRUCTURES cf. FORTRESS SMALL BRICKS - BREADTHS

	Hasanuddin Complex	SIDE - K-L Gate	Lakiung	DOUBLE - Mangasa	Kale Gowa	Katangka
Bissu's Well	1.89###	-0.22#	-2.43###	-3.32*	1.06#	-0.24#
Hasanuddin Complex	--	-1.81###	-4.25**	-4.84**	-1.41##	-3.59**

INSIDE STRUCTURES cf. FORTRESS SMALL BRICKS - THICKNESSES

	Hasanuddin Complex	SIDE - K-L Gate	Lakiung	DOUBLE - Mangasa	Kale Gowa	Katangka
Bissu's Well	-2.59###	-2.44###	-3.86**	-4.26**	-1.20#	-3.09*
Hasanuddin Complex	--	0.58#	-1.32##	-1.32#	2.10###	0.69#

p >0.1; ## 0.1> p >0.05; ### 0.05> p >0.005; * 0.005> p >0.0005; ** p < 0.0005; *** p << 0.0005.

N.B. Student's t-tests for small samples (Startup and Whittaker, 1982:106-107) used throughout. However, when the sample size amounts to only a few measurements or less, I have not calculated the standard deviations (Table 6-1) nor the Student's t-test values. T-tests based on means and S.D.'s to three decimal places, not the single decimal place shown in Table 6-1.

probability level, we find that the decrease in brick size is statistically significant in 19 cases (Table 6-2). Clearly, size of the smaller bricks systematically decreases from Mangasa in a clockwise direction right round to Kale Gowa.

Although the Kale Gowa smaller bricks appear to be the smallest fortress bricks, the Kale Gowa central-wall bricks appear to be the largest. Starting at the Kale Gowa central wall and moving clockwise to the central wall at the Kaballokang-Lakiung gate, we have nine comparisons. Six suggest decreasing brick size, two are neutral, and one (brick breadths at Lakiung cf. the Kaballokang-Lakiung gate) is discordant (Figure 6-7). Five of the comparisons involve differences which are statistically significant at the five percent confidence interval, of which four conform to the trend. So while the central-wall bricks show less metrical variation than the smaller bricks do, nonetheless their size appears to decrease from Kale Gowa in a clockwise direction to the Kaballokang-Lakiung gate.

Where we have a triple brick-wall, made up of a central wall flanked by two side walls, the central wall obviously must have preceded the side walls. Theoretically the elapsed time could have involved days or decades. However, evidence from the other fortifications suggests that Benteng Tua's central brick walls considerably predated the walls made with smaller bricks, within the context of generally decreasing brick size over time (E.4). Therefore, decrease in brick size during the execution of the same building programme could well explain why Benteng Tua's central wall bricks, and especially its walls of smaller bricks, demonstrate decreasing size in a clockwise direction.

Hence I hypothesise that Benteng Tua's brick walls were constructed as follows. The first stage was construction of the central wall, beginning at Kale Gowa, bypassing Mangasa, and then continuing along the Lakiung section as far as the Kaballokang-Lakiung gate. The second stage involved construction of two parallel walls of smaller bricks, beginning with Mangasa, then continuing along Lakiung and around the fortress in a clockwise direction until the Kale Gowa section was finished. Where a central wall had

previously been constructed, a triple brick-wall now resulted (cf. Figure 6-10c).

This scenario appears less strange in the light of two considerations. The two-headed hill of Bonto Biraeng occupies the fortress's southern border and, secondly, the brick wall was replacing an earlier earthen wall. Consequently in the first stage, the central brick wall added extra defense along the western sections of the earthen wall which did not enjoy the natural protection of Bonto Biraeng's slopes (cf. Figure 6-10). In the second construction stage, the encirclement of Bonto Biraeng by brick wall would have been completed.

A subsidiary issue involves the brickworks at the Hasanuddin Complex (Figure 6-7)[8] and the Bissu's Well (Figure 6-9). The latter brickworks clearly date to when Benteng Tua functioned as a fortress, not only because there are a few large bricks,[9] but also because the smaller bricks strongly show the thin shape which is particularly characteristic of Gowa fortification bricks (E.2.2). Their lengths and breadths suggest contemporaneity with the side walls at the Kaballokang-Lakiung gate, whereas the thicknesses indicate that they were the last made bricks (Table 6-1). The brick fragments at Hasanuddin Complex are slightly thick in relation to their other measurements, although well within the range for the Gowa fortification smaller bricks (Table E-7). They are probably best compared with the Katangka Toa sample, despite the anomalously short length of the only specimen whose length could be measured (Figure 6-7; Table 6-2). Probably the safest scenario, then, would date both the Bissu's Well and the structure at Hasanuddin's Complex to the middle period of construction of Benteng Tua's walls of smaller bricks.[10]

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[8] Now represented only by scattered fragments from the original structure(s).

[9] These few large bricks were probably spare bricks left after the halted construction of the central wall.

[10] The patches of brick rubble running downhill from both of these internal structures (Figure 6-7) might possibly suggest that Benteng Tua's walls had struck uphill in this locations, either as internal wall-lines or as indentations within the external wall. However, the fragments are so pulverised and the patches so light that the brick fragments could have washed downslope from the internal structures.

Figure 6-10 compares the three main possible scenarios for the construction of Benteng Tua's walls, and summarises the evidence on Gowa's coeval palaces (see 6.5). In scenario A, Tumapakrisik Kallona's earthen walls served only to contain a comparatively small area of low-lying land north of Bonto Biraeng, and to block off access from the south to the low connecting ridge between Bonto Biraeng's two hills. Tunipalangga merely replaced the western sections of Tumapakrisik Kallona's earthen walls with a central brick wall. The expansion of Benteng Tua to the dimensions recorded archaeologically only occurred when Sultan Alauddin re-established the Gowa palace at Bonto Biraeng by 1618.

Scenario B differs by hypothesising that Tumapakrisik Kallona's earthen walls ran the full gamut of Benteng Tua as we recorded it. It agrees with scenario A by suggesting that Tunipalangga replaced only a part of his predecessor's earthen walls, and that the the full encirclement of Bonto Biraeng by brick wall occurred only during Alauddin's reign.

Scenario C shows the situation if Tunipalangga had built all of Benteng Tua's 3.8 km of brick walls. This scenario appears weak as it is contradicted by the evidence that the central wall and the walls of smaller bricks belong to distinct stages within Gowa's overall history of fortifications. Indeed Tunipalangga apparently reigned from Somba Opu, which would have given him good reason to abandon the Benteng Tua brickworks.[11]

One possible way to distinguish between these scenarios comes from the standardised chronological histograms based on fine tradeware classes. These show the percentages of the total Gowa survey tradewares, per 50- or 100-year period, represented by the tradewares within a particular group of zones (5.6.2; B.4).[12]

Scenario A refers to the middle group of standardised chronological histograms (Figure 6-11) whereby "suspected

[11] Note that scenario C spells out the construction sequence for the walls of smaller bricks which is applicable to scenarios A and B, except that it would have occurred during Alauddin's reign.

[12] We can use the fine rather than the broad tradeware classes because large samples of tradewares are involved (Appendix B).

early defended area" refers to the zones either within Tumapakrisik Kallona's walls (as hypothesised in the scenario) or located on Bonto Biraeng; "along early wall (?)" refers to the zones we recorded along these hypothesised walls; and "suspected early undefended area" refers to the zones northeast of Bonto Biraeng Barat. The "suspected early defended area" shows a flat profile from 1400 AD to 1800 AD, apart from a small bump between 1650 and 1750 AD. The "early wall (?)" shows virtually no sherdage dated to between 1500 and 1650 AD. The "suspected early undefended area" shows a clear drop in 16th century sherdage and a return to strong sherdage frequencies from the early 17th century onwards. These data support the hypothesis that the walls shown in the top two drawings of Scenario A in Figure 6-10 stood throughout the 16th century, and that the occupation at the site was focussed either within these walls or on Bonto Biraeng. With the expansion of the brick walls during Alauddin's later reign, the area northeast of Bonto Biraeng then became attractive for occupation.

Scenarios B and C refer to the left-hand group of histograms in Figure 6-11, where "fortress wall" refers to the wall as we mapped it. The zones along the wall and outside the wall show drops in 16th century compared to 15th century sherdage, to a degree greater than that shown by the zones within the fortress. However, the support is weaker than it is for scenario A.

Scenario A may also be the most parsimonious reconstruction in that it involves the smallest amount of fortifications. It also agrees with the hints that Gowa was a weakened polity, under attack from its neighbours including Tallok, during most of Tumapakrisik Kallona's reign (4.2.1 and 4.3.2). When Tumapakrisik Kallona built his walls around Gowa, this may have been less a sign of strength than the obligatory establishment of a spatially circumscribed citadel protecting Gowa from local enemies. All in all, I prefer scenario A as the summary of Gowa's fortifications at Benteng Tua, although scenario B is also attractive (Figure 6-10).[13]

[13] Mention should be made of a small iron cannonball collected by Suaka from Tamalate, or more precisely the area around 100 metres south of the Hasanuddin Complex, and held

6.5 Historical Settlements Within Benteng Tua

We have already noted the movement of kampung names around Benteng Tua during the present century, including renamings of already settled areas (Figure 6-6). This suggests that care should be taken in identifying the precise locations of Ming-period communities within the old fort. Nonetheless the archaeological data suggest foci of earlier occupation, based on the apparent concentrations of precolonial tradewares (Figure 6-4), centres of community ritual life such as pre-Islamic and early Islamic burial places, and other *keramat* remains (Figure 6-12). These foci require labels for the purposes of discussion, even if the antiquity of the label cannot be taken for granted. In describing these community foci we will also refer to the evidence from the tradeware profiles, i.e. the standardised chronological histograms, using those based on fine tradeware classes when large samples are available, and those based on the broad classes otherwise (Figures 6-13 and 6-14).[14]

6.5.1 Mangasa (Bonto Biraeng Barat)

I use Mangasa to label the hillock of Bonto Biraeng Barat after its main modern kampung, and I include the part of kampung Kale Gowa on the hillock's east slope (Figure 6-12).[15] Using the name does not preclude the possibility that historical "Mangasa", associated with a *Gelarang* post

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at Suaka's museum. The cannonball could have been fired into Benteng Tua during battle, e.g. when Sultan Sahaduddin captured the fortress in 1777, or it could have been stored as part of Gowa's arsenal. Regrettably I did not document this surface find apart from noting its existence.

[14] Note that the "Ming" tradeware densities in Figure 6-12 have been grouped differently than in Figure 6-4b, so as to reflect the groups of densities which appear sensitive specifically for the "Ming" pieces. Also, the tradeware profiles in Figures 6-13 and 6-14 are calculated from the pieces recorded in the zones shown in the respective site areas in Figure 6-12, except for the Benteng Tua totals which include post-Ming pieces from non-site zones, and so slightly exceed the added-up totals from the site areas.

[15] Rahim (1975:2) identifies this area as Bonto-Biraeng, but this label is open to confusion because Bonto Biraeng extends right along the fort's south border (Figure 6-4a).

which was important by the mid-16th century and remained so until the mid-17th century (ST:10 [SG:39]; LB:118,137,158; Andaya, 1981:61,137,151), might have been located elsewhere, either on occasions or throughout the period. The 1693 map shows Mangasa a fair distance from Gowa (Figure 5-5), possibly corresponding to where Mangasa now occurs as a local administrative name within Kecamatan Tamalate (Kotamadya), or even to a location directly south of the present-day Jeknekberang (7.3.7).

Due north of the minor bastion at the fort's southwest corner (Photo 6-2) lies the Lakiung-Mangasa gate. At zone 13 just within the line of the former wall is a venerated grave ascribed to "Kale (Kare?) Kundrulu". Marked by three stones at the north and two at the south (Photo 6-7), it represents an old style of Islamic grave. Further, the grave's auspicious position at the former gate could reflect Kale Kundrulu's nobility. "Kundrulu" evokes a 1677 reference which suggests that the "Karunrung gate" then stood at the end of Benteng Tua opposite from Bisei (Bulbeck, 1990). Nonetheless this Karunrung gate is probably better identified with the Lakiung-Kaballokang gate (6.5.6).

Even though zones 16 and 19 coincide with the course of the former wall, we were told during the survey that they had yielded antiques. The tradeware pieces which we recorded in zone 19 contain several 13th-14th century pieces, suggesting zone 19 represents a burial area before Benteng Tua's walls were built. Early tradeware pieces occurred right around Mangasa (Figure 6-4a), and show a strongly accentuated presence when compared against "Ming" pieces (Figure 6-13). So the three "Kings of Katangka", who may have directly Gowa's origins during the 13th century (2.5.2), were possibly based at "Mangasa" (or Katangka as it would have been called if my speculation is correct).

Mangasa is crowned by the "Arung Palakka Complex" where Sultan Sahaduddin (Arung Palakka, who died in 1696), and his main wife Dg Talele (died 1725), lie within a modified *kobang* tomb (Photo 6-10). Behind it are three tombs with the multi-tiered slab roofs characteristic of Gowa's royal cemetery (6.5.2). One has the odd name Jerak Buajaya

("Crocodile's Grave"). The other two are associated with "Petta Belo"[16] and with Sultan Ismail, Sahaduddin's grandson (by adoption) who ruled Gowa between 1709 and 1711 (Nurhadi et al., 1980:7; Patunru, 1983; Chapter 4).

The oldest dated graves in the cemetery are the domed *kobang* tombs of two 17th century Gowa regents at the rear. One is on all accounts associated with Tallok's Sultan Mahmud (Kg Pattingalloang) who died in 1654. Its counterpart is best ascribed to Mahmud's father Sultan Abdullah, although Abdullah's father Tumenananga ri Makkoayang (died 1577), and Mahmud's son Kg Karunrung (died 1685), are also possible.[17]

6.5.2 Tamalate

The name Tamalate ("never withers") is generally restricted to the immediate environs of the Sultan Hasanuddin Complex at the top of Bonto Biraeng Timur (e.g. Rahim, 1975), but for my purposes it can include much of the hillock (Figure 6-12). Like Mangasa it contains a notable presence of 13th-14th century pieces (Figure 6-4a). It also has two geologically

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[16] Presumably the Arung Belo from Soppeng who was occasionally mentioned in the late 17th and early 18th century Makassar texts.

[17] The relevant points are as follows. The second tomb is ascribed to the Tallok raja "Karaeng Matoaya", while the tomb of "Sultan Abdullah" is provenanced to Tamalate (Rahim, 1975:4-5; Nurhadi et al., 1980:7-8; Patunru, 1983:59). But Kg Matoaya and Sultan Abdullah are two names of the same person (ST:14ff.). Now, given that Matoaya's father Makkoayang reportedly died at Tamalate (ST:10) he may well have been buried at Benteng Tua, and the names Matoaya and Makkoayang could have become confused at some point. I prefer the solution in which Makkoayang was buried at Tamalate, because this would place his tomb next to another tomb commemorating a pre-Islamic royal, i.e. Tunibatta's (6.5.2), and also locate the tombs of Abdullah and Mahmud, father and son, both in the Arung Palakka complex.

I also suggested that Mangasa's second *kobang* could house Kg Karunrung's burial. As reviewed in the text, we have the faint suggestion that Bonto Biraeng Barat was called Karunrung during the late 17th century. This could even identify "Kale Kundrulu" with Kg Karunrung, although a *kobang* is more fitting for a person of Kg Karunrung's historical stature. Moreover, his burial at Mangasa would have legitimised Sahaduddin's subsequent burial there, given the strong relationship of convenience which grew between them (see Andaya, 1981), and he would have been buried next to his father Mahmud. By the same arguments, however, Kg Karunrung could also be identified with "Jerak Buajaya".

interesting *keramat* features of volcanic stone, the outcrop called Mappapundung (Photo 6-11), and the bare surface of zone 44 whose sculptured relief includes the "Tomanurung's well" (Photos 6-8 and 6-12). A masoned menhir now lain on its side just northwest of the Sultan Hasanuddin complex (Photo 6-9) was originally close to zone 44 (see Figure 6-3).

The Sultan Hasanuddin Complex includes the multi-tiered slab-roofed tombs (Photo 6-13) of all the Gowa kings who died during the 17th century.[18] Though not of unusual shape, the grandeur of these royal tombs is unique to South Sulawesi, suggesting they may have been adapted from the house-like, pre-Islamic royal wooden tombs (Reid and Reid, 1988:59). The two other main tombs, near the entrance to the complex, appear to be Islamic interpretations of pre-Islamic burials. The slab-roofed tomb usually ascribed to Tallok's Sultan Abdullah is better associated with his father Makkoayang,[19] while the *kobang* tomb (Photo 6-14) is associated with Gowa's Tunibatta who had been beheaded in the 1565 war against Bone. The latter actually shelters two marked graves, and circumstantial evidence suggests that Tunibatta's companion is his mother Karaengloe Bainea.[20]

Tamalate shows a strong peak of early 16th century tradewares (Figure 6-13) which, along with the evidence of *keramat* locations, suggests it had sited Gowa's palace during Tumapakrisik Kallona's reign (1511-1547). This palace may have been sited near the apex of Bonto Biraeng Timur, and hence the source of much of the sherdage found on the hill's lower slopes (Figure 6-12; Photo 6-19). In support of this suggestion, the menhir behind the Hasanuddin Complex

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[18] Rahim (1975:6) and Patunru (1983:159) characterise one of the tombs as unidentified, but here I follow Nurhadi et al. (1980:8) in associating this tomb with Amir Hamzah.
[19] See footnote 17.
[20] Both graves as marked follow a parallel north-south axis enclosing stones at head and foot. Tunibatta's grave, at least, should follow the east-west orientation typical of immediately pre-Islamic Makassar burials (13.2.2), but the anomaly can be resolved by suggesting that the markers cut perpendicularly across two parallel, east-west oriented graves. My reason for tentatively identifying Tunibatta's companion with his mother Kgloe Bainea is the historical reference that Tunibatta's son Tunijallok buried her immediately upon the burial of Tunibatta (SG:42).

supposedly marks the former location of a *bissu*'s well called Bungung Barania (Rahim, 1975:8; Nurhadi et al., 1980:7). This would match up with the Bissu's Well at the other suspected palace location, Kale Gowa (6.5.3).[21] Possibly the burial of Tunibatta permanently changed the status of Tamalate from palace to ceremonial centre, a place where deceased Gowa kings were buried, and incumbent Gowa kings inaugurated in the presence of their ancestors at the *Batu Pelantikan* just outside the graveyard. In this interpretation, the brick structure at the Hasanuddin Complex (6.4) would have been built to mark off the royal cemetery.

6.5.3 Kale Gowa

The name "Kale Gowa" is here used for the area centred around the Bissu's Well and the *Batu Tomanurung* or Tomanurung's stones. The latter consist of three flat stones under a shelter (Photo 6-16) which may have been buried together to symbolise a pact (cf. Kallupa et al., 1989:46). The Bissu's Well (Figure 6-9) fills up naturally during the wet season, but during the dry season any water inside it must be carried up. As also noted by Nurhadi et al. (1980:9), a dense accumulation of "Ming" tradewares occurs around the well's rim in zones 107 and 108 (Appendix D; Figure 6-12). Even though SSPHAP collected all the tradeware sherds here, three months later 638 tradeware sherds (and 226 earthenware sherds) were again to be counted in zone 107. Hence sherds washed out from the bamboo grove due north of the well would appear to assemble in a lag deposit at the well's perimeter.

Given the lack of evidence of pre-Islamic burials here, the sheer quantity of tradeware sherds suggests a former palace centre. Such a palace was probably coeval with the construction of the Bissu's Well, which I would date to Alauddin's reign (Figure 6-10). Further, an early 17th century date is close to the peak in Kale Gowa's tradeware profile (Figure 6-13). Hence the "Tamalate palace" which

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[21] These *bissu* were transvestite priests once attached to the Bugis-Makassar courts.

stood between 1618 and c.1640 (6.4) was probably built at Kale Gowa (Figure 6-12).[22]

6.5.4 Allamoncong, Lonjo Boko, Sulengkaya

According to local information, Allamoncong was an old kampung name in use prior to the development of the Pandang-Pandang housing complex (Figure 6-12). Antiques were reportedly recovered across the road from a small old graveyard designated as "Makam [Grave(s) of] Karaeng Allamoncong". Its main feature is a line of seven restored, marked Islamic graves, four of them sheltered under a modern tomb (Table F-3).

Lonjo Boko is a small area where antiques were found just outside the old fortress walls (Figure 6-12). It would appear to represent a small community which lived in the shadow of the fort.[23] Sulengkaya is a semi-detached hillock which produced quite a strong presence of Ming and earlier tradewares (Figures 6-13). I name the hilltop after the Sulengkaya Islamic cemetery whose oldest marked graves could date back to the 17th century. The name occurs in the Makassar records as the war standard carried by Tumapakrisik Kallona (SG:20) in Gowa's battle against Tallok, Maros and Polombangkeng (4.2.1).

6.5.5 Datak Toa

According to the informants who claimed to live in Katangka Toa themselves, the original name for the Katangka Complex was Datak Toa (see Figure 6-12). Their report was the only indication I recovered of a potentially suitable location for the important early Gowa toponym Datak. Specifically, Datak was one of the original "nine confederates" (Figure 2-2); "Dato" was one of the *Bate Salapang* during the reigns of Tunipalangga and Tunijallok (Mukhlis, 1975:61-62); and Datak

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[22] Note that, despite the extrapolated tradeware densities (Figure 6-4b), I suspect the area between Kale Gowa and Mangasa was unoccupied during the 15th-17th centuries. Also the two areas of graves in zone 108 (Figure 6-3) are modern and unassociated with the site's former use.

[23] The associated Islamic graveyard (Figure 6-3) is modern.

was the karaengship of Tunibatta and one of his sons (Figure 4-8). Moreover, there is strong evidence that Abdul Jalil built his 1694 Datak palace (LB:180) in the area now called the Katangka Comples.

Firstly, while local tradition claims that the Katangka mosque (Photo 6-17) dates back to greater Gowa's adoption of Islam in 1605, it lacks support. Rather, parts of the present building could date back to the 18th century or maybe earlier (Reid and Reid, 1988:58), as also suggested by information given to Nurhadi et al. (1980:8) that the mosque was first restored in 1818.

Secondly, the Bungung Lompoa ("great well") tucked behind the Katangka complex (Photo 6-12) supports the identification of Datak Toa as a palace, as it repeats the previously noted association of a major well with a Gowa palace. The well has masonry walls inside its cement enclosure, and as yet no evidence dates any extant Makassar masonry earlier than the 17th century.[24]

Thirdly, the mosque is backed by the *kobang* tombs of 18th to 19th century Gowa aristocrats (Reid and Reid, 1988:58). This suggests a parallel with Tamalate whereby the area became a designated, elite burial area (Photo 6-20) after its abandonment as a palace.[25] Finally, the tradeware profile of Datak Toa shows a distinct, late 17th to 18th century accentuation (Figure 6-13).

6.5.6 Bone-Bone, Lakiung, Kaballokang

The location of Bone-Bone, inside Benteng Tua, supports its identification with the Bone karaengship held by three early 16th century daughters of Gowa kings (Figures 4-8 and 4-9). Further, it has no Islamic burial ground but two areas are scarred with looter's holes, indicative of pre-Islamic

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[24] Figure 6-12 shows the well as part of Tamalate, but this is because much of the sherdage around the well is likely to have originated from Tamalate, rather than because I interpret the well as coeval with the Tamalate palace.

[25] Reid and Reid (1988:58-9) date the origins of the *kobang* tombs to the 18th century, largely by reference to the Katangka Complex. However, Mahmud's *kobang* tomb suggests a 17th century origin for the *kobang* style, and that it only gradually replaced the multi-tiered, slabbed roof tombs.

burials. Against this, Bone-Bone has an only weak presence of 16th century tradewares (Figure 6-13).

There are also two looted areas in Lakiung (Figures 6-3 and 6-12), as well as Makam Tompo Bataya whose Islamic grave markers, oriented between 330° and 10° from north, appear to date back to the 17th century (Table F-3). The same may apply to the oldest graves in the Syech Yusuf complex, even though the *kobang* tombs of Syech Yusuf and his wife (Photo 6-22) date to 1705 (Reid and Reid, 1988:58). They are the most revered of all Makassar tombs, presumably in recognition of Syech Yusuf's career as a major Islamic teacher who also staunchly opposed the Dutch in Java (Reid and Reid, 1988:57-58; see also Andaya, 1981:276-278).[26] There is no evidence to suggest that the toponym Lakiung, which recurs in 16th and 17th century contexts (Chapter 3), did not refer to present-day Lakiung.[27]

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[26] Reid and Reid (1988:58) relate the story that Syech Yusuf's wife was a Gowa sultan's daughter called Sitti Habibah Dg Misanga, but I have not found any textual support. LB pays Syech Yusuf quite some attention, mentioning his birth in 1626, his request to become a *haji* in 1644, his exile to the Cape of Good Hope in 1694 and his death in 1699 (LB:90,106,180,184). A further reference cites the death of Syech Yusuf's mother in 1666 (LB:132).

A statement by Abdul Jalil in 1691 to the VOC Resident, de Haas, might lie behind the story cited by Reid and Reid. Abdul Jalil explained that he, Mohammad Ali and Syech Yusuf were brothers because Syech Yusuf's mother had been married to the old ruler of Gowa, and that both Syech Yusuf and his father were Tallok *Gelarang* (Andaya, 1981:277). Cense (1950) interpreted Abdul Jalil's report to mean that the mother of Abdul Jalil and Mohammad Ali (Petak Dg Nisali) was also the mother of Syech Yusuf, but found this hard to believe as the latter two were born more than 25 years after Syech Yusuf's birth. The point suggests that Syech Yusuf's mother had married not Hasanuddin (i.e. the father of Abdul Jalil) but Hasanuddin's father Mohammad Said. Indeed, one of Mohammad Said's wives was called Lokmok Singarak (Table 3-3) which ties in with the story that Syech Yusuf's mother was called Sitti Aminah Dg Singara (Kallupa, 1985:63). Moreover, the location of her grave near Benteng Tallok (12.3.2) accords with Syech Yusuf's reported Tallok origins. Abdul Jalil presumably meant he was Syech Yusuf's brother as an inclusive kinship category.

[27] Reid (1983a:130-131) relates the name Lakiung to the *lakkian* house-like structures where the Sakdan-Toraja keep the corpse during a death feast, although Noorduyn (1985) disputes the suggestion on linguistic grounds.

Kaballokang is unusual in that its tradeware profile does not have the late 17th to 18th century surge shown by the other low-lying areas in Benteng Tua (Figure 6-13). The small Islamic graveyard includes two apparently 17th century markers (Photo 6-26; Table F-3). Antique hauls were recovered immediately to the east (Photo 6-22 to 6-24) and, reportedly, further east again (Figure 6-12). The toponym evokes Kg Kaballokang, a son of Kg Karunrung (Table 3-6). Given also the existence of *kampung* Karunrung only a kilometre from the fort's north wall (7.2.2), the "Karunrung gate", which a 1677 reference implictly places at the end of Benteng Tua opposite from the Bisei gate (Andaya, 1981:184; Bulbeck, 1990:93), is best identified with my Kaballokang-Lakiung gate.

6.5.7 Katangka Toa, Bisei

The area here called Katangka Toa is notable both as an enclave of precolonial tradeware sherdage (Photo 6-21) and as the area of Benteng Tua's only large bastion (Photo 6-27; Figure 6-12). The antiques reportedly recovered from here would be unrelated to the tiny modern graveyard which serves the present inhabitants living atop the bastion. "Katangka", which is possibly the oldest Gowa toponym (Figure 2-2), need not have referred to my Katangka Toa site (6.5.1).

Bisei corresponds to an area of quite concetnrated precolonial tradewares directly within the fort's east gate (Figure 6-12). Reportedly there used to be an extensive Islamic cemetery, including an area of east-west oriented grave markers which, along with zone 182, had been looted around 30 years ago. Although housing developments have razed most of the cemetery, scattered old marked graves have survived in the house yards and garden areas.

6.6 Settlement Pattern Analysis

6.6.1 Site hierarchies and settlement patterns

Figure 6-1 shows the fieldwork-site names of the historical area-sites and point-sites (see 5.5.4) used here and in the present settlement pattern analysis to be detailed in Chapter

9.[28] In settlement hierarchy studies, the intersite distances are frequently measured between the sites represented as dimensionless points. This simplification need not distort the results if the sites are widely spaced (e.g. Hodder and Hassall, 1971; Hammond, 1974) or small (e.g. Gibbon, 1984:226-7). However, when the analysis deals with closely packed sites of various sizes, significant distortions could follow. For instance, if Benteng Tua were represented by a point in the middle of the fortress, no independent site outside the walls could possibly be closer than 300 metres.[29] Or if we construe c.1920 Makassar (Ujung Pandang) as a point, then the majority of the kampungs situated right next to the city's continuously settled area would be construed as kilometres away (see Figure 5-3).

The gravity model attempts to overcome this problem by weighting the site's importance, in effect representing the site as a body with its mass centred in the site's centre. The site's importance would reflect its population (Hodder and Orton, 1976:187-191), specifically the amount of human interaction occurring at the site (Gibbon, 1984:242-244). But neither variable is directly estimable for SSPHAP's sites. There is also the theoretical objection that a site's population or its activity may have been unevenly distributed, and centred away from the site's geographical centre.[30]

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[28] Note that the point-sites have been complemented by two further sources - modern toponyms matching historical toponyms but which were not recorded by SSPHAP as sites (T), and a Suaka historical site (S) at Antang (Kallupa, 1985:132-133) which would have fulfilled SSPHAP's criteria but which falls outside the surveyed area. The criteria for accepting a historical site merely on the basis of a toponym are detailed elsewhere (12.3). Suffice it here to say that a historical site associated with the late 17th century toponym of Mangallik (Table 3-5) appears to have been missed by SSPHAP's survey because small changes in the course of the Jeknekberang (Figure 6-2) could have resulted in the destruction or the burial of the relevant archaeological remains. The settlement pattern analysis should not ignore these data despite their poorer documentation.

[29] i.e. 200 metres to the wall, plus 100 metres to fall beyond the "virtually continuous area" (see 5.5.3).

[30] Possibly, the number of tradeware pieces dated to a particular period could be used as a proxy for population or human interaction. Indeed the estimates of surface exposure could be used to fix the centre of distribution of the

The simplest way to account for the variation in the sites' shape and area is to define intersite distance as the least straight-line, "non-site distance" between any point on one historical area-site and any point on the other.[31] I say "non-site distance" because I also mean that if a third site intervenes between the two sites being compared, then the distance involved in crossing the intervening site is excluded from the intersite distance.[32]

Accepting this definition of intersite distance brings us to the issue of how best to cluster the intersite distances. The nearest neighbour method clusters on the basis of the smallest distance between any two Operational Taxonomic Units (OTUs) whether they are single or have already joined some cluster (Kronenfeld, 1985). This technique is widely used in spatial archaeology (e.g. Hodder and Orton, 1976:43 ff.; Stark and Young, 1981) and indeed underlies my procedure for clustering surveyed zones into area-sites (5.6.1). However, it is inappropriate for clustering across SSPHAP's sites because (i) it integrates only a fraction of the available

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recorded tradewares. However, the exercise is inappropriate here because the recognition of a historical point- or area-site accepts other evidence in addition to the presence of appropriately dated tradewares. I have not had the opportunity to apply a gravity model to SSPHAP's recorded distribution of tradewares (13.3.2).

[31] For point-sites, of course, site area is nil and the site is represented by only one point.

[32] If I were using a gravity model, I could point out that this definition would be a very precise interpretation of one of the model's underlying assumptions, i.e. that '...people are more likely to travel to the nearer of two equally attractive locations when they are at unequal distances' (Gibbon, 1984:242). If a site is attractive then that should apply to all of it, not just its centre, and furthermore to any site which needs to be traversed in moving between two other sites. Still it is probably best to avoid a travel model, firstly because the exercise should then use travel-time space rather than geographic space (Gorenflo and Gale, 1990), and secondly because SSPHAP's sites constitute an inextricable mixture of burial grounds and former living sites, i.e. places which would attract travellers under widely different circumstances (5.6). I accept that my technique lacks any overt behavioural foundation, but this no reason why I should not treat my sites like "black boxes", and hence treat intersite distance as the smallest "white (non-site) distance" separating any two "black boxes".

information on intersite distances;[33] and (ii) SSPHAP's sites along border areas between site clusters stand out as peripheral phenomena of unlcear wider affinities, rather than as the centralising foci which they would become in nearest neighbour analysis (e.g. 9.5).

In the extreme alternative, the furthest neighbour method, after two or more OTUs have clustered, the cluster's distance from any other compared item is defined as the maximum distance between it and any member of the cluster (Kronenfeld, 1985). SSPHAP's site clusters would therefore be drawn away from each other towards those outlying sites furthest away from other clusters. These outliers appear no more suitable as centralising foci than SSPHAP's sites in border areas. Moreover the technique makes very partial use of the available information, exaggerating the scope for possibly unrepresentative intersite distances.

The method which overcomes these objections is average linkage, i.e. the consecutive joining of OTUs or clustered OTUs depending on which average OTU distance is the smallest (see Sneath and Sokal, 1975; Kronenfeld, 1985). In effect a new OTU-centre, which need not coincide with any previously recognised OTU, is plotted after every joining event. The technique assigns equal weight to and uses all of the intersite distances. It establishes sequences of clustering events so that we can distinguish minor site centres from higher-level site centres. Further the technique can test whether SSPHAP's largest sites are really central places, because the largest sites will coincide with the highest level site centres only if these largest sites are surrounded by a swarm of smaller sites.

6.6.2 Application to the present data

Four hierarchical clustering exercises are carried out to accommodate two crossing considerations (Figure 6-15).

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[33] For instance, a cluster of sites (A) could on average be closest to a cluster to the west (B), but minimum linkage would make them join a cluster to the east (C) if the easternmost member of A and the westernmost member of C happened to show the smallest intersite distance at that stage in the clustering procedure.

Firstly, Benteng Tua (and Benteng Anak Gowa) could be taken as single sites essentially defined by their former encircling walls. Alternatively, we can ignore the walls and treat the enclosed area-sites on the same footing as SSPHAP's non-fortified sites. In that case Benteng Tua would be represented by four site areas: Bisei; Katangka; Kaballokang/Lakiung/Mangasa/Bone-Bone (KLMB), Kale Gowa/Tamalate/Datak/Sulengkaya/Allamoncong/Lonjo Boko (KTDSAL).[34]

Secondly the Jeknekberang, whose modern course appears to have closely followed the 1693 Sungai Garassik (5.4.2), could arguably be considered a barrier to the exercise of clustering sites. A travel model would certainly acknowledge that crossing a major river entails a cost. The present approach is also free to adopt the option that site clusters should not cross major geographical barriers.

The half-matrices of original intersite distances are given in Tables 6-3 and 6-4, using the area-site and point-site names listed in Appendix C. I measured intersite distances from whichever of my maps has the largest scale, including SSPHAP's site maps (e.g. Figure 6-3), and took them to the nearest five metres.[35] Crossings over the Jeknekberang are shown in brackets. Table 6-3 considers the case where the forts are considered as single sites, and Table 6-4 considers the case where fortress wall is ignored. The site goups are labelled by the first letters of the site names. For instance "BBJKKP" stands for "Benteng Tua/Bidaraya/Jipang/Karunrung

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[34] Note that the two approaches both account for the mass of the site in the forts as a positive factor. Treating Benteng Tua as a single site greatly reduces the non-site distance between sites opposing each other across the fort, because no non-site distance is involved in crossing the fort. Thus the intersite distance between Bidaraya and Pandang-Pandang (see Figure 6-1) is reduced by the approximately 400 metres between the fort's northern and southern walls. On the other side of the coin, treating Benteng Tua as its four enclosed area-sites means intersite distances across the fort usually entail some enclosed non-site distance enclosed within the fort, but because Benteng Tua is now construed as four area-sites rather than one area-site, as a collective entity it will enjoy four times the weight in the average-linkage clustering.

[35] Most of the intersite distances would have nothing like that degree of accuracy, but there is no point in rounding off just for the sake of it.

Selatan/Karunrung Utara/Pandang-Pandang" (Analysis 6-1), while "BJKKKKBKP" stands for "Bidaraya/Jipang/Karunrung Selatan/Karunrung Utara/KLMB/KTDSAL/Bisei/Katangka Toa/Pandang-Pandang" (Analysis 6-3). Tables 6-3 and 6-4 also include enough intersite distances involving the BKDA quartet that it would not join the Benteng Tua cluster under any circumstances; likewise for the PDCSS group with respect to the Anak Gowa cluster. On the other hand the BB and PMPKPPSS groups join the Benteng Tua cluster, and the KKKKK group joins the Anak Gowa cluster, under all circumstances, as demonstrated in due course (12.3.2, 9.1 and 11.2 respectively).[36]

Regardless of the conditions applied, Benteng Tua stands out as the centre of a cluster which takes in a swarm of smaller, surrounding sites (Figure 6-15). The cluster centre moreover consistently coincides with Bonto Biraeng Timur, i.e. the general area of the fort's three historical palace centres (Figure 6-12), although it might be reading the analysis too closely to attach much significance to this particular result. There is however no doubt that Benteng Tua was a central historical site, based on the criteria by which SSPHAP recognises historical sites.

6.7 An Overview of Benteng Tua

My review of the historical and archaeological data strongly supports the traditional belief (e.g. Mukhlis, 1975; Mattulada, 1982a:19; Patunru, 1983) that the Gowa dynasty originated within the area of Benteng Tua. Backdating the Gowa kinglist dated the origins of the Gowa dynasty to around 1300 AD. The dynasty was apparently preceded by three kings of Katangka (Noorduyn, 1985) who would have lived during the 13th century AD (Figure 2-2). These dates agree with the strong presence of 13th to 14th century tradewares at Benteng Tua. The concordance gives some support to accepting Gowa's

[36] The affinities of the B(2)B group are unclear. By average-linkage clustering, its local centre lies between 2.6 and 2.8 km from the centre of the Anak Gowa cluster. But since the land to the south was not surveyed, the B(2)B group might well cluster with sites to the south rather than towards Anak Gowa.

TABLE 6-3. LOWER-MIDDLE JEKNEKBERANG INTERSITE DISTANCES IN METRES - FORTRESS WALL TREATED AS SITE

	B	B	J	K	K	P	M	K	C	G	B	M	B	B	P	K	P	P	S	S	T	M	D
Benteng Tua																							
Bidaraya	350																						
Jipang	575	205																					
Karunrung Sel.	1035	650	445																				
Karunrung Utara	1325	990	690	240																			
Pandang-Pandang	535	1010	1210	1675	1965																		
Maccinik Somba.	650	1605	1595	1915	2150	1440																	
Kaledu Paya	(600)	(1265)	(1525)	(2335)	(2670)	(710)	(870)																
Campagaya	(630)	(1310)	(1595)	(2370)	(2610)	(880)	(715)	155															
Gusung	(975)	(1755)	(2055)	(2435)	(2640)	(1340)	(615)	570	445														
Bonto Jalling	(1500)	(2245)	(2600)	(2910)	(3120)	(1760)	(1010)	840	910	460													
Makam Mangasa	(1800)	(2645)	(2855)	(3160)	(3350)	(2050)	(1210)	1165	1150	760	240												
Bontomanaik 1	995	1585	1420	1635	1750	2120	720	(1625)	(1470)	(1245)	(1545)	(1660)											
Bonto Kapette	1915	2405	2205	2170	2185	3075	1645	(2705)	(2365)	(1960)	(2255)	(2220)	1005										
Paccalaya	750	1580	1865	2280	2475	1570	1605	(2150)	(2310)	(2700)	(3200)	(3440)	1810	3040									
Kasomberang	1220	1970	2225	2570	2755	2005	2055	(2660)	(2710)	(2780)	(3760)	(4030)	2340	3770	510								
Paccinongang	1580	2280	2530	2830	2985	2450	2325	(3090)	(3215)	(3625)	(4075)	(4410)	2905	4630	810	130							
Pao-Pao	1405	2080	2335	2620	2785	2325	2160	(2955)	(3060)	(3450)	(3960)	(4205)	2455	4475	690	110	120						
Sampeang	1015	1675	1920	2235	2415	2090	1700	(2655)	(2765)	(2275)	(2840)	(3150)	2670	4075	410	180	285	115					
Sero	850	1390	1615	1865	2050	2110	1570	(2180)	(1640)	(1920)	(2360)	(2660)	2930	3805	615	455	560	395	130				
Tompok Balang	1550	1940	2220	2730	3000	1210	2590	(1720)	(2000)	(2380)	(2650)	(2990)	3275	4255	1725	1910	2330	2260	2240	2380			
Mangallik	(2150)	(2530)	(2825)	(3330)	(3530)	(1730)	(3195)	2420	2140	2825	3060	3370	(3785)	(4700)	(2310)	(2475)	(2770)	(2740)	(2755)	(2950)	(570)		
Dampang	(1420)	(1920)	(2155)	(2615)	(2920)	(940)	(2210)	1215	1555	1895	2035	2365	(2925)	(3865)	(2045)	(2375)	(2785)	(2720)	(2600)	(2695)	(615)	900	
Labengnge	(1650)	(2105)	(2310)	(2845)	(3070)	(1125)	(2330)	1310	1615	1955	2090	2400	(3050)	(3980)	(2250)	(2545)	(2935)	(2900)	(2860)	(3005)	(775)	840	220
Gotong	(1695)	(2155)	(2350)	(2885)	(3155)	(1175)	(2310)	1300	1610	1935	2030	2345	(3060)	(3980)	(2340)	(2675)	(3035)	(3000)	(2990)	(3125)	(880)	925	315
Manyampang	(2010)	(2440)	(2680)	(3155)	(3410)	(1510)	(2730)	1695	2020	2365	2510	2320	(3470)	(4355)	(2465)	(2730)	(3110)	(3050)	(2990)	(3125)	(910)	560	575
Makam Takbakka	(2475)	(3040)	(3160)	(3640)	(3920)	(2010)	(2990)	1875	2195	2355	1910	2130	(3625)	(4405)	(3305)	(3665)	(4050)	(3980)	(3860)	(3990)	(1725)	1515	1275
Tombolok	(2605)	(3160)	(3290)	(3760)	(4120)	(2150)	(3090)	2000	2300	2450	2010	2320	(3735)	(4505)	(3420)	(3745)	(4140)	(4070)	(3950)	(4090)	(1785)	1555	1375
M.Kocci Borong	(2710)	(3185)	(3350)	(3810)	(4160)	(2275)	(2700)	2105	2410	2525	2000	2560	(3345)	(4170)	(3540)	(3875)	(4255)	(4195)	(4090)	(4215)	(1935)	1665	1520
Bonto Tangnga	(2160)	(2965)	(3240)	(3760)	(3990)	(2190)	(1860)	1350	1510	1250	815	760	(2410)	(3030)	(3730)	(4300)	(4700)	(4530)	(4305)	(4060)	(2795)	2670	2170
Jingarak	(2385)	(2995)	(3355)	(4125)	(4340)	(2215)	(2300)	1630	1780	1620	1340	1355	(2915)	(3610)	(3800)	(4180)	(4550)	(4420)	(4325)	(4340)	(2280)	2720	1690
Anak Gowa	(1585)	(1960)	(2260)	(2990)	(3210)	(1295)	(1750)	830	1105	1135	1090	1290	(2450)	(3305)	(2815)	(3250)	(3670)	(3565)	(3360)	(3385)	(1590)	1735	1010
Kanjilo T-L	(2970)	(3685)	(3870)	(4695)	(4870)	(2835)	(2780)	2205	2375	2125	1710	1700	(3365)	(3795)	(4260)	(4750)	(5150)	(4985)	(4900)	(4910)	(3005)	3160	2230
Kanjilo B-L	(3050)	(3845)	(4210)	(4750)	(4910)	(2935)	(2910)	2290	2435	2165	1850	1780	(3375)	(3775)	(4610)	(5050)	(5415)	(5245)	(5110)	(5220)	(3240)	3345	2370
Kanjilo Barat	(3220)	(3955)	(4250)	(4920)	(5085)	(3095)	(3045)	2460	2605	2335	1980	1915	(3400)	(3930)	(4555)	(5440)	(5290)	(5200)	(5065)	(5200)	(3450)	3345	2580
Kanjilo T-D	(3265)	(3940)	(4400)	(5050)	(5240)	(2900)	(3170)	2510	2705	2500	2100	2060	(3745)	(4225)	(4220)	(4780)	(5170)	(5000)	(4880)	(5060)	(3285)	3200	2600
Kanjung Maek	(3475)	(4065)	(4430)	(5275)	(5480)	(3060)	(3260)	2715	2925	2745	2140	2170	(3990)	(4460)	(4450)	(5010)	(5500)	(5155)	(5085)	(5085)	(3435)	3260	2850
Bontomanaik 2	(3990)	(4540)	(4440)	(4960)	(5410)	(3625)	(4215)	2980	3130	3545	3320	3360	(4840)	(5375)	(4950)	(5240)	(5640)	(5565)	(5495)	(5615)	(3365)	3015	2940
Bonto Pakja	(4955)	(5400)	(5310)	(5985)	(6370)	(4570)	(5090)	3845	4025	4510	4150	4160	(5790)	(6300)	(5860)	(6160)	(6520)	(6450)	(6400)	(6545)	(4255)	3825	3875
Dampang Bira	2550	2455	2470	2185	2210	3235	4040	(3340)	(3195)	(4270)	-	-	3900	4285	2655	2460	2225	2245	2100	1740	4355	(4915)	(4590)
Bangkala/Ende	2705	2700	2730	2475	2500	3470	4310	(3535)	(3410)	(3920)	-	-	4160	4560	2675	2360	2050	2055	2050	1795	4385	(4495)	(4730)

TABLE 6-3. LOWER-MIDDLE JEKNEKBERANG INTERSITE DISTANCES IN METRES (CONT.)

	B	B	J	K	K	P	M	K	C	G	B	M	B	B	P	K	P	P	S	S	T	M	D
Kubur. Bangkala	2920	2950	2995	2720	2740	3725	4540	(3830)	(3620)	(4070)	-	-	4450	4790	2905	2620	2310	2300	2290	2005	4625	(5170)	(4890)
Antang	3900	3725	3730	3405	3255	4625	5305	(4840)	(4415)	(5670)	-	-	4925	5300	4215	3985	3695	3725	3625	3290	5885	(6420)	(6125)
Pekallak Bua	-	-	-	-	-	-	(4920)	3820	4135	4460	4635	4900	-	-	-	-	-	-	-	-	(2400)	1835	2665
Dampang	-	-	-	-	-	-	(4400)	3465	3760	4120	4400	4700	-	-	-	-	-	-	-	-	(1780)	1460	2295
Cellaya	-	-	-	-	-	-	(5560)	4615	4855	5250	5560	5855	-	-	-	-	-	-	-	-	(2910)	2570	3410
Saukang Borong	-	-	-	-	-	-	(6155)	5195	5455	5830	6110	6400	-	-	-	-	-	-	-	-	(3515)	3110	4000
Saukang Boe	-	-	-	-	-	-	(6455)	5490	5780	6165	6420	6705	-	-	-	-	-	-	-	-	(3835)	3455	4290

Labengnge	L	G	M	M	T	M	B	J	A	K	K	K	K	K	B(2)	B	D	B	K	A	P	D	C	S	S
Gotong	120																								
Manyampang	405	425																							
Makam Takbakka	1085	980	880																						
Tombolok	1185	1050	900	115																					
M. Kocci Borong	1300	1195	1020	255	150																				
Bonto Tangnga	1855	1690	2050	2040	2080	1920																			
Jingarak	1550	1450	2060	1435	1495	1505	590																		
Anak Gowa	865	780	1120	770	835	810	860	630																	
Kanjilo T-L	2300	2325	2485	1755	1760	1695	900	545	1200																
Kanjilo B-L	2435	2475	2670	1925	1940	1870	1020	820	1360	158															
Kanjilo Barat	2675	2500	2695	1915	1925	1845	1160	780	1490	151	126														
Kanjilo T-D	2560	2420	2520	1700	1700	1595	1300	865	1400	324	520	183													
Kanjung Maek	2700	2570	2620	1785	1765	1675	1365	930	1600	584	494	290	145												
Bontomanaik 2	2750	2550	2435	1680	1575	1455	2560	2010	2115	1735	1890	1630	1355	1200											
Bonto Pakja	3650	3560	3310	2620	2500	2375	3350	2965	3075	2580	2670	2410	2135	1940	730										
Dampang Bira	(4780)	(4915)	(5065)	(5820)	(6080)	(6190)	-	-	-	-	-	-	-	-	-	-									
Bangkala/Ende	(4890)	(5040)	(5125)	(5900)	(6210)	(6340)	-	-	-	-	-	-	-	-	-	-	175								
Kub. Bangkala	(5115)	(5260)	(5370)	(6150)	(6365)	(6530)	-	-	-	-	-	-	-	-	-	-	280	150							
Antang	(6315)	(6425)	(6550)	(7370)	(7670)	(7810)	-	-	-	-	-	-	-	-	-	-	1280	1415	1225						
Pekallak Bua	2555	2555	2040	2740	2735	2820	4410	3935	3110	4200	4360	4285	4050	4020	3170	3610	-	-	-	-					
Dampang	2295	2360	1920	2500	2480	2530	4390	4070	3110	4450	4645	4645	4425	4475	3920	4550	-	-	-	-	1140				
Cellaya	3410	3475	2985	3985	3975	3795	5510	5080	4175	5440	5640	5615	5370	5410	4690	5165	-	-	-	-	1340	855			
Saukang Borong	3970	4020	3510	4165	4155	4200	6010	5545	4675	5870	6080	6015	5775	5425	4920	5300	-	-	-	-	1535	1475	645		
Saukang Boe	4250	4305	3800	4430	4420	4480	6300	5835	4980	6150	6350	6280	6060	6035	5150	5475	-	-	-	-	1780	1790	945	345	

Analysis 6-1 main clustering events. MCKGBM joins BB at 1785m; BBJKKP joins MCKGBMBB at 1929m; BBJKKPMCKGBMBB joins PKPPSS at 2539m (BKDA is 2759m from PKPPSS and >3647m from MCKGBMBBBBJKKP). TMMLGD joins MTM at 1330m; AJB joins KKKKK at 1116m; these join at 2154.5m (PDCSS is 4078m from TMMLGDMTMAJBKKKKK and 4595m from B(2)B).

Analysis 6-2 main clustering events. BBJKK joins MBB at 1745m; PT joins PKPPSS at 2117m; these join at 2266m (BKDA is 3496m from BJBKKMBB and 3065m from PTPKPPTS). AJB joins KKKKK at 1116m; these join CKGBM at 1884m; MMLGD joins MTM at 1233m; all join at 2096m (PDCSS is 4002m from MMLGDMTMCKGBMAJBKKKKK and 4595m from B(2)B).

TABLE 6-4. LOWER-MIDDLE JEKNEKBERANG INTERSITE DISTANCES IN METRES - FORTRESS WALL IGNORED

KLMB	K	K	B	K	B	J	P	K	K	M	K	C	G	B	M	B	B	P	K	P	P	S	S	T	M
KTDSAL	105																								
Bisei	291	108																							
Katangka	234	177	269																						
Bidaraya	380	470	560	350																					
Jipang	575	775	785	515	205																				
Pandang-Pandang	535	705	825	925	1760	1755																			
Karunrung Sel.	1050	1255	1290	1035	650	445	2075																		
Karunrung Utara	1350	1460	1560	1325	990	690	2335	240																	
Maccinik Somba.	650	760	925	900	1605	1595	1440	1915	2150																
Kaledu Paya	(600)	(960)	(1070)	(1205)	(1365)	(1525)	(710)	(2335)	(2670)	(870)															
Campagaya	(630)	(890)	(1010)	(1160)	(1435)	(1595)	(880)	(2370)	(2610)	(715)	155														
Gusung	(975)	(1230)	(1375)	(1575)	(1755)	(2055)	(1340)	(2435)	(2640)	(615)	570	445													
Bonto Jalling	(1500)	(1710)	(1790)	(1760)	(2245)	(2600)	(1760)	(2910)	(3120)	(1010)	840	910	460												
Makam Mangasa	(1800)	(2010)	(1975)	(2070)	(2645)	(2855)	(2050)	(3160)	(3350)	(1210)	1165	1150	760	240											
Bontomanaik 1	995	1195	1280	1600	1585	1420	2120	1635	1750	720	(1625)	(1470)	(1245)	(1545)	(1660)										
Bonto Kapette	1915	2130	2490	2475	2405	2205	3075	2170	2185	1645	(2705)	(2365)	(1960)	(2255)	(2220)	1005									
Paccalaya	940	850	750	940	1580	1865	1570	2280	2475	1785	(2150)	(2310)	(2700)	(3200)	(3440)	2090	3300								
Kasomberang	1560	1340	1220	1425	1970	2225	2005	2570	2755	2260	(2660)	(2710)	(2780)	(3760)	(4030)	2610	3925	510							
Paccinongang	1825	1705	1580	1810	2280	2530	2450	2830	2985	2525	(3090)	(3215)	(3625)	(4075)	(4410)	3345	4630	810	130						
Pao-Pao	1760	1540	1405	1615	2080	2335	2325	2620	2785	2575	(2955)	(3060)	(3450)	(3960)	(4205)	2770	4475	690	110	120					
Sampeang	1315	1165	1015	1350	1675	1920	2090	2235	2415	2015	(2655)	(2765)	(2625)	(3235)	(3530)	3010	4075	410	180	285	115				
Sero	1255	910	850	1105	1390	1615	2110	1865	2050	2540	(2575)	(1960)	(2330)	(2880)	(3100)	2930	3805	615	455	560	395	130			
Tompok Balang	1610	1550	1840	1635	2120	2420	1210	2960	3210	2590	(1720)	(2000)	(2380)	(2650)	(2990)	3275	4255	1725	1910	2330	2260	2240	2380		
Mangallik	(2255)	(2150)	(2500)	(2360)	(2710)	(3035)	(1730)	(3540)	(3720)	(3195)	2420	2140	2825	3060	3370	(3785)	(4700)	(2310)	(2475)	(2770)	(2740)	(2755)	(2950)	(570)	
Dampang	(1420)	(1590)	(1685)	(1710)	(2420)	(2665)	(940)	(3025)	(3385)	(2210)	1215	1555	1895	2035	2365	(2925)	(3865)	(2045)	(2375)	(2785)	(2720)	(2600)	(2695)	(615)	900
Labengnge	(1650)	(1810)	(1995)	(2065)	(2635)	(2905)	(1125)	(3230)	(3580)	(2330)	1310	1615	1955	2090	2400	(3050)	(3980)	(2250)	(2545)	(2935)	(2900)	(2860)	(3005)	(775)	840
Gotong	(1695)	(1890)	(1995)	(2065)	(2915)	(2805)	(1175)	(3250)	(3420)	(2310)	1300	1610	1935	2030	2345	(3060)	(3980)	(2340)	(2675)	(3035)	(3000)	(2990)	(3125)	(880)	925
Manyampang	(2010)	(2105)	(2480)	(2285)	(2910)	(3425)	(1510)	(3710)	(3975)	(2730)	1695	2020	2365	2510	2320	(3470)	(4355)	(2465)	(2730)	(3110)	(3050)	(2990)	(3125)	(910)	560
Makam Takbakka	(2475)	(2765)	(3010)	(2950)	(3780)	(3265)	(2010)	(3740)	(4030)	(2990)	1875	2195	2355	2285	2480	(3625)	(4405)	(3305)	(3665)	(4050)	(3980)	(3860)	(3990)	(1725)	1515
Tombolok	(2605)	(2960)	(3155)	(3115)	(3930)	(3370)	(2150)	(3860)	(4235)	(3090)	2000	2300	2450	2350	2685	(3735)	(4505)	(3420)	(3745)	(4140)	(4070)	(3950)	(4090)	(1785)	1555
M.Kocci Borong	(2710)	(2980)	(3165)	(3200)	(4010)	(3480)	(2275)	(3900)	(4260)	(3090)	2105	2410	2525	2225	2560	(3755)	(4615)	(3540)	(3875)	(4255)	(4195)	(4090)	(4215)	(1935)	1665
Bonto Tangnga	(2160)	(2350)	(2660)	(2610)	(2965)	(3240)	(2190)	(3760)	(3990)	(1860)	1350	1510	1250	815	760	(2410)	(3030)	(3730)	(4300)	(4700)	(4530)	(4305)	(4060)	(2795)	2670
Jingarak	(2385)	(2850)	(3120)	(2840)	(2995)	(3355)	(2215)	(4125)	(4340)	(2300)	1630	1780	1620	1340	1355	(2915)	(3610)	(3800)	(4180)	(4550)	(4420)	(4325)	(4340)	(2620)	2720
AnakGowa Utara	(1585)	(2030)	(2270)	(2320)	(2045)	(2360)	(1360)	(2990)	(3210)	(1750)	830	1105	1135	1090	1290	(2450)	(3305)	(2815)	(3250)	(3670)	(3565)	(3360)	(3385)	(1600)	1810
AnakGowa Sel.	(1890)	(2320)	(2520)	(2715)	(2300)	(2710)	(1605)	(3330)	(3550)	(2060)	1010	1240	1320	1320	1500	(2590)	(3450)	(3150)	(3675)	(4030)	(3880)	(3745)	(3780)	(1750)	1940
Kanjilo T-L	(2970)	(3260)	(3500)	(3390)	(3685)	(3870)	(2835)	(4695)	(4870)	(2780)	2205	2375	2125	1710	1700	(3365)	(3795)	(4260)	(4750)	(5150)	(4985)	(4900)	(4910)	(3140)	3160
Kanjilo B-L	(3050)	(3425)	(3570)	(3630)	(3915)	(4210)	(2935)	(4750)	(4910)	(2910)	2290	2435	2165	1850	1780	(3375)	(3775)	(4610)	(5050)	(5415)	(5245)	(5110)	(5220)	(3400)	3345
Kanjilo Barat	(3220)	(3510)	(3745)	(3710)	(4040)	(4250)	(3095)	(4920)	(5085)	(3045)	2460	2605	2335	1980	1915	(3400)	(3930)	(4555)	(5440)	(5290)	(5200)	(5065)	(5200)	(3450)	3345
Kanjilo T-D	(3265)	(3700)	(4010)	(3715)	(4045)	(4400)	(2900)	(5050)	(5240)	(3170)	2510	2705	2500	2100	2060	(3745)	(4225)	(4480)	(5100)	(5455)	(5310)	(5150)	(5060)	(3285)	3200
Kanjung Maek	(3475)	(3875)	(4150)	(3850)	(4190)	(4430)	(3260)	(5275)	(5480)	(3260)	2715	2925	2745	2140	2170	(3990)	(4460)	(4700)	(5310)	(5750)	(5470)	(5370)	(5380)	(3435)	3260
Bontomanaik 2	(3990)	(4450)	(4570)	(4625)	(4610)	(4865)	(3625)	(5310)	(5750)	(4215)	3140	3325	3545	3320	3360	(4840)	(5375)	(4950)	(5240)	(5640)	(5565)	(5495)	(5615)	(3365)	3015
Bonto Pakja	(4955)	(5310)	(5470)	(5700)	(5500)	(5730)	(4570)	(6185)	(6580)	(5090)	4005	4220	4510	4150	4160	(5790)	(6300)	(5860)	(6160)	(6520)	(6450)	(6400)	(6545)	(4255)	3825
Dampang Bira	2815	2745	2550	2550	2455	2470	3465	2185	2210	4040	(3740)	(3600)	(4270)	-	-	3900	4285	2655	2460	2225	2245	2100	1740	4355	(4915)

TABLE 6-4. LOWER-MIDDLE JEKNEKBERANG INTERSITE DISTANCES IN METRES (CONT.)

	K	K	B	K	B	J	P	K	K	M	K	C	G	B	M	B	B	P	K	P	P	S	S	T	M
Bangkala/Ende	3060	2960	2705	2750	2700	2730	3580	2475	2500	4310	(3935)	(3800)	(4195)	-	-	4160	4560	2675	2360	2050	2055	2050	1795	4385	(4495)
Kubur. Bangkala	3290	3160	2920	3010	2950	2995	3835	2720	2740	4540	(4425)	(4020)	(4385)	-	-	4450	4790	2905	2620	2310	2300	2290	2005	4625	(5170)
Antang	4115	4095	3900	3900	3725	3730	5025	3405	3255	5305	(5195)	(4825)	(5670)	-	-	4925	5300	4215	3985	3695	3725	3625	3290	5885	(6420)
Pekallak Bua	-	-	-	-	-	-	(4920)	3820	4135	4460	4635	4900	-	-	-	-	-	-	-	-	-	-	-	(2400)	1835
Dampang	-	-	-	-	-	-	(4400)	3465	3760	4120	4400	4700	-	-	-	-	-	-	-	-	-	-	-	(1780)	1460
Cellaya	-	-	-	-	-	-	(5560)	4615	4855	5250	5560	5855	-	-	-	-	-	-	-	-	-	-	-	(2910)	2570
Saukang Borong	-	-	-	-	-	-	(6155)	5195	5455	5830	6110	6400	-	-	-	-	-	-	-	-	-	-	-	(3515)	3110
Saukang Boe	-	-	-	-	-	-	(6455)	5490	5780	6165	6420	6705	-	-	-	-	-	-	-	-	-	-	-	(3835)	3455

	D	L	G	M	M	T	M	B	J	A	A	K	K	K	K	K	B(2)	B	D	B	K	A	P	D	C	S
Dampang																										
Labengnge	220																									
Gotong	315	120																								
Manyampang	575	405	425																							
Makam Takbakka	1275	1085	980	880																						
Tombolok	1555	1375	1050	900	115																					
M. Kocci Borong	1665	1520	1300	1020	255	150																				
Bonto Tangnga	2170	1855	1690	2320	2040	2080	1920																			
Jingarak	2035	1750	1650	2060	1435	1495	1505	590																		
AnakGowa Utara	1010	905	800	1210	1140	1210	1150	860	670																	
AnakGowa Sel.n	1210	1060	970	1300	870	965	890	970	630	220																
Kanjilo T-L	2520	2400	2325	2485	1755	1760	1695	900	545	1210	1200															
Kanjilo B-L	2665	2550	2475	2670	1925	1940	1870	1020	820	1500	1360	158														
Kanjilo Barat	2800	2675	2500	2695	1915	1925	1845	1160	780	1510	1490	151	126													
Kanjilo T-D	2690	2560	2420	2520	1700	1700	1595	1300	865	1495	1400	324	520	183												
Kanjung Maek	2850	2700	2570	2620	1785	1765	1675	1365	930	1705	1600	584	494	290	145											
Bontomanaik 2	2940	2750	2550	2435	1680	1575	1455	2560	2010	2270	2115	1735	1890	1630	1355	1200										
Bonto Pakja	3875	3650	3560	3310	2620	2500	2375	3350	2965	3120	3075	2580	2670	2410	2135	1940	730									
Dampang Bira	(4590)	(4780)	(4915)	(5065)	(5820)	(6080)	(6190)	-	-	-	-	-	-	-	-	-	-	-								
Bangkala/Ende	(4730)	(4890)	(5040)	(5125)	(5900)	(6210)	(6340)	-	-	-	-	-	-	-	-	-	-	-	175							
Kub. Bangkala	(4890)	(5115)	(5260)	(5370)	(6150)	(6365)	(6530)	-	-	-	-	-	-	-	-	-	-	-	280	150						
Antang	(6125)	(6315)	(6425)	(6550)	(7370)	(7670)	(7810)	-	-	-	-	-	-	-	-	-	-	-	1280	1415	1225					
Pekallak Bua	2665	2555	2555	2040	2740	2735	2820	4410	3935	3090	3250	4200	4360	4285	4050	4020	3170	3610	-	-	-	-				
Dampang	2295	2295	2360	1920	2500	2480	2530	4390	4070	3130	3160	4450	4645	4645	4425	4475	3920	4550	-	-	-	-	1140			
Cellaya	3410	3410	3475	2985	3985	3975	3795	5510	5080	4300	4340	5440	5640	5615	5370	5410	4690	5165	-	-	-	-	1340	855		
Saukang Borong	4000	3970	4020	3510	4165	4155	4200	6010	5545	4790	4810	5870	6080	6015	5775	5425	4920	5300	-	-	-	-	1535	1475	645	
Saukang Boe	4290	4250	4305	3800	4430	4420	4480	6300	5835	5095	5145	6150	6350	6280	6060	6035	5150	5475	-	-	-	-	1780	1790	945	345

Analysis 6-3 main clustering events. BJKKKKBKP joins MCKGBM at 1665m; these join BB at 1868m; these join at 2318m (BKDA is 2759m from PKPPSS and >3647m from MCKGBMBJKKKKBKPBB). TMMLGD joins MTM at 1330m; AAJB joins KKKKK at 1217m; these join at 2097m (PDCSS is 4085.5m from TMMLGDMTMAAJBKKKKK and 4595m from B(2)B).

Analysis 6-4 main clustering events. BJKKMKKBK joins PKPPSS at 1735m; these join PT at 1899m; these join BB at 2542m (BKDA is 2759m from PKPPSS and >3647m from BJKKMKKBK).
AAJB joins KKKKK at 1217m; these join CKGBM at 1817m; MMLGD joins MTM at 1233m; all join at 2074m (PDCSS is 4376m from MMLGDMTMCKGBMAAJBKKKKK and 4595m from B(2)B).

early kinglist as a true account of a father-to-son succession spanning the 14th and 15th centuries.

On the other hand, it would be unwise to infer that early Gowa enjoyed anything like the grandeur of Gowa during the 16th-17th centuries. As a polity it may have amounted to little more than a congregation of communities attracted by the defensibility of Bonto Biraeng (Figure 6-4a). Location strongly suggests an economy based on a wetland carbohydrate staple, probably rice. Early Benteng Tua (before it had walls) also appears to have been a "complex burial ground", possibly invoking the complex burial grounds to the east (Chapters 9 and 10) as an ethnohistorical analogy of early Gowa's status as a lineage. Further inferences should wait till we have reviewed the other sites. Interestingly, though, the site's flat tradeware profile between the 13th and 16th centuries (Figure 6-13) suggests that Gowa was in some sense representative of wider developments in the region.

It has been said that, after Gowa chose Somba Opu as a coastal palace during the reign of Tunipalangga (1547-1565), Somba Opu retained that status until its destruction in 1669, whereas Benteng Tua became a religious centre reserved for inaugurations and royal burials (Mukhlis, 1975; Reid, 1983a:141). This characterisation was apparently true of Tamalate but not of the fortress as a whole. As also noted by Mattulada (1982a:19), Gowa's palace centre returned to Benteng Tua during much of Alauddin's reign (1618-1631) - corresponding to a period when the Gowa royalty was the weaker partner compared to Tallok (13.3.3). Analogously, the Gowa royalty retreated to Benteng Tua after 1669 when Gowa's very existence was threatened. Even during periods when the strength of the Gowa located its palace at Somba Opu, Benteng Tua toponyms (Lakiung, Datak, and possibly Mangasa) recur in the Makassar texts. Benteng Tua's share of the Gowa tradeware pieces continues unabated through to the 18th century (Figures 6-13), and Benteng Tua was clearly a central historical site (Figure 6-15). In total these points demonstrate that Benteng Tua remained a densely populated area and the heartland of the Gowa dynasty.

Confirming the evidence that Abdul Jalil resited Gowa's palace centre to Datak Toa, indeed in the heart of Benteng Tua, at the end of the 17th century, the most prominent bulge in Benteng Tua's tradeware histogram spans the late 17th to 18th centuries (Figure 6-13). This result reflects the high proportion of Qing BW and "Qing Swatow" pieces recorded at Benteng Tua compared to most other sites. Hence it could partly reflect SSPHAP's emphasis on surveying zones under occupation, rather than associated with burials.

But if so, then the steep drop in Benteng Tua's 19th century tradewares, which essentially reflects a low share of European pieces, strongly implies the site was then partly abandoned. Gowa negotiated comparatively peaceful terms with the Dutch based in Fort Rotterdam no earlier than the 19th century (Patunru, 1983). Certainly this situation would have finally made Benteng Tua's walls redundant, and may lie at the basis of Benteng Tua's reputation as a predominantly sacral centre.

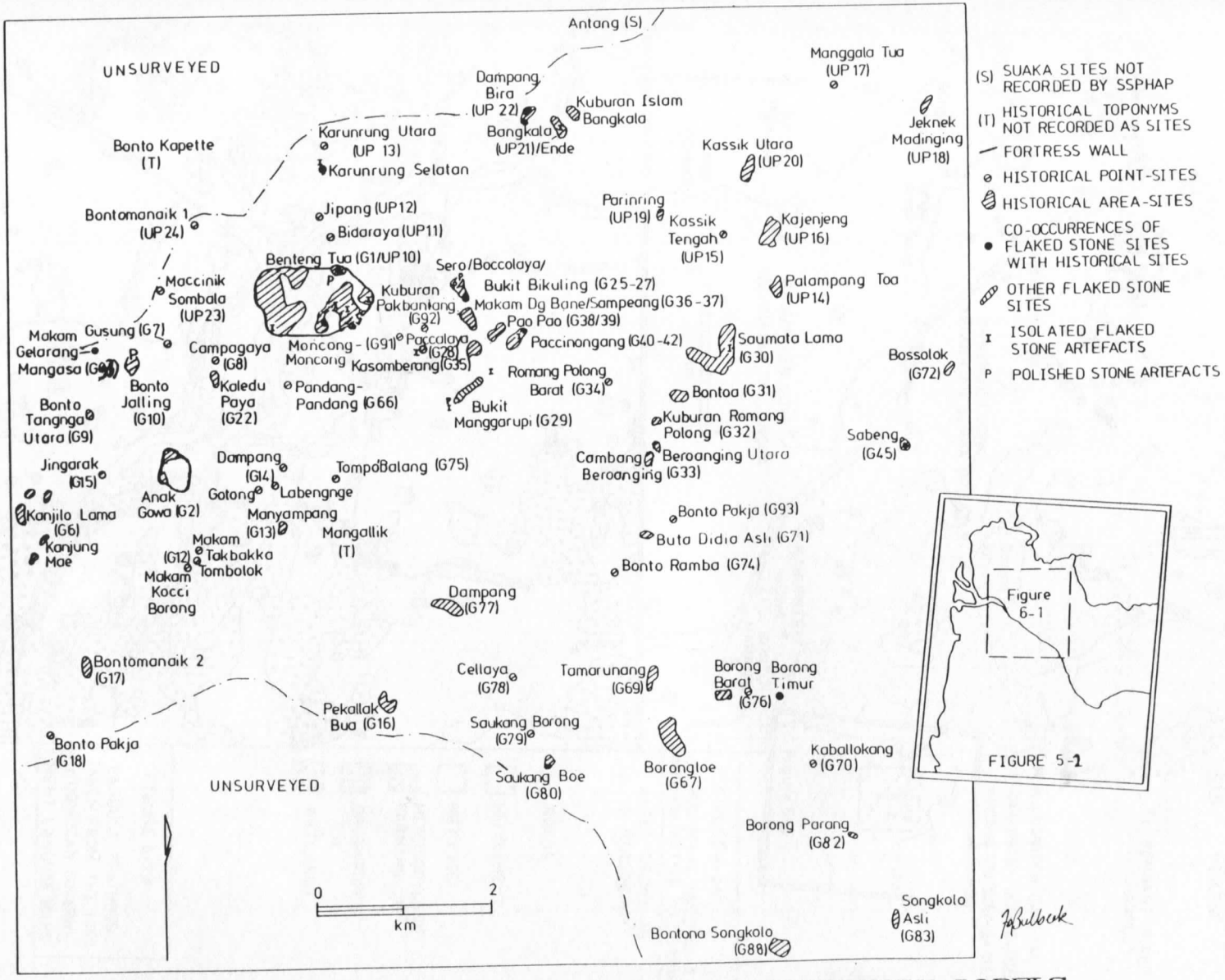


FIGURE 6-1. SITES AS IDENTIFIED WITH FIELDWORK LABELS ALONG THE MIDDLE JEKNEKBERANG

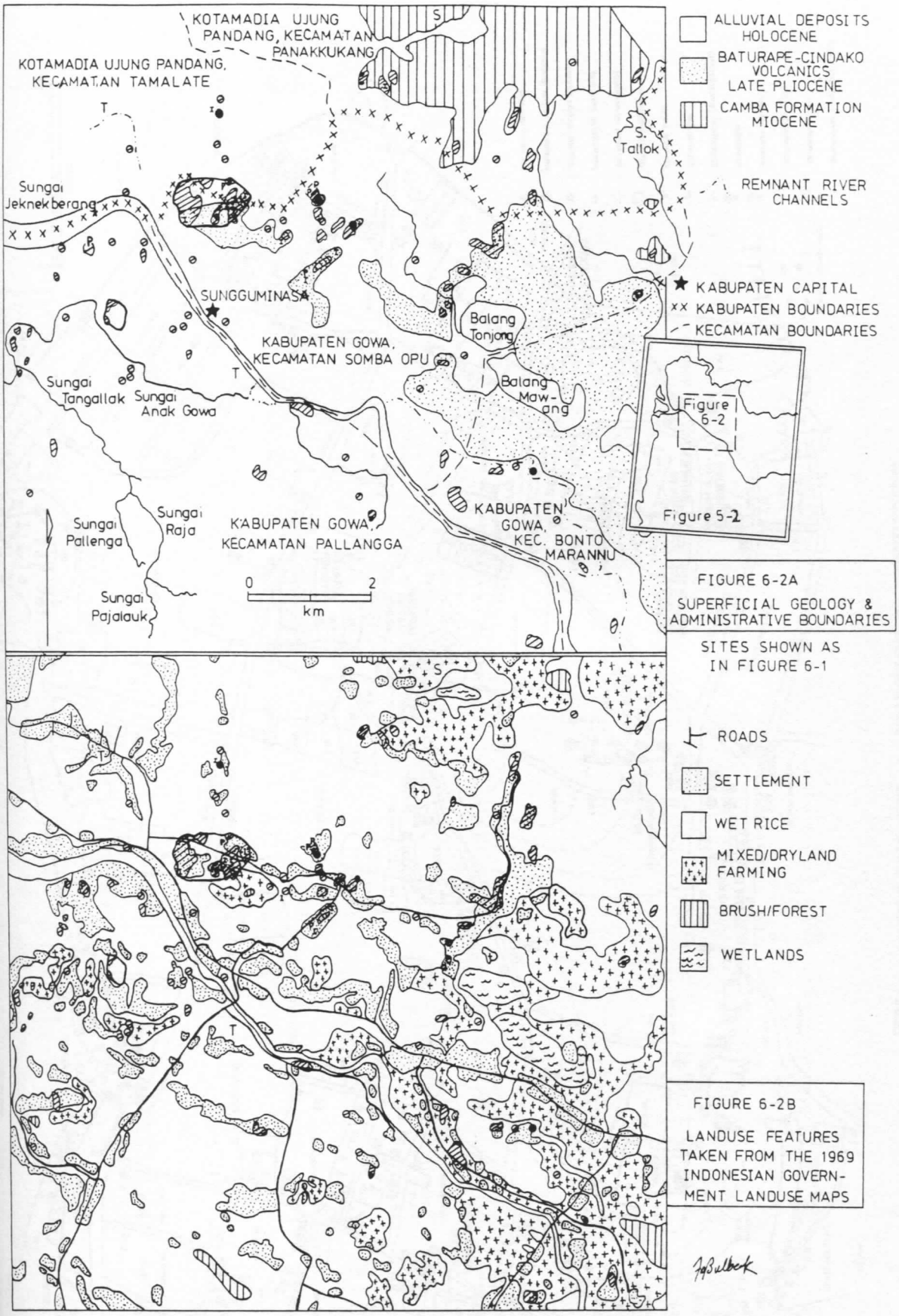


FIGURE 6-2. SITES ALONG THE MIDDLE JEKNEKBERANG IN RELATION TO TOPOGRAPHIC FEATURES

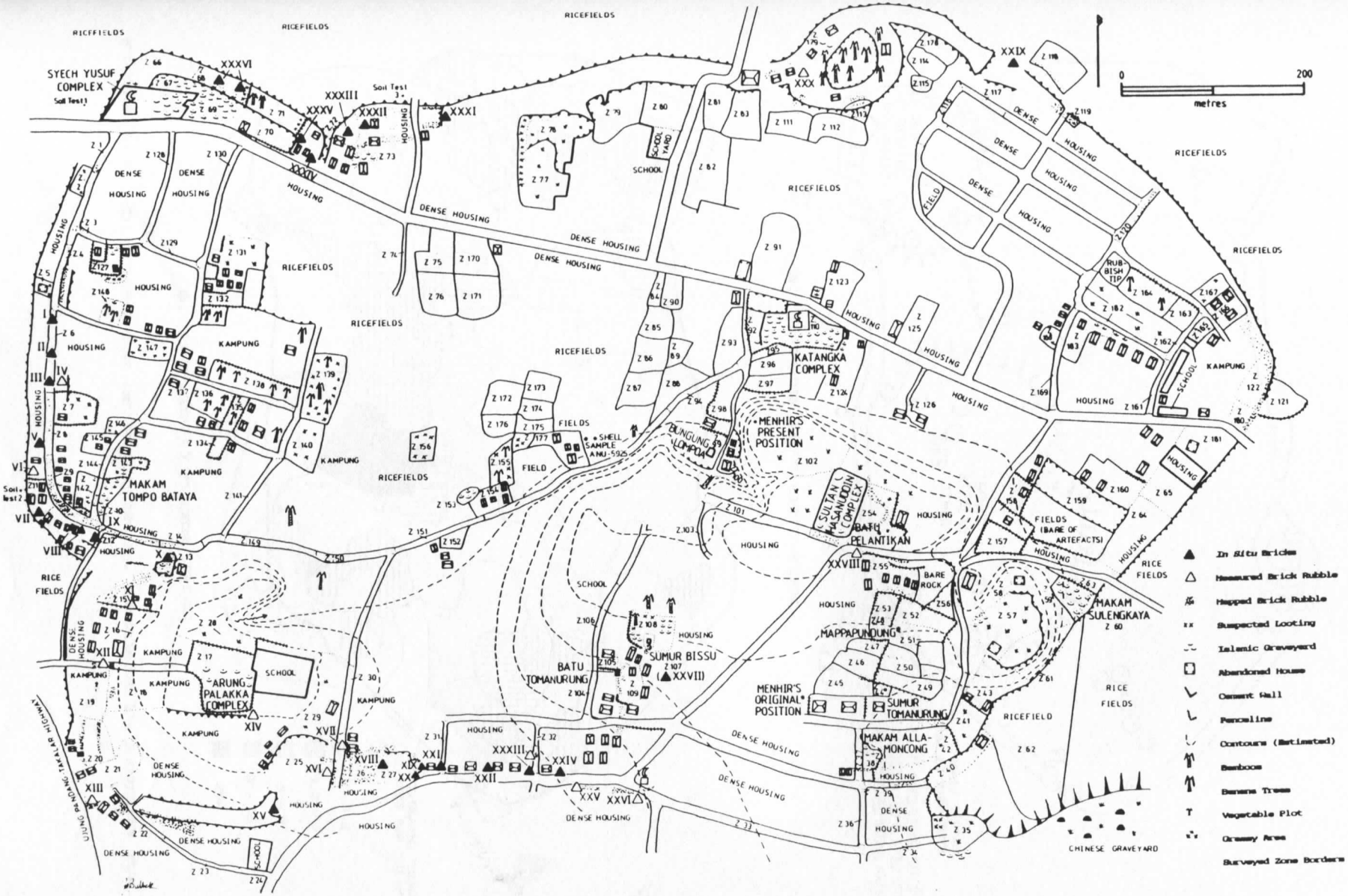
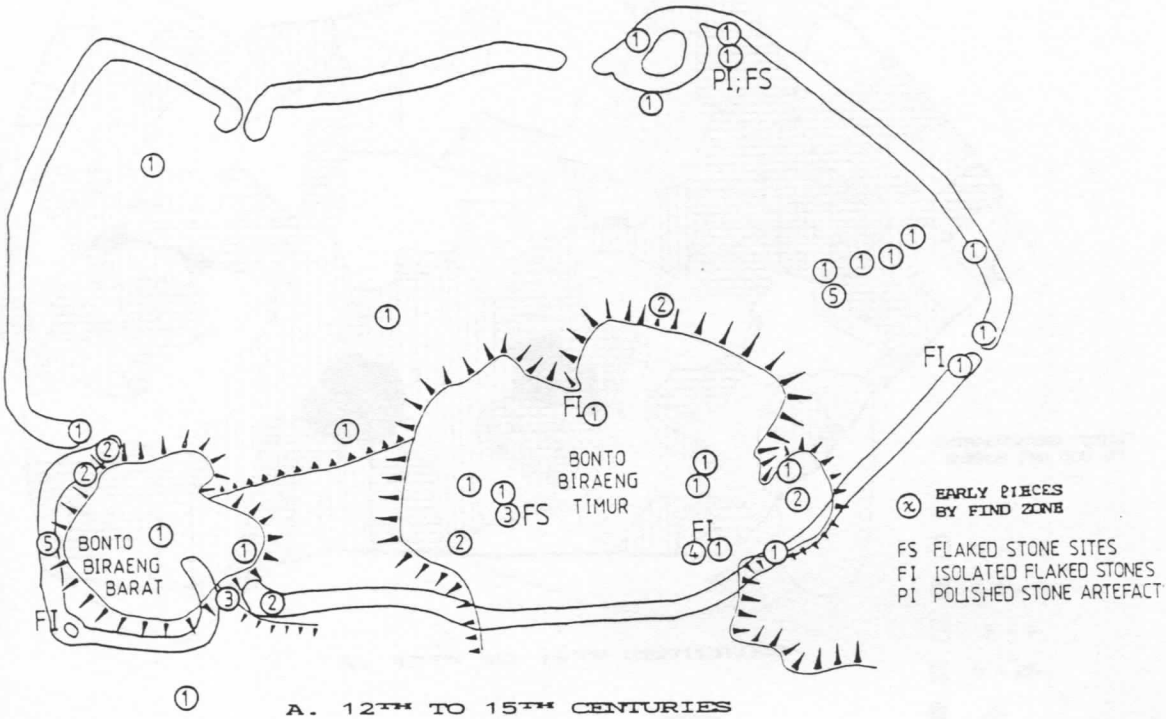
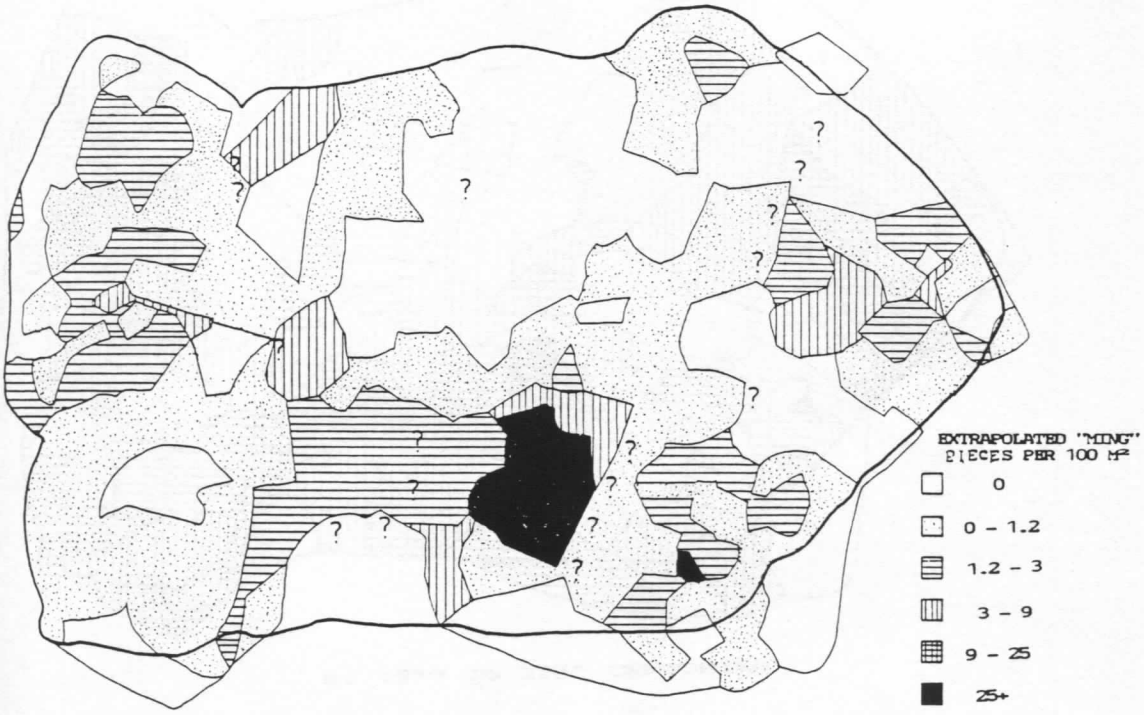


FIGURE 6-3. BENTENG KALE GOWA - ARCHAEOLOGICAL DOCUMENTATION



A. 12TH TO 15TH CENTURIES



B. 15TH TO 17TH CENTURIES

FIGURE 6-4. DISTRIBUTION OF PRECOLONIAL SHERDAGE IN BENTENG TUA

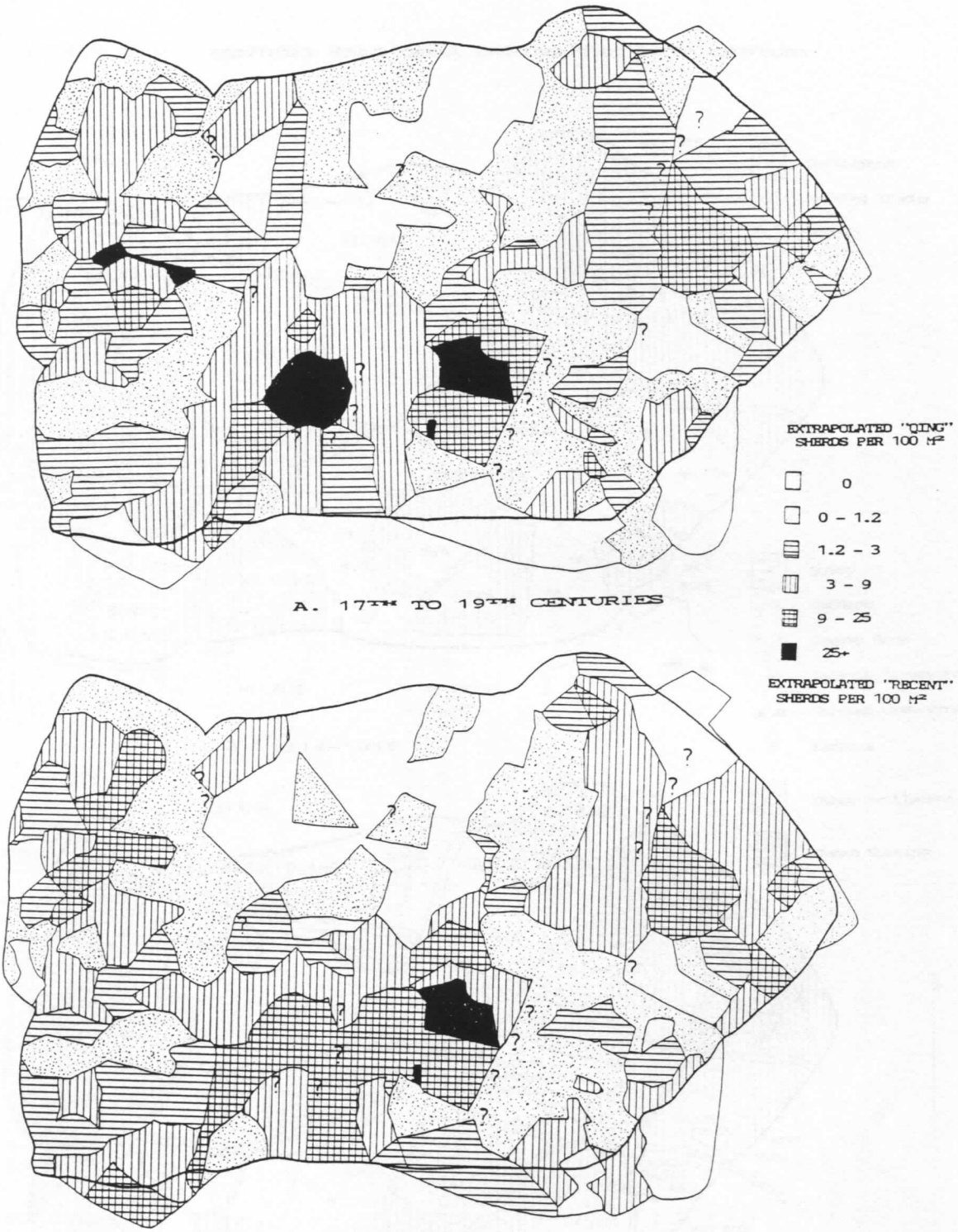
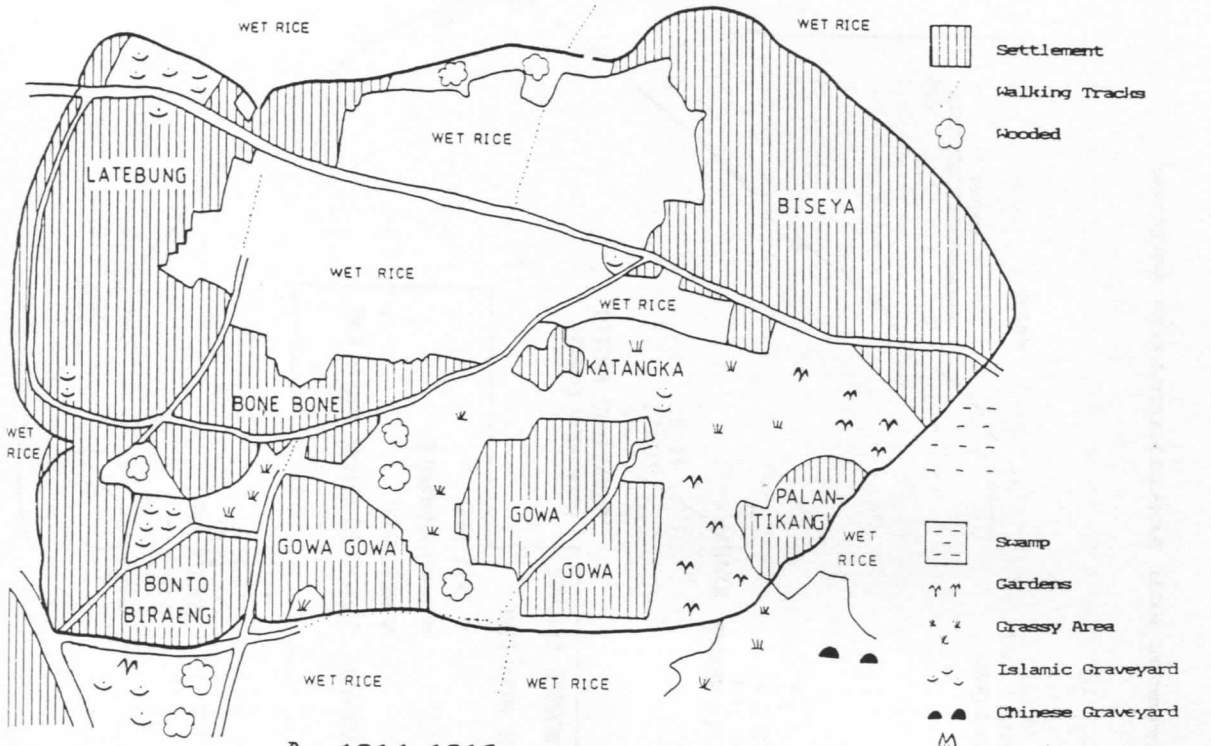
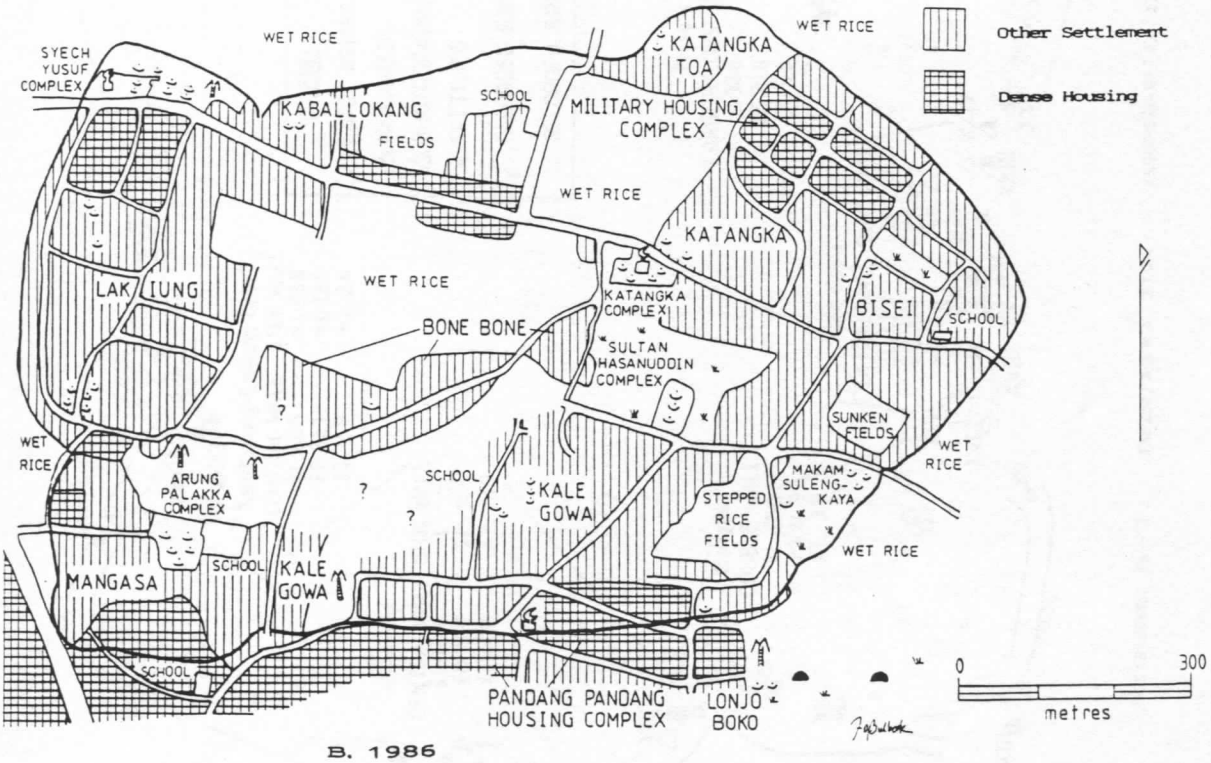


FIGURE 6-5. DISTRIBUTION OF POSTCOLONIAL SHERDAGE IN BENTENG TUA

FIGURE 6-6. BENTENG KALE GOWA DURING THE 20TH CENTURY



A. 1914-1916



B. 1986

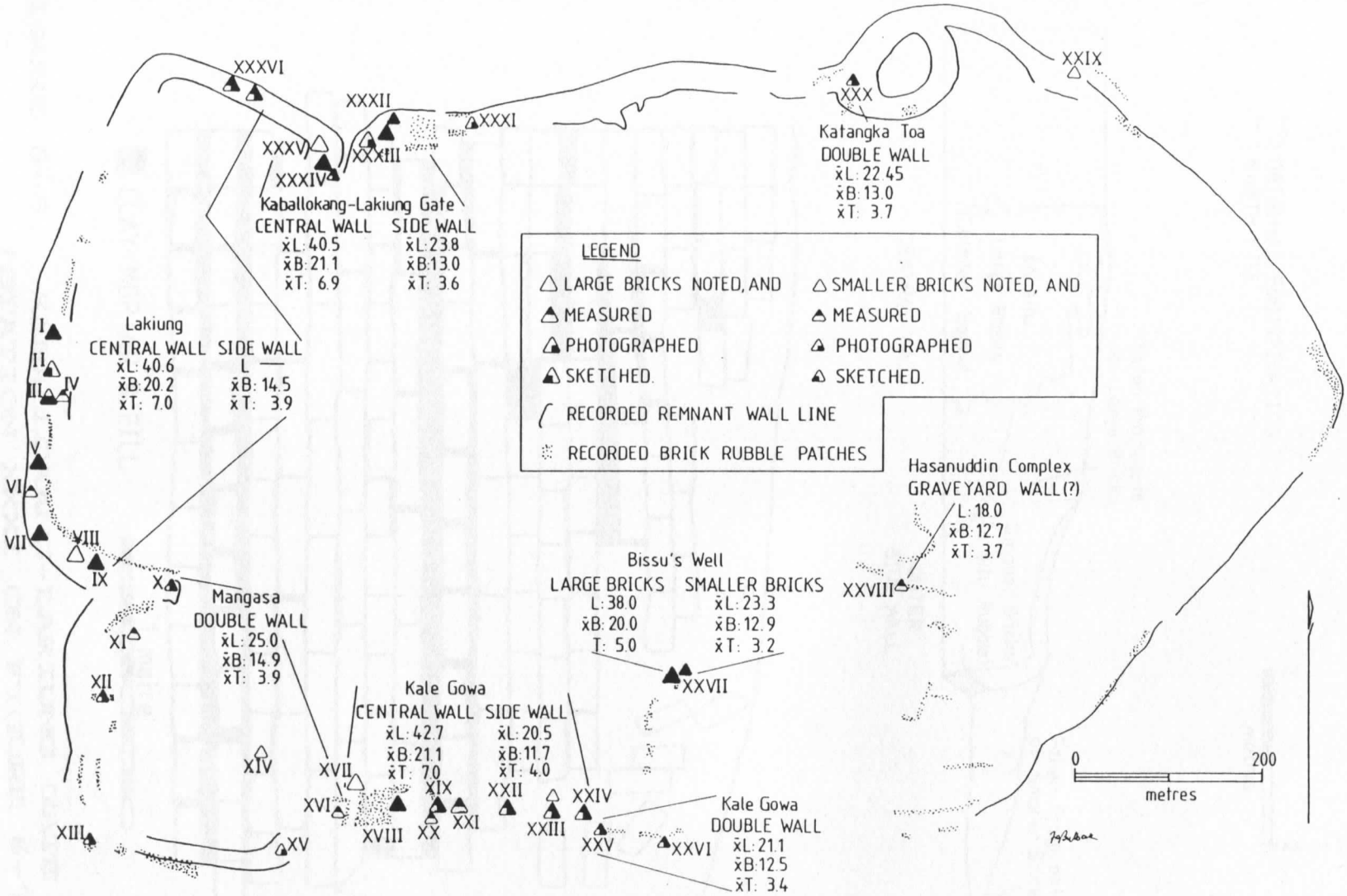
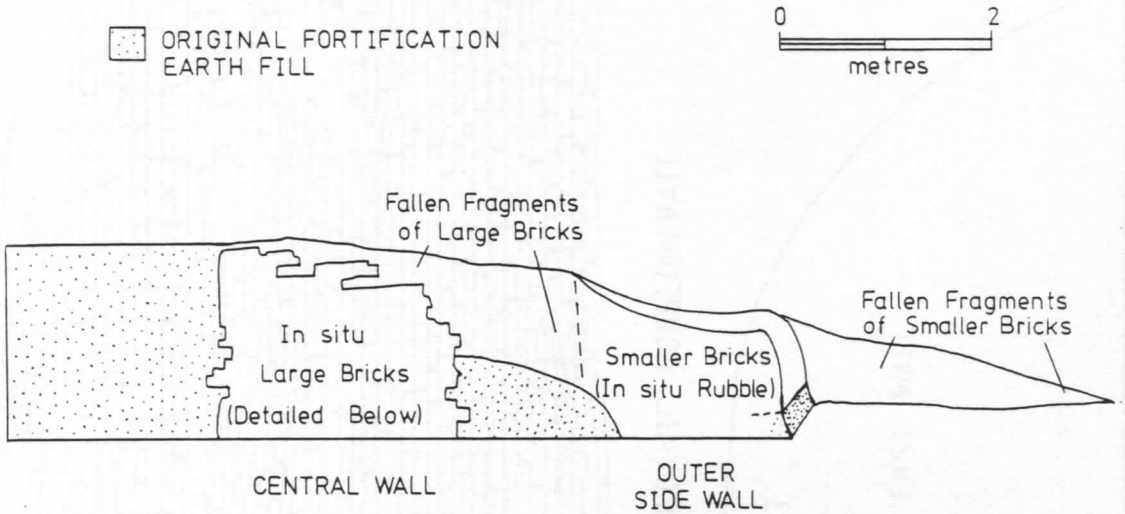


FIGURE 6-7. BENTENG TUA - SSPHAP'S DATABASE FOR FORTIFICATION BRICKS



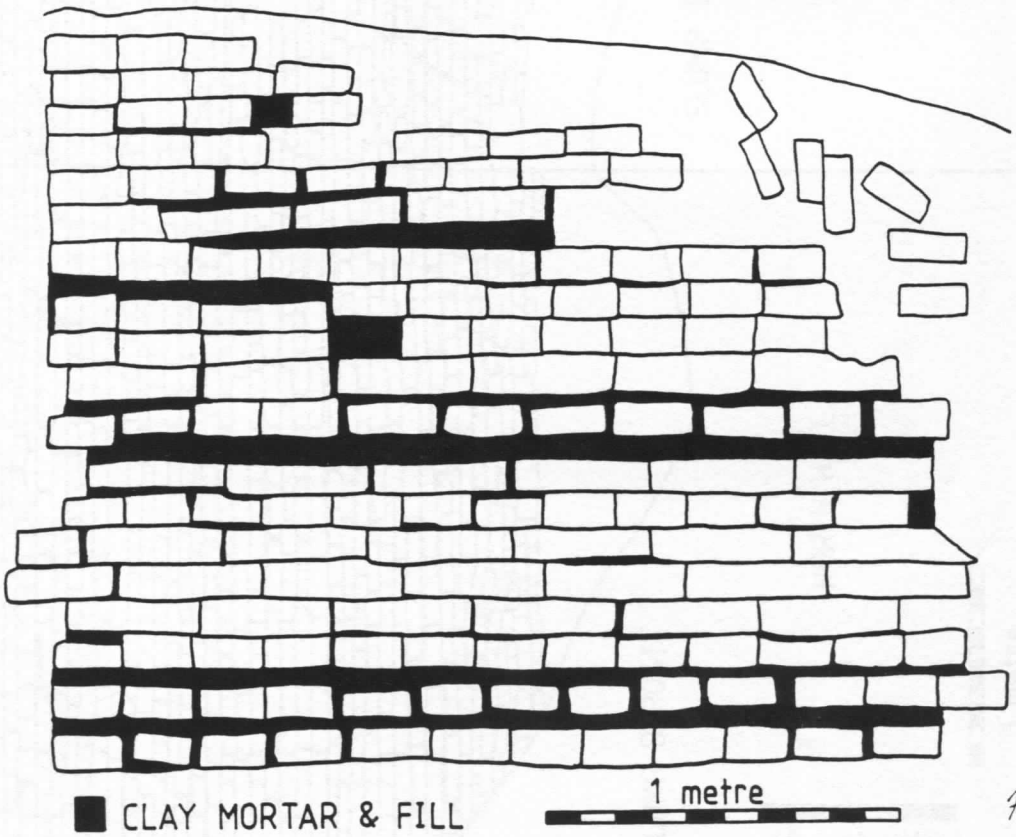


FIGURE 6-8. KABALLOKANG-LAKIUNG GATE SECTION
(STATION XXXI ON FIGURE 6-7)

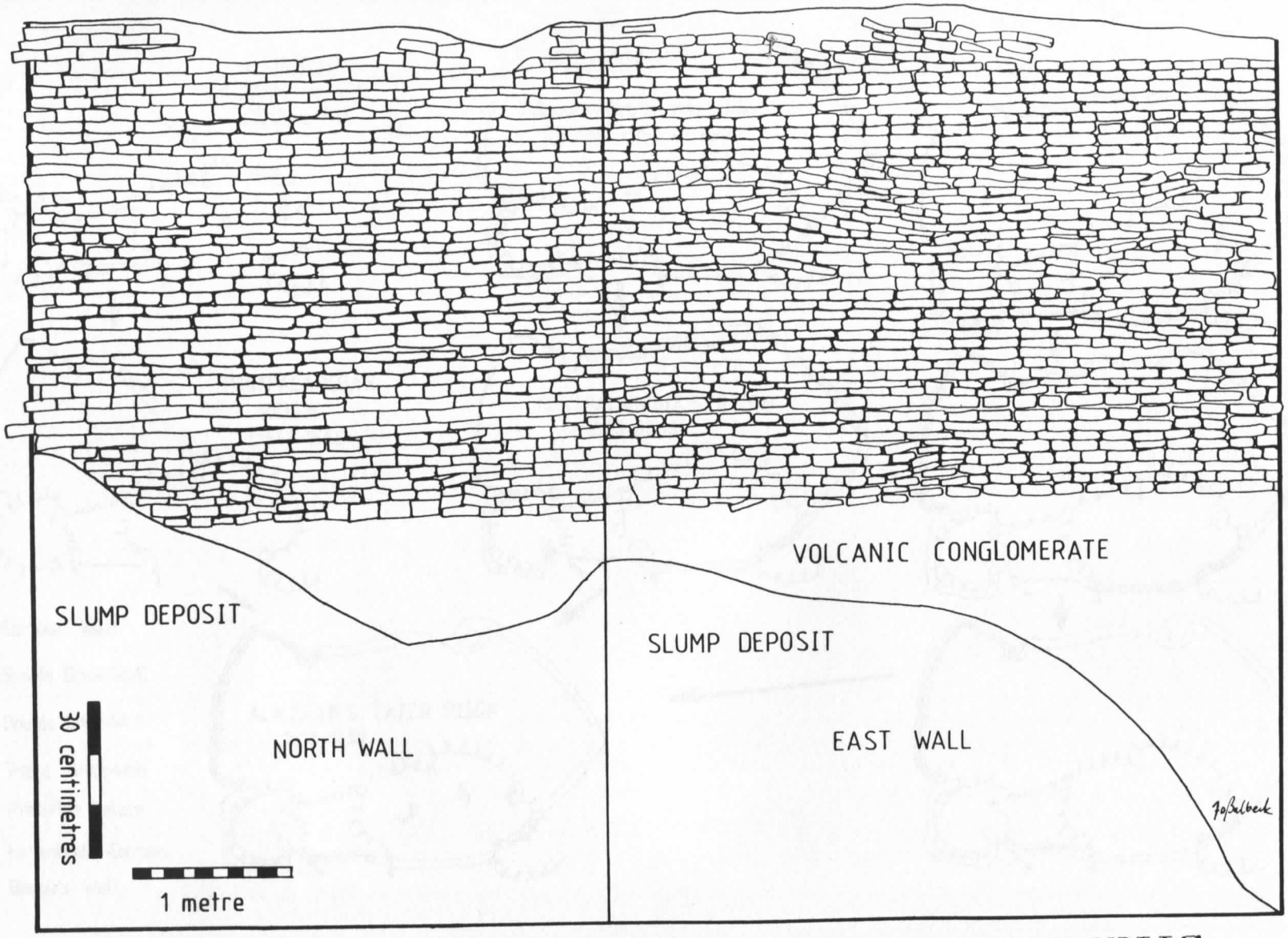


FIGURE 6-9. BISSU'S WELL - NORTH AND EAST WALLS

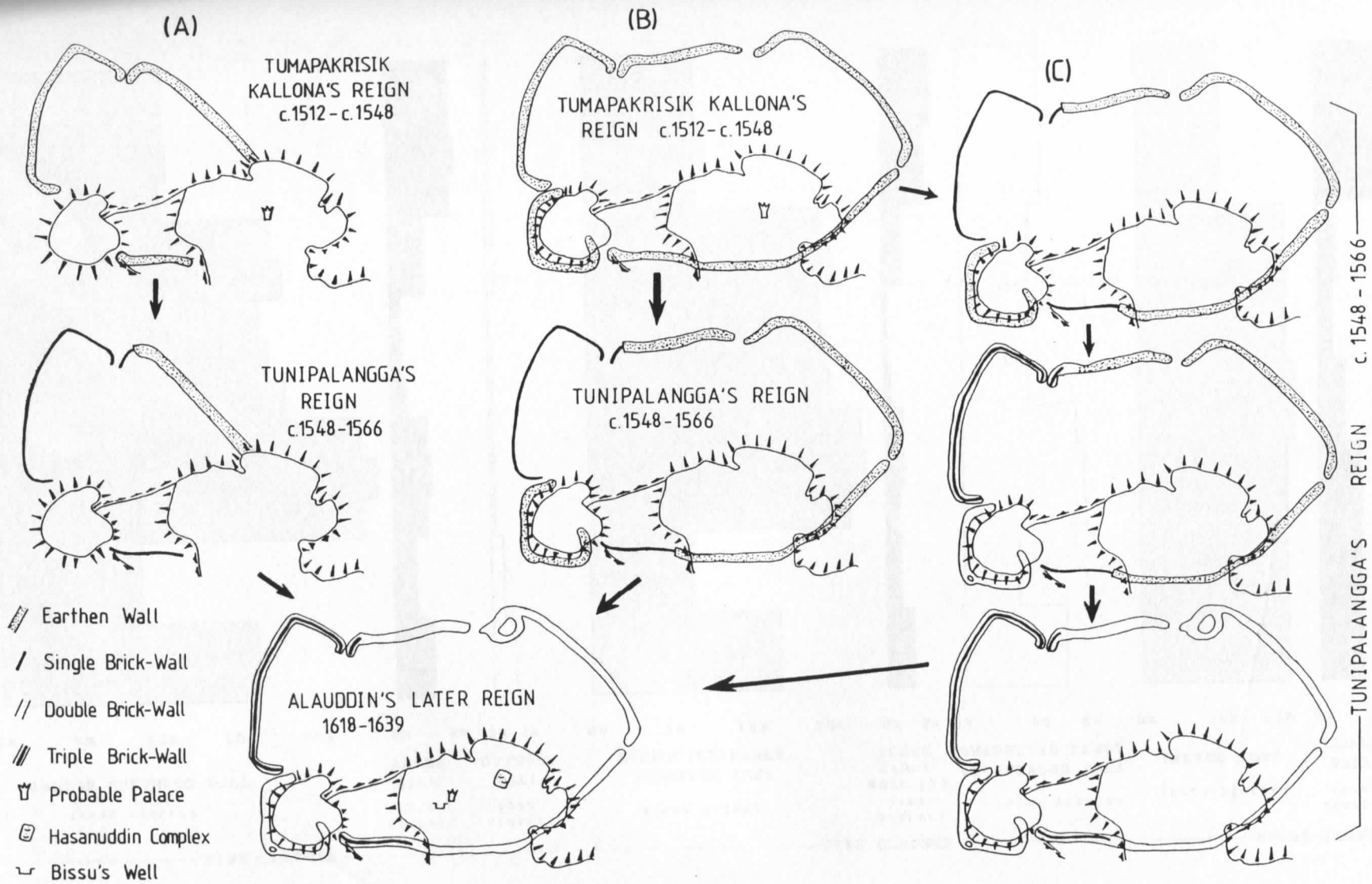


FIGURE 6-10. THREE POSSIBLE CONSTRUCTION HISTORIES OF BENTENG TUA

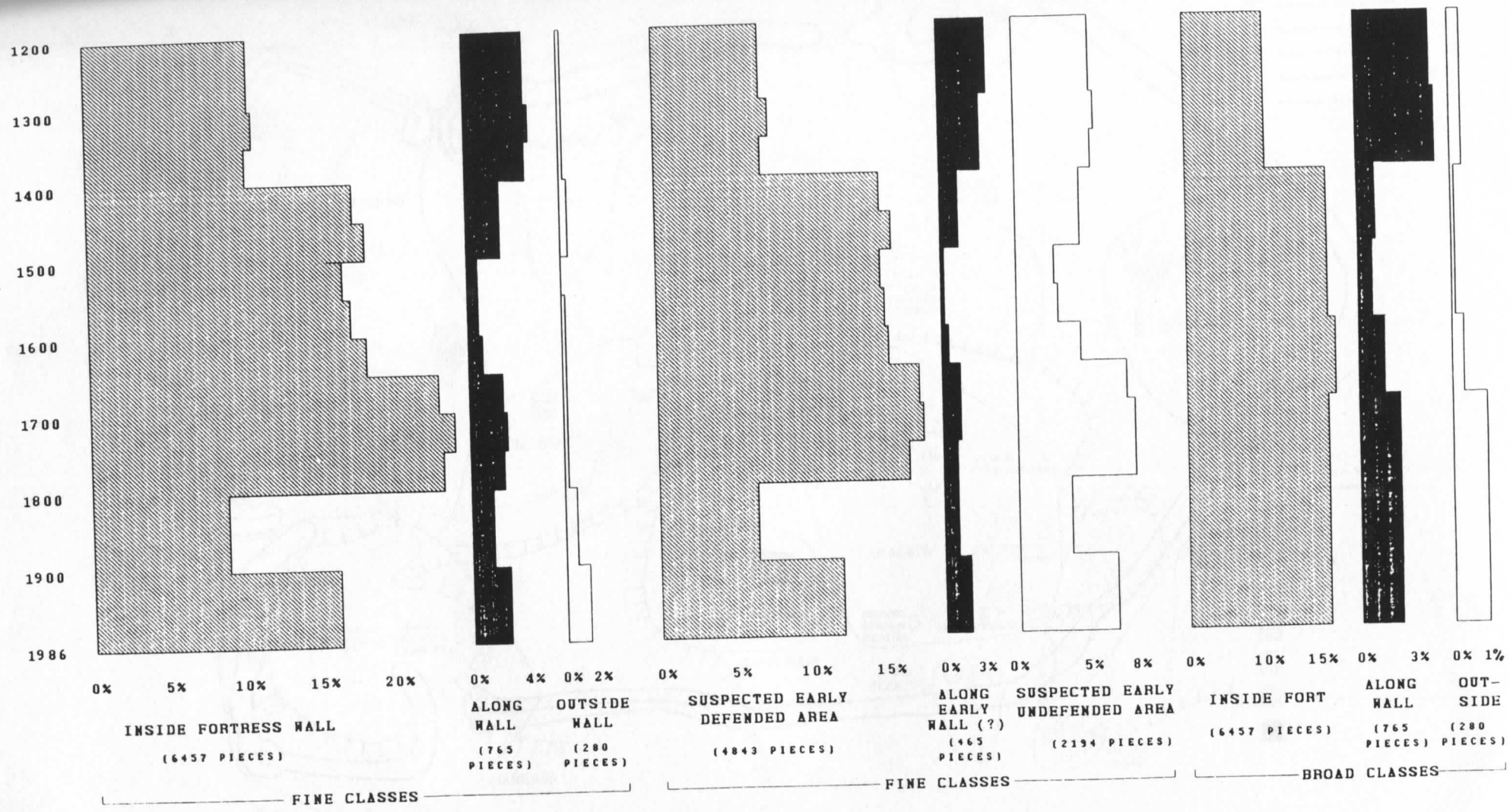


FIGURE 6-11. STANDARDISED CHRONOLOGICAL HISTOGRAMS – DATING BENTENG TUA

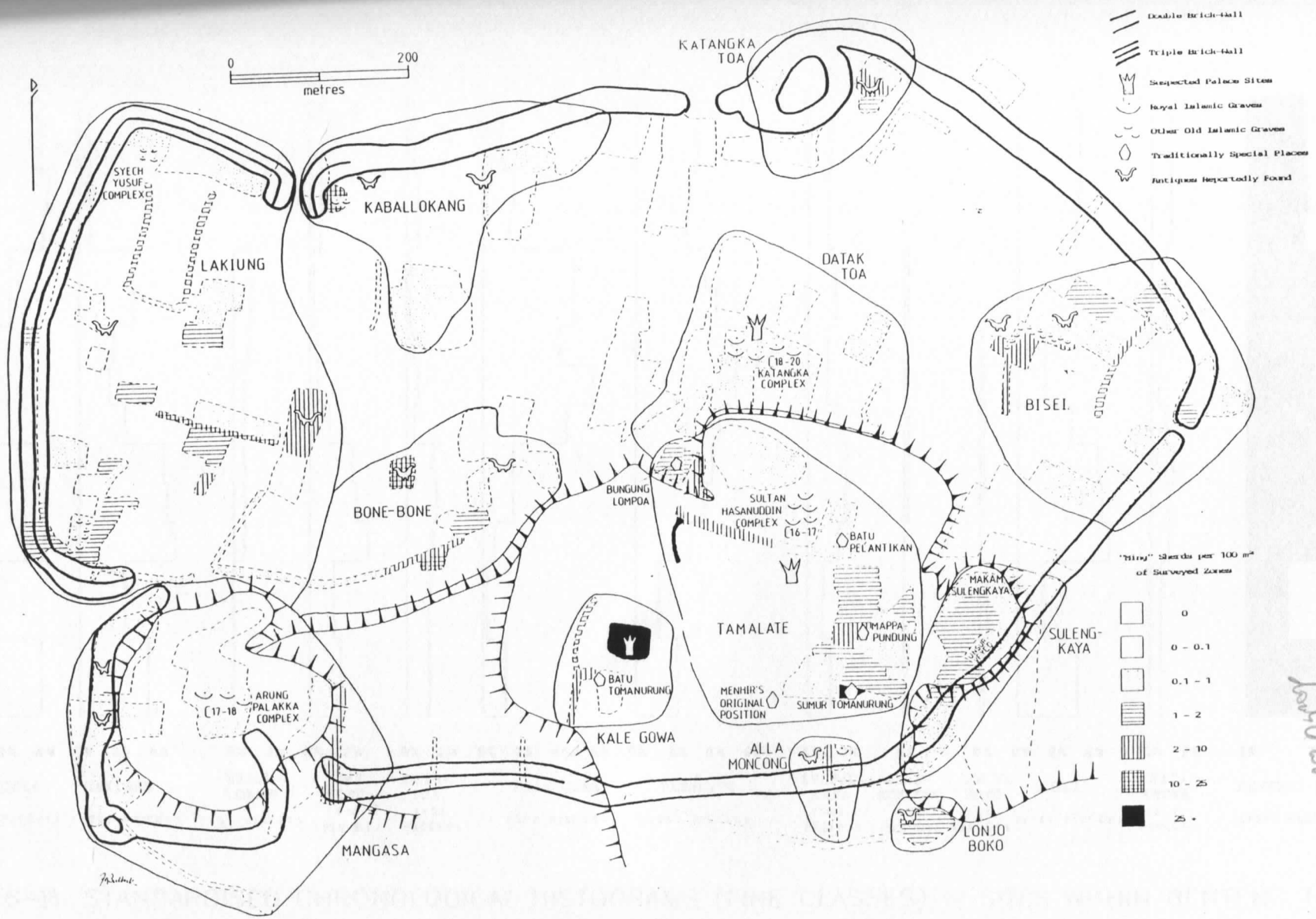


FIGURE 6-12. RECONSTRUCTION OF BENTENG KALE GOWA DURING THE MING PERIOD - FORTRESS WALLS AND SITE AREAS

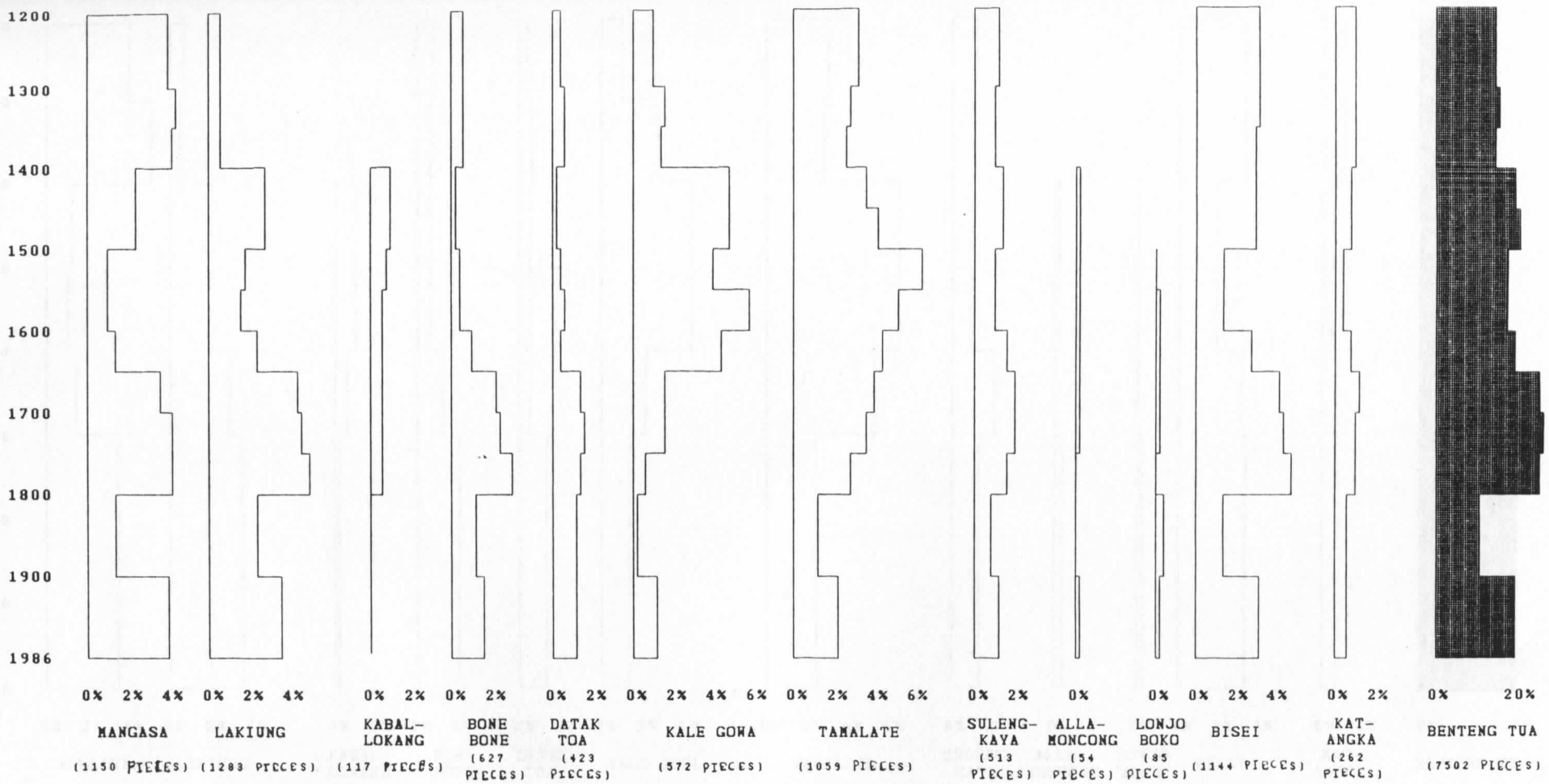


FIGURE 6–13. STANDARDISED CHRONOLOGICAL HISTOGRAMS (FINE CLASSES) – SITES WITHIN BENTENG TUA

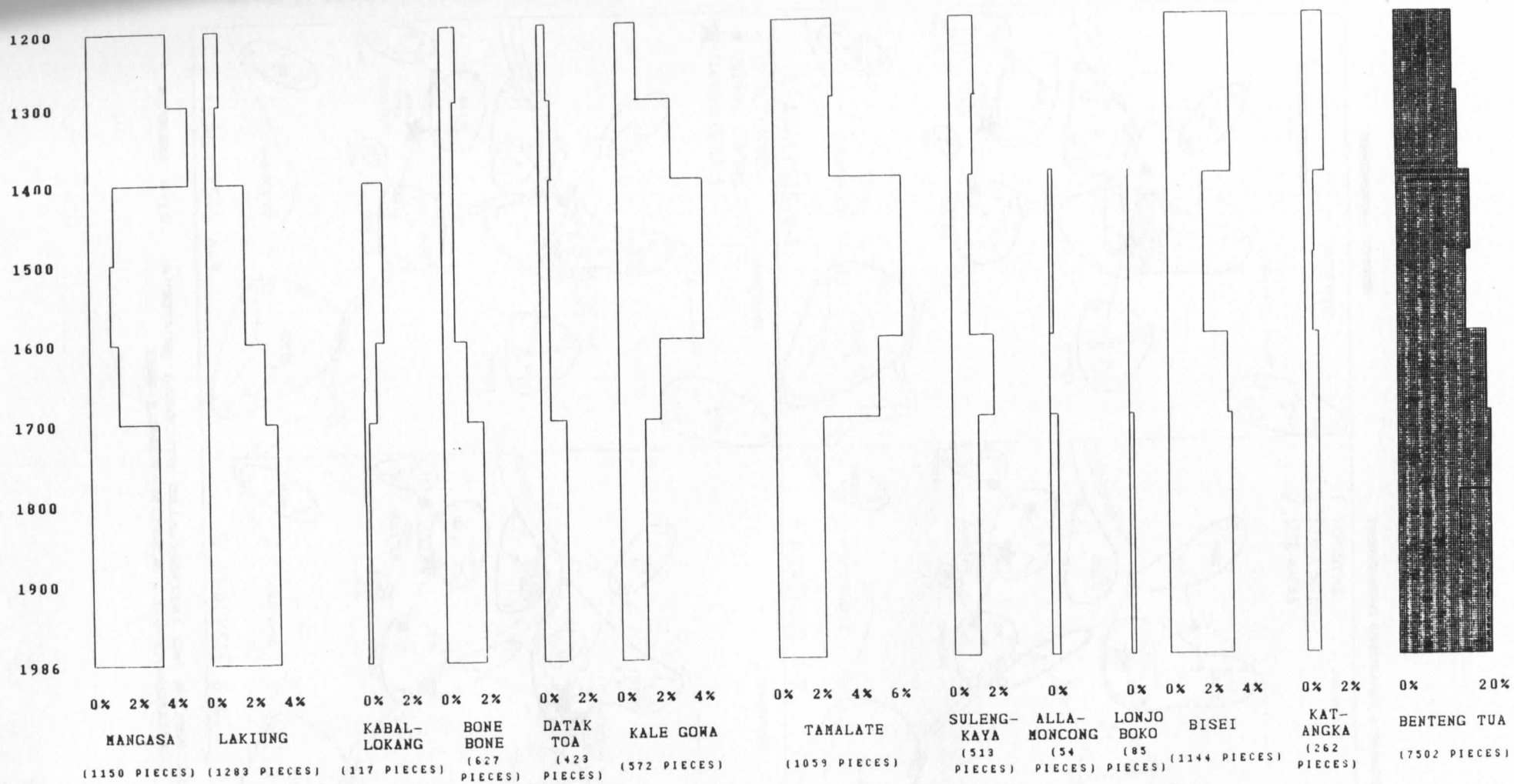


FIGURE 6-14. STANDARDISED CHRONOLOGICAL HISTOGRAMS (BROAD CLASSES) - SITES WITHIN BENTENG TUA

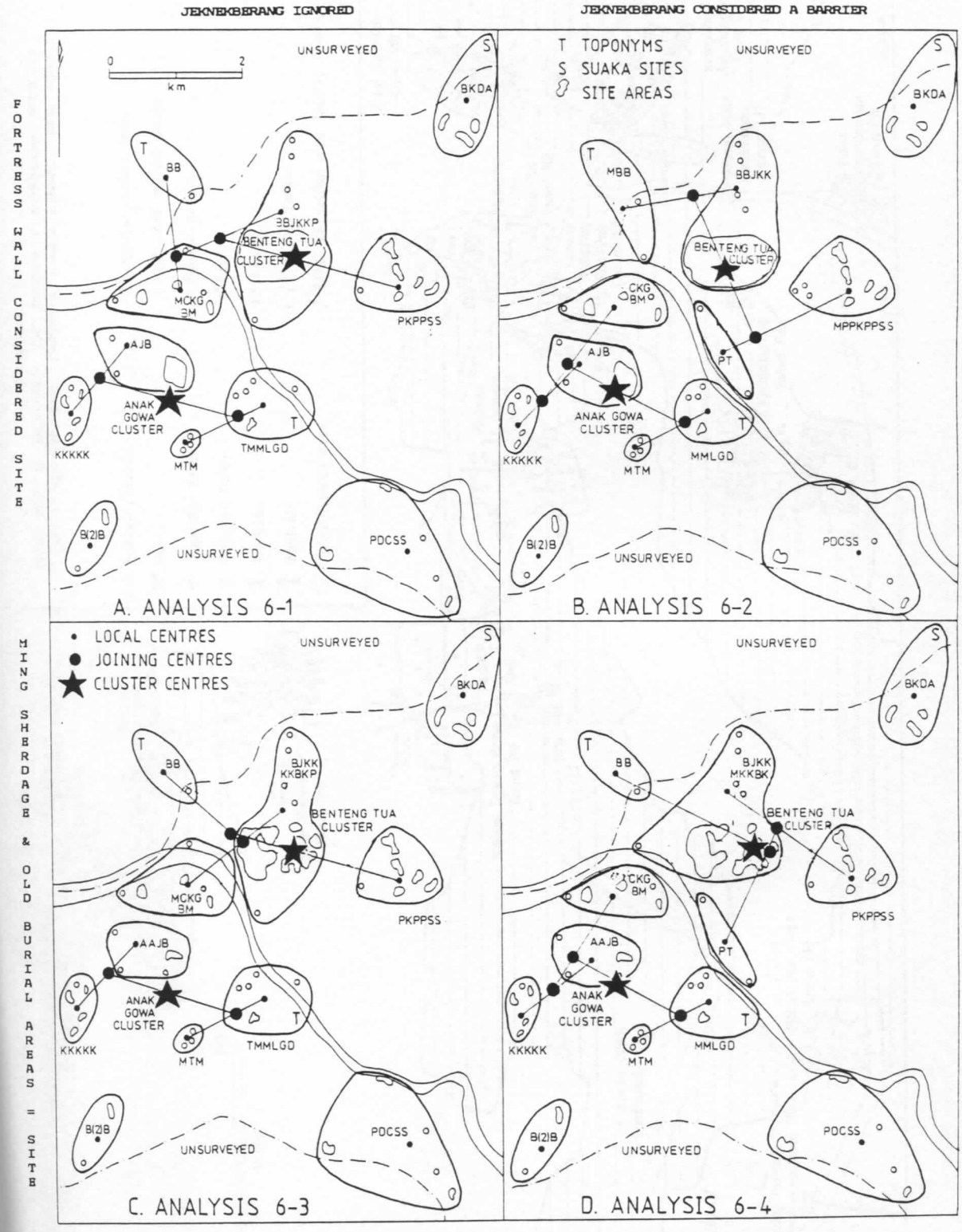


FIGURE 6-15. AVERAGE LINKAGE CLUSTERING OF SITES ALONG THE LOWER-MIDDLE JEKNEKBERANG

Photo 6-1.
One of the two wells at Bone-Bone from which a sample of estuarine shells, Sample Number Gowa 1-8, was obtained, returning a radiocarbon date of 5800 ± 90 BP (ANU-5925) which corrects to around 4300 BP.

Photo 6-2.
Station XIII of Mangasa's double brick-wall, part of a localised, curved protuberance in the outer wall which appears to represent a small bastion. Also the findspot of the blade core specimen G-1-21-1.

Photo 6-3.
Station XXXI in Kaballokang, showing double brick-wall in contrast to the triple brick-wall at Station XXXII. Most of the baulk is earth, and the ranging pole shows the location of the inner brick wall.

Photo 6-4.
Some of the seashells collected from the well at Bone-Bone and submitted for radiocarbon dating.
I identified the lighter stromb as *Strombus canarium* and the darker stromb as possibly *Strombus dentatus*.

Photo 6-5.
Station XVIII immediately east of the Mangasa-Kale Gowa gate, the best standing profile of central brick-wall. The height of the unrazed baulk, two metres, reflects the depth of the surrounding excavated area, as shown by the large tree which took root on the outside remnants of the former central wall.

Photo 6-6.
Station XVI immediately west of the Mangasa-Kale Gowa gate, showing inner and outer walls of smaller bricks separated by less than a metre of earth fill. Away from the Mangasa segment the inner and outer walls were further apart, especially where central brick-wall intervened.

13 14 15 16 17 18 19

Photo 6-7.

Makam Kale Kundrulu, just inside the Lakiung-Mangasa gate. Three headstones (one obscured from view) and two footstones in an old cement *nisan*-box. The platform bricks, attributed by the Mangasa inhabitants to the first Dutch brickworks in Makassar, have the dimensions of modern bricks (E.1.1). Associated with five other marked graves, two ascribed to Kale Kundrulu's descendants, all on top of the collapsed wall rubble and so dating to the 18th century or later.

The platform and *nisan*-box would be renovations while the head and footstones could date back to the 17th century. Not impossibly the grave of the regent Kg Karunrung (1631-1685).

Photo 6-8.

Zone 44, Tamalate. The "Tomanurung's well" is the hole at front-left, and behind it is the channel shown in Photo 6-12.

Photo 6-9.

The masoned menhir of soft volcanic stone, around two metres long, now lain on its side just northwest of the Sultan Hasanuddin complex. It is meant to mark the former location of a well called Bungung Barania ("Well of the Brave").

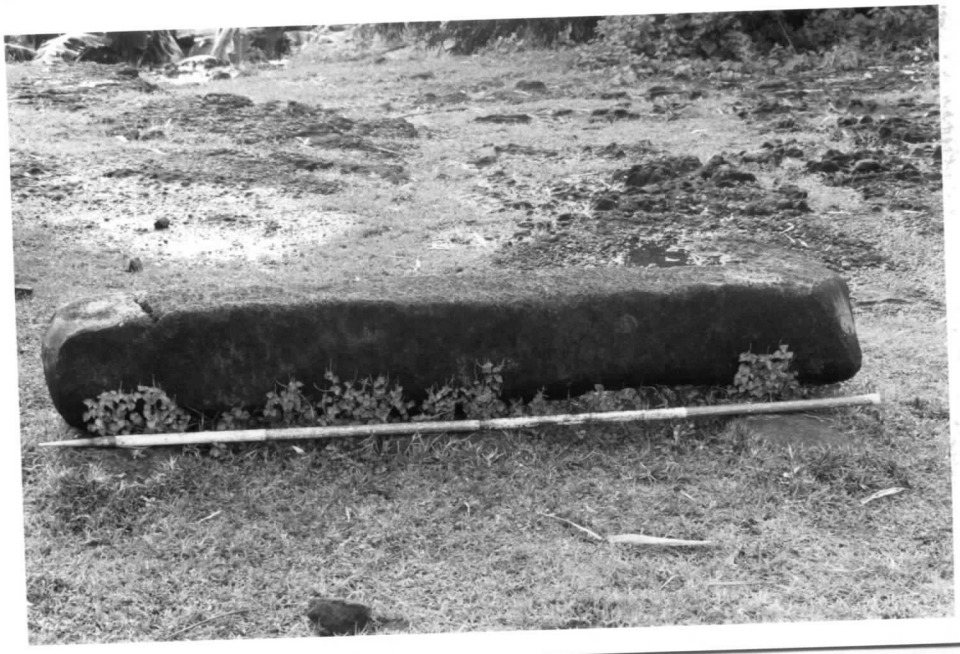


Photo 6-10.
The *kobang* tomb of Sultan Sahaduddin (Arung Palakka) and his main wife Daeng Talele. The style is unusual for the height of the walls beyond the junction with the cupola's base. One of the tombs restored by the Dutch Oudheidkundige Dienst (1949). Arung Palakka complex, Mangasa; Suaka Site No. 24. The top of another *kobang* tomb, here tentatively ascribed to Sultan Abdullah, can be seen at rear right.

Photo 6-11.
The outcrop of volcanic stone reportedly called Mappapundung, among the stepped sawah fields on the southwestern slope below the Sultan Hasanuddin complex, Tamalate.

Photo 6-12.
Zone 44 in Tamalate in the early wet season, showing the peculiar channel within this exposure of soft volcanic rock.

Photo 6-13.
Kompleks Makam Sultan Hasanuddin, Suaka Site No. 253, showing the 17th century royal tombs of Sultan Malikussaid (left) and Sultan Hasanuddin (right). The family, which includes descendants from Hasanuddin, has come to his tomb carry out a hair-cutting ceremony on the baby carried by the woman with a scarf on her head.

Photo 6-14.
The *kobang* tomb of Tunibatta who had been beheaded in 1566, Sultan Hasanuddin complex, Tamalate.
The white plastered surface on the masonry was present after the tomb had been restored by the Dutch Oudheidkundige Dienst and would even appear to have been part of the restoration (see Oudheidkundige Dienst, 1949:7, Figure 6).

Photo 6-15.
The two masonry markers inside Tunibatta's *kobang*, of which that on the right is supposed to mark Tunibatta's grave. The north-south orientation of the marker to a pre-Islamic grave might represent post-Islamic interpretation. The original graves might have been oriented east-west between what now appear as the two headstones and the two footstones. (Note the cement-plastered surface inside the tomb too.)

Photo 6-16.
The *Batu Tomanurung* or "Tomanurung's stones", inside the small shed which shelters them (Kale Gowa). Note the evidence of devotions.

Photo 6-17.
The Katangka mosque at Datak Toa in the centre of Benteng Tua. Supposedly the earliest Makassar mosque, the present study would support a date of first construction in the terminal 17th or the 18th century.

Photo 6-18.
Bungung Lompoa or the "Great Well" behind the Katangka complex, Suaka Site No. 22. Note the masoned walls inside the cement enclosure which may have been inspired by the masonry walls built at Fort Rotterdam by the Dutch.

Photo 6-19.
Top-left corner: G.1.53.8, sherd from a Jizhou tempayan with painted iron decorations beneath the glaze, Tamalate.

(Also on top row: S.10.18.19 and S.10.5.2 (right): early monochrome sherds from Tinco Tua, Soppeng.)

(Bottom row: G.54.1.2A (left) and G.54.1.2B: two sherds from a plate with remnant overglaze decorations, here dated to the 13th-14th centuries, Palacini Tua, near Pattallassang.)

Photo 6-20.
Kompleks Makam Katangka, Suaka Site No. 19, showing the *kobang* tombs to the west of Katangka mosque, Datak Toa. Note the *famille rose* jar (*balubu*), dating to China's Qing Dynasty, on top of the right tomb.

Photo 6-21.
Broken plate with classically Swatow BW decorations, "Phoenix Standing in a Garden 1" (Harrisson, 1979:64), donated to SSPHAP by a resident of Katangka Toa.

6.I.53.8

Photos 6-22 to 6-24.
Tradeware pieces as reconstructible from sherds donated to SSPHAP by the inhabitants at Kaballokang.
Top: G.1.133.1, a 16th century Ming BW plate.
Middle: G.1.133.2-4, "Ming Swatow" BW plates.
Bottom: G.1.133.5-10, "Ming Swatow" BW bowls.

Q88•MEI'87 6B

Q88•MEI'87 6B

Photo 6-25.
Kompleks Makam Lakiung (Syech Yusuf Complex), Suaka Site No. 17, showing the *kobang* tombs of Syech Yusuf and his wife Daeng Misanga photographed from the northeast. Note the stoneware jar which crowns Syech Yusuf's tomb.

Photo 6-26.
The undecorated example of the pair of slabbed masonry grave markers (oriented 20° from north) in the small graveyard at Kaballokang. Here dated as probably 17th century.

Photo 6-27.
The outer ring of the bastion at Katangka Toa, with its form reflected by the curved shape of the garden plot.