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The Kingdom of Kush. Urban defences and military installations

by Derek A. Welsby[1]

When the Romans took control of Egypt in 30 BC they came in direct contact on their southern frontier with the Kingdom of Kush, the longest established state of any that they faced. Kush had been a major power at least since the mid 8th century BC at a time when Rome itself consisted of little more than a group of huts on the Palatine. In the later 8th century BC the Kings of Kush ruled an empire stretching from Central Sudan to the borders of Palestine controlling Egypt as pharaohs of what became known as the 25th Dynasty. Forced to withdraw from Egypt in the face of Assyrian aggression by the mid 7th century BC, they retreated south of the First Cataract of the Nile where they maintained control of the river valley far upstream of the confluence of the White and Blue Niles at modern-day Khartoum, into the 4th century AD (Fig. 1).

The importance of the army in the maintenance of the Kushite state over this vast period must have been considerable yet very little is known of the army and the measures taken by the Kushites to maintain the territorial integrity of their state. In this article an examination will be made of a number of installations which may have been constructed by the army together with an assessment of the significance of the very limited evidence for the provision of urban defences.

The military threat to Kush

We have a number of reports of the Kushites suffering at the hands of invaders, the threat of large scale invasion mainly coming from the north. There were many periods of friction in the border regions of the Dodecaschoenus and Triacontaschoenus and two major incursions under Psametticus II in 594 BC and by the Romans in 24 BC (Welsby 2004). A new threat may have materialised towards the end of the Kushite state in the 4th century AD with the rise of Aksum and the possible invasion of the region around Meroe by the army of Aezanes (cf. Behrens 1986; Török 1997a, 483-4).

Perhaps of more long-term concern were the low level raids mounted by the desert tribes on the fringes of the Nile Valley[2]. At least one of these incursions, during the reign of King Nastasen in the later 4th century BC, resulted in the looting of a temple at Kawa in the Dongola Reach and earlier Meroe itself, the main political centre, seems to have been under threat.

Urban defences

In the light of these external threats to the urban centres of the Kushite state the very sparse evidence for defences is noteworthy.

El-Kurru

At el-Kurru George Reisner found, but did not publish, a short section of wall, apparently stone faced with a rubble core described by him as ‘fort wall of poor masonry’. Only parts of two adjacent curtains and a ‘D’-shaped interval tower were noted, there is no scale on the sketch and no clear evidence for dating[3]. Reisner also discovered a wall of better construction at least 200m in length and with a simple gate opening closed by double doors (Kendall 1999, 48, fig. 17).

Dokki Gel

The New Kingdom temples at Dokki Gel near Kerma may have stood within a defended enclosure similar to that at Sesebi (Fairman 1938). These defences appear to have survived into the Kushite period when they were modified (Bonnet 2003, figs 10, 20). Whether their primary function was to delimit the *temenos* around the

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[2] For a summary of these see Welsby 1996, 60, with discussion in detail by Török 1997a.

[3] Kendall (1990, 10) considers that the defensive wall may be contemporary with the early Kushite burials on the site.

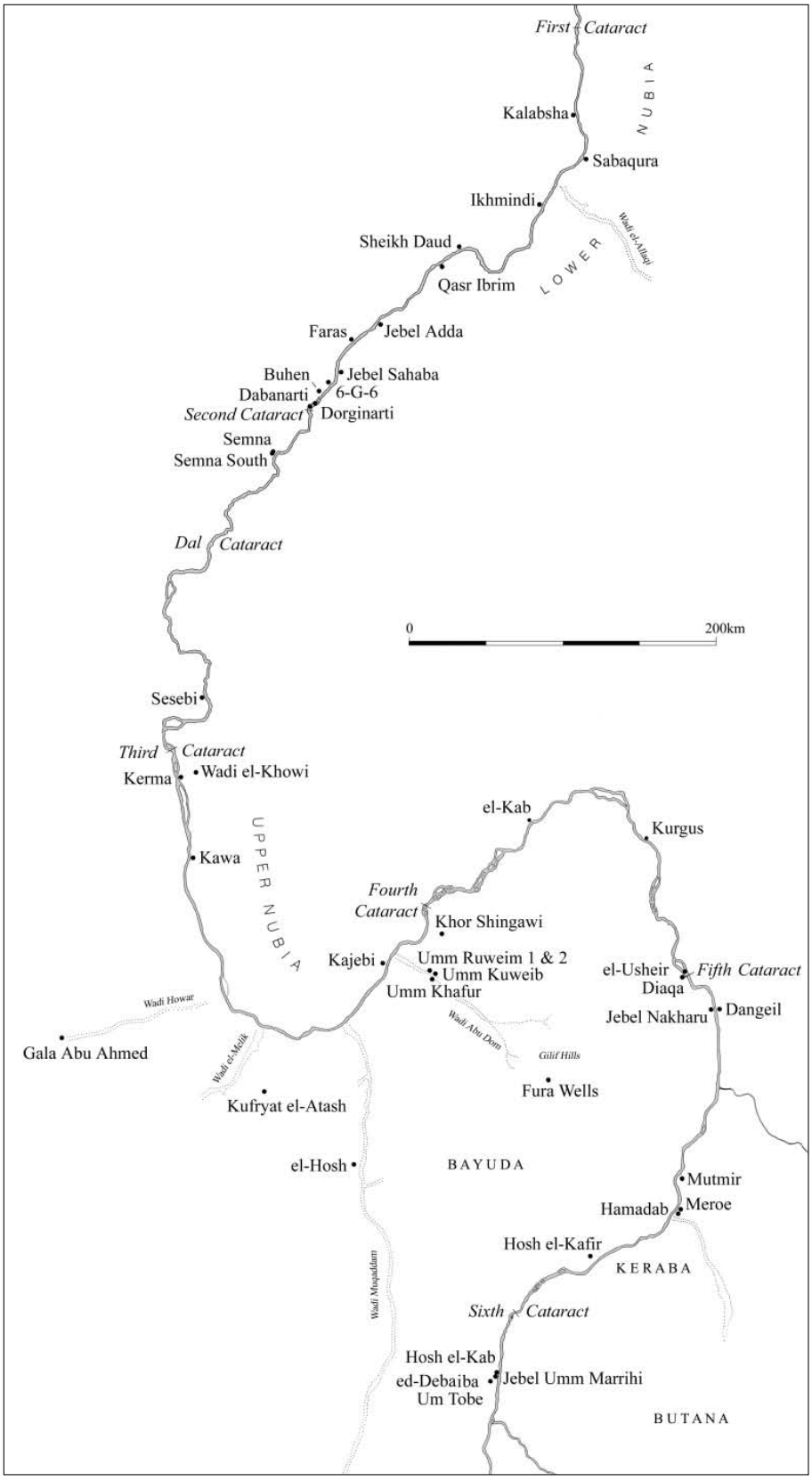

Fig. 1. The location of the sites mentioned in the text.

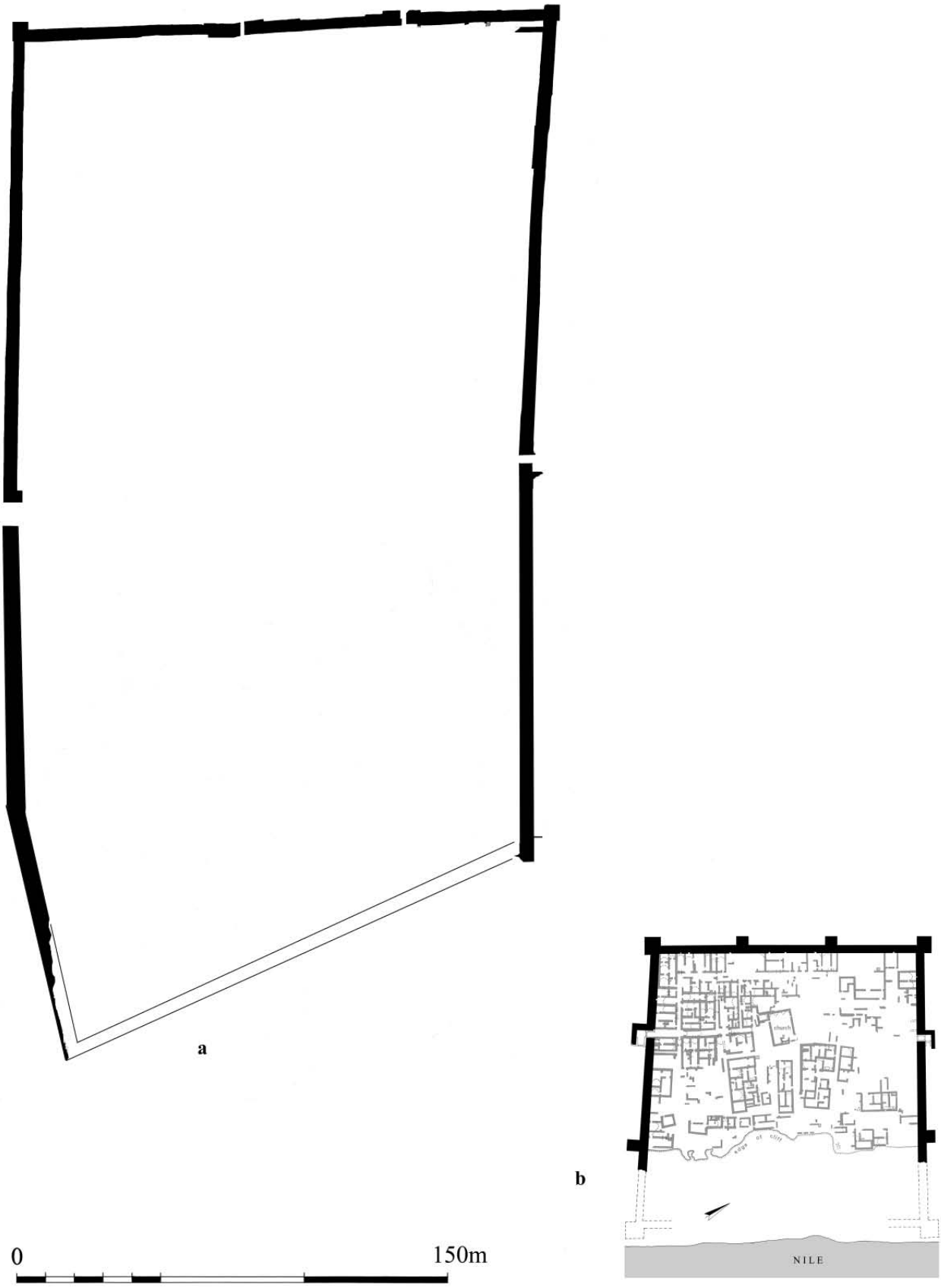

Fig. 2 — Urban defences. Scale 1:2000. a...Meroe, the Royal City; b...Ikhmindi (after Stenico 1960; Deichmann & Grossmann 1988).

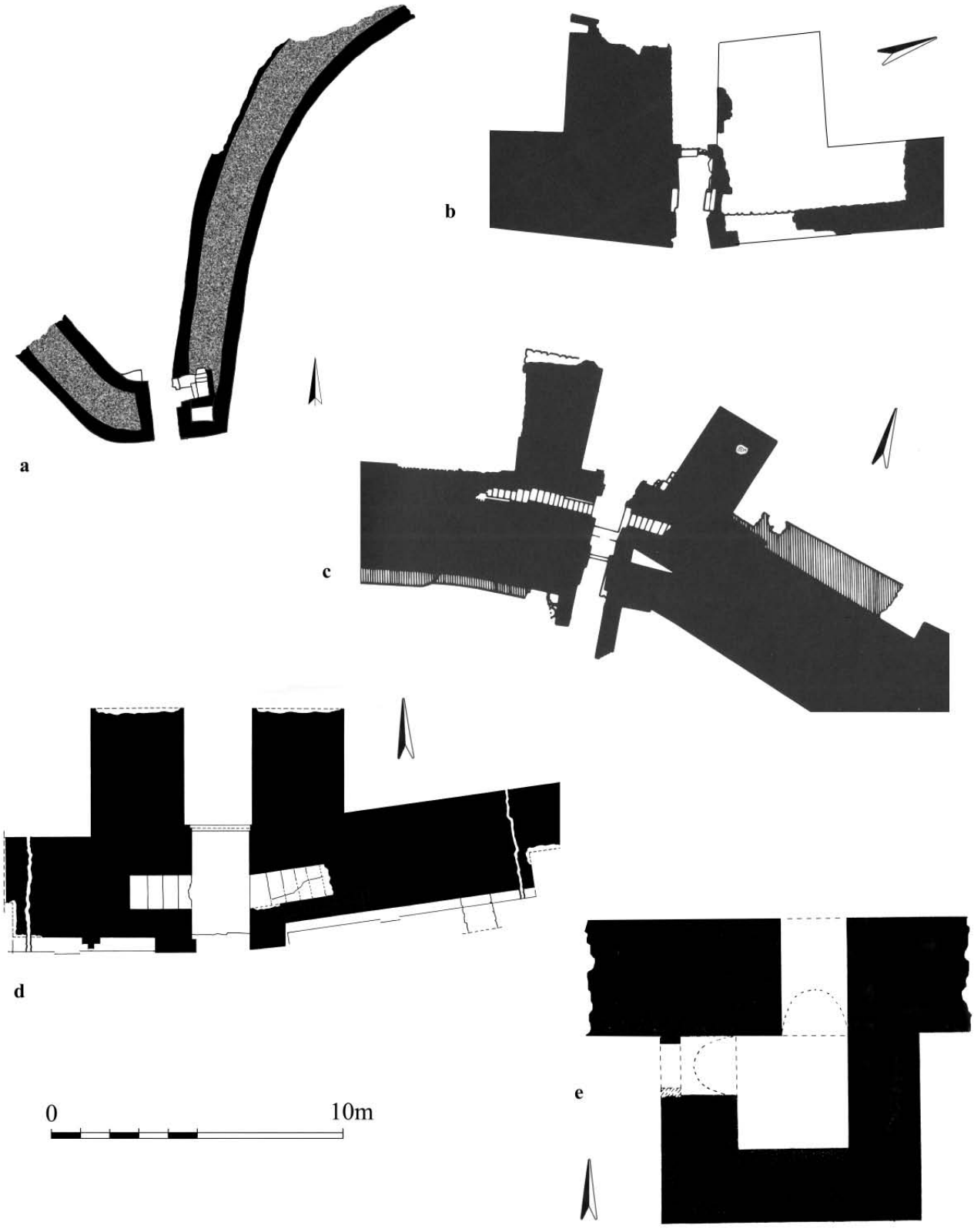

Fig. 3 — Gate plans. Scale 1:200. a...Qasr Ibrim (after Horton 1991); b...Dorginarti, the west gate (after Heidorn 1991); Dorginarti, the north gate (after Heidorn 1991); d...Jebel Sahaba, the north gate (after Säve-Söderberg & Troy 1991); e...Sheikh Daud, the south gate (after Monneret de Villard 1935).

temples rather than to provide a defensive capability against enemy attack is unknown.

Kawa

At Kawa we might expect a similar situation to that observed at Sesebi and Dokki Gel. The New Kingdom town of Gematon was contemporary with that at Sesebi, the defensive circuit of which is still well preserved. However no traces of a defensive circuit of that date have been found at Kawa. The main Kushite temples are surrounded by a massively thick mud-brick temenos wall, but this does not appear to have been primarily a defensive structure (Macadam 1955, pl. 3). There are no projecting towers at the one angle so far located nor flanking the only gate known on the east side of the enclosure.

Dangeil

As at Kawa the temple sits within a rectangular enclosure, here 154 x 132 m in size, surrounded by a wall of mud brick with a red-brick outer face, a total of 2.05 m thick (Anderson & Ahmed 1998-2002, 31-2; Crawford 1953b, 8-9). There appears to be a large projecting tower at the south-east angle, while traces of what may be other projecting towers have been claimed elsewhere along the circuit although their presence remains doubtful (pers. comm. Julie Anderson). It has been suggested that Dangeil was an administrative headquarters of the region and was perhaps connected with the gold mines found in its hinterland to the east of the river. The style of construction of the walls indicate a construction date between the 2nd century BC and the 1st century AD while the extant temple dates to the reign of Natakamani and Amanitore in the mid 1st century AD. In the present state of our knowledge of the site there is little to suggest that the walls here are anything but those constructed to delimit the *temenos.* However, as excavations are in progress on the site, further discoveries may alter this view in the near future.

Meroe

At Meroe a roughly trapezoidal area 295-365 x 195 m in size in the central part of the city is protected by a massive wall which in its design would appear to be for military defence (Fig. 2, a). The wall, built of dressed stone throughout, varying widely in thickness from 3.5-7.75 m, still survives to a height of 3.5 m in places (Török 1997b, 41). The angles are strengthened by substantial projecting rectangular towers. Flanking the two single-portalled gates on the north-west side of the enclosure the wall is slightly thickened on the exterior. By the gate on the north-east wall there may be a boldly projecting tower. Stairways adjacent to that gate were thought by the excavators to have given access to the wall top which was presumably provided with a parapet walk and parapet (Garstang 1913, 9; 1914, 74). Although doubts have been expressed about the function of this enceinte, whether it was actually for military defence or some sort of very substantial flood defence (Török 1997b, 45), its massive nature and design strongly suggests that it was a serious attempt to provide a secure defence against enemy attack although whether from external or internal enemies is unknown. The date of its construction is unclear[4] but it certainly seems to have gone out of use by the 1st century BC at the latest when parts of the circuit were in such a state of disrepair that it was overbuilt by housing and other structures.

The form of the angle towers in particular can be paralleled among the abundant fortifications of the early medieval period both in the region of Meroe, at Jebel Umm Marrihi, Hosh el-Kab (Abu Nafisa) and Mutmir, a little further downstream at Jebel Nakharu, and far to the north at Faras, Sheikh Daud, Ikhmindi (Fig. 2, b), Sabaqura and Kalabsha, although the gates of these forts are different (Fig. 3, e).

Site 6-G-6

One other site deserves mention. This is a small settlement close to the Second Cataract at Gezira Dabarosa designated 6-G-6 during the Sudan Antiquities Service's survey and excavations on the west bank of the Nile in 1960-61. Although most of the remains date to the Ballaña and Christian periods the enclosure wall was thought to be perhaps of later Kushite date. It was 2-3 m thick with well-laid stones facing a rubble core and enclosed an area about 100 m in length north-south, the width was not ascertained. Houses of the Ballaña period were built over its denuded remains (Adams 2004, 27; Verwers 1962, fig. 4). What it enclosed and hence what its exact function was is unknown.

Qasr Ibrim and Jebel Adda are included among the urban defences but probably also had an important strategic role.

Qasr Ibrim

Qasr Ibrim in the Kushite period appears to have been an important religious centre but also served as a fortress and was so used by the retreating Kushite army in 24 BC when it was captured by the Romans. The earliest defences are thought to date to the late 10th or 9th century BC (Horton 1991, 268). The walls, perhaps enclosing a sub-rectangular area with sides approximately 120 m in length, were constructed with a mud-brick outer face bonded in a pink mortar, an inner face of stone and with pitched stones in the core. A gateway is known at the south corner of the defences (Fig. 3, a). It consisted of a passageway off which opened a stairway leading up through the core of the wall. No flanking towers are known and it must have been tactically very weak, projecting as it does beyond the general wall line although its position on the top of a steep slope will have given addi-

[4] Török suggests a mid to late 3rd century BC to mid 2nd century BC date (Török 1997b, 45).

Fig. 4 — The fort at Gala Abu Ahmed.

tional protection. Later the gate was overbuilt by a massive circular projecting tower faced in finely-cut sandstone blocks and filled with loose stone chippings. Access through the defences was then apparently by a stairway although the form of the entrance is unclear. It was only some time later, but before the arrival of Ptolemaic pottery on the site, that a new gateway, decorative rather than defensive was provided to the south west. Initially no provision for closing the gateway was provided. Later however the gate opening was progressively narrowed from 4.5 to 1.25 m and finally blocked (Alexander & Driskell 1985, 19; Plumley 1970, 17-18, pls XXIV, XXV.1). Another gate was perhaps then constructed on the east side of the defences which was not substantially different from the old gate. It was a simple doorway constructed of dressed stone with a decorated cornice lintel with winged uraei and sundisc (Plumley 1975, pl. XIII.3), leading via a right-angled stepped passageway into the fortress.

Jebel Adda

This site appears to have risen to prominence in the later Kushite period when it was provided with a mud-brick and stone defensive wall and a ‘great northern projecting tower’ (Millet 1964, 7-8; 1967, 53-5). It enjoyed considerable defensive potential sitting atop a prominent hill and Adda in the medieval period is referred to in the Arab sources as a fortress along with Qasr Ibrim (Millet 1981).

The earliest defences consisted of a mud-brick wall 2 m thick built on the edge of the hilltop on the south and east sides and extending down the more gentle slope on the north side and towards the river to the west. It was provided with massive towers at every 10-12 m. Access into the enclosure was by a wide gate in the east wall approached by a paved road. A stairway on each side of the gate allowed access onto the curtain wall[5]. According to the excavator soon thereafter the curtain was thickened on the interior with a wall of brick. A sandstone facing set in mud mortar was also added to the exterior of the towers, that of the gate-towers being roughly dressed and then covered in a mud-mortar render. This phase appears to have ended in a violent destruction of the site[6]. Many sections of the mud-brick walls were heavily fire damaged particularly at the gateway where the gates were destroyed by the violent conflagration. After a refurbishment of the gateway with the provision of a timber threshold and the packing of the destruction debris to form a serviceable path the fortifications were once again rebuilt on a large scale. Further layers of brickwork were added to strengthen the walls, the gate towers were increased in height and a massive new sill and doorposts were added. This coincided with the conversion of the hilltop into a major monumental complex.

Military defences

Gala Abu Ahmed

This roughly trapezoidal fortress was discovered in 1984 in the Wadi Howar 108 km upstream from its confluence with the Nile at Old Dongola (Figs 4 and 5, c; Jesse & Kuper 2004; Kuper 1988). It measures approximately 110 x 162 m in size, excluding the towers and is defended by a massive stone wall about 5 m thick, built of coursed rubble on the faces and with a rubble-filled core. The walls have slightly battered faces which are constructed of slabs on some sections of the curtain laid horizontally, on others set vertically or at a slight angle from the vertical. On the northern curtain on the north-east wall the two styles of construction meet a little to the south of the tower the wall of which is also provided with

[5] The exact form of the gateway and of the stairways is uncertain as no plans of the fortress have ever been published.

[6] The excavator ascribed this to the ancestors of the medieval Nubians rather to the Romans (Millet 1967, 54).

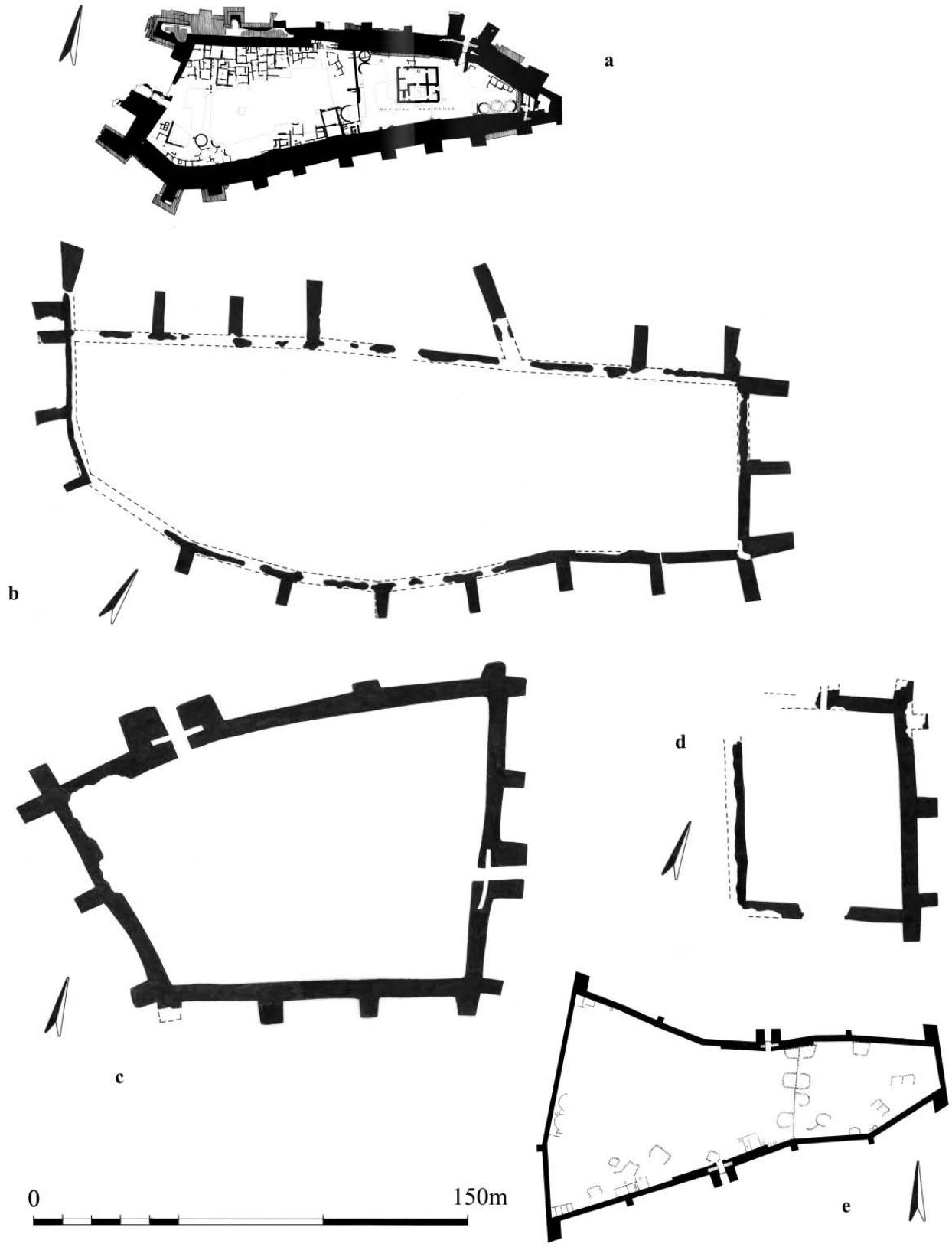

Fig. 5 — Saite and Kushite fortresses. Scale 1:2000. a...Dorginarti (after Heidorn 1991); b...Dabanarti (after Ruby 1964); c...Gala Abu Ahmed (after Jesse & Kuper 2004); d...Fura Wells (after Crawford 1953); e...Jebel Sahaba (after Gardberg 1970).

a vertical stone-slab facing and much of the first curtain east of the north-west gate is of vertically-set facing stones (Fig. 6, b). The different styles of building technique employed may relate to the work of different construction gangs; there does not appear to be any structural reason for it. Such a construction technique is very common on the Middle Nile and can be seen on many of the post-Meroitic, Medieval and Islamic fortresses along the river banks e.g. at Gandeisi near the Fifth Cataract (Crawford 1953a, pl. XXIb) and Jebel Nakharu near Berber (Fig. 6, d; Crawford 1953a, pl. IXa), as well as at the as yet undated sites at Kajabi near Kareima (Fig. 6, c; Titherington 1938) and el-Hosh near Tamtam (Fig. 6, e)[7].

At each angle there are long double rectangular towers, each an extension of the curtain walls (Fig. 7). The single interval towers are also rectangular and boldly projecting. The gates are set towards the centre of the north-east and north-west walls and are of similar plan. The walls of the gate passages, at least at the north-west gate are also battered. There are no door jambs in either gate as one would expect if doors were provided nor is there any evidence for bolt holes in the sides of the passageways. Leading up from the gate passageways are stairways set in the thickness of the wall, with treads of large stone slabs.

The defences are massive yet the height of the walls relative to their width seems too low. All the wall tops are at one level and there is no trace of a wall walk and virtually no trace of any parapet. Also telling is the fact that the towers are exactly the same height as the walls. One might expect that the towers would have attained a greater elevation than the walls. This all suggests that the upper parts of the walls and towers were constructed in a different material, mud brick or *jalous* which has been totally removed by erosion. There are a number of later fortresses where the lower parts are of stone and the upper parts of mud brick or *jalous*, for example el-Kab (Crawford 1953a, pl. VI). At the level of the top of the walls, as they survive today, there appears to have been a string course of horizontal stones, even in those sections of the wall where the facing stones were set vertically.

Fura Wells

What may be a close parallel to Gala Abu Ahmed lay at Fura Wells in the Bayuda (Fig. 8). Although never studied in detail, the rectangular fort here, measuring approximately 76 x 96 m, again excluding the towers, with an area of 0.49 ha, is defended by a stone wall approximately 5 m in thickness (Figs 5, d, and 6, a). It has two gates, in the centre of the north and south walls, protected by towers and with passageways approximately 2.25 m wide. There are also projecting towers along the curtain and at the angles (Crawford 1953a, 36-9). It is the angle towers which are particularly interesting. At each angle there are again two towers set at 90º to each other, one of each pair a prolongation of the fort wall extending well beyond its exterior face, the other set slightly further along the wall line from the angle.

Jebel Sahaba

Another comparable fort stood on a flat hilltop adjacent to the river at Sahaba a little downstream of the Second Cataract and was investigated by the Scandinavian Joint Expedition during the UNESCO High Dam Campaign (Gardberg 1970, 45-7, pl. 21; Säve-Söderbergh & Troy 1991, 319-23). The fort is trapezoidal in shape (Fig. 5, e), the defensive walls set close to the edge of the steep hillside except on the short eastern front. The walls were thin, presumably in view of its strong naturally defensible position. The south wall was 2.1-2.2 m thick, the west wall 1.7 m, the east wall 2-2.1 m and the north wall 2.05 m, constructed from mud bricks averaging 360 x 185 x 85 mm in size. Immediately adjacent to the gates the curtain wall for a distance of approximately 15 m was thickened to 3.2 m. The interval towers were small, more in the nature of buttresses, some bonded into the wall others not. That on the east wall was constructed from stone. The angle towers were much larger projecting beyond the curtain walls to north and south by between 4.6 and 5.4 m and are between 5.1 and 6 m thick, but flush with the east and west curtain walls. They had a core of stone blocks. Clearly related to the type of towers provided at Fura Wells and Gala Abu Ahmed the strength of the situation afforded to the fort by the hilltop on which it stands may have led to the builders skimping on the man-made defences: there is no provision of a second tower at the angles.

The gates are flanked by boldly projecting rectangular towers (Fig. 3, d) which according to the excavators may have supported a single tower at first floor level 8.62 x 8.85 m in size over the long gate passage. At the south gate the passage was 2.5 m wide leading to the gate 1.9 m wide, 3.65 m from the exterior closed by a double door turning on pivots and set into a wooden door frame. In the thickness of the wall leading up from the gate passage are narrow stairways giving access presumably into the chambers of the towers and onto the wall walk. That at the south gate had treads 350 mm deep with risers of 90 mm.

Dabanarti

On an island in the Nile at the Second Cataract opposite the Egyptian Middle Kingdom fortress of Mirgissa lies the fort of Dabanarti. The irregular rectangle about 230 m long by 60 m wide (Fig. 5, b) is defended by a wall of mud brick between 3 and 5 m in thickness. Part of the

[7] It has been suggested that this latter site is of Neolithic date (Kendall 2001, 1-23). If that is the case such a massive structure of such an early date is not easy to parallel in the region. Apart from the Pharaonic Egyptian fortresses one would have to look to the C-Group settlement at Wadi es-Sebua (Sauneron 1965) or the Kerma fort in the Wadi el-Khowi (Bonnet & Reinold 1993).

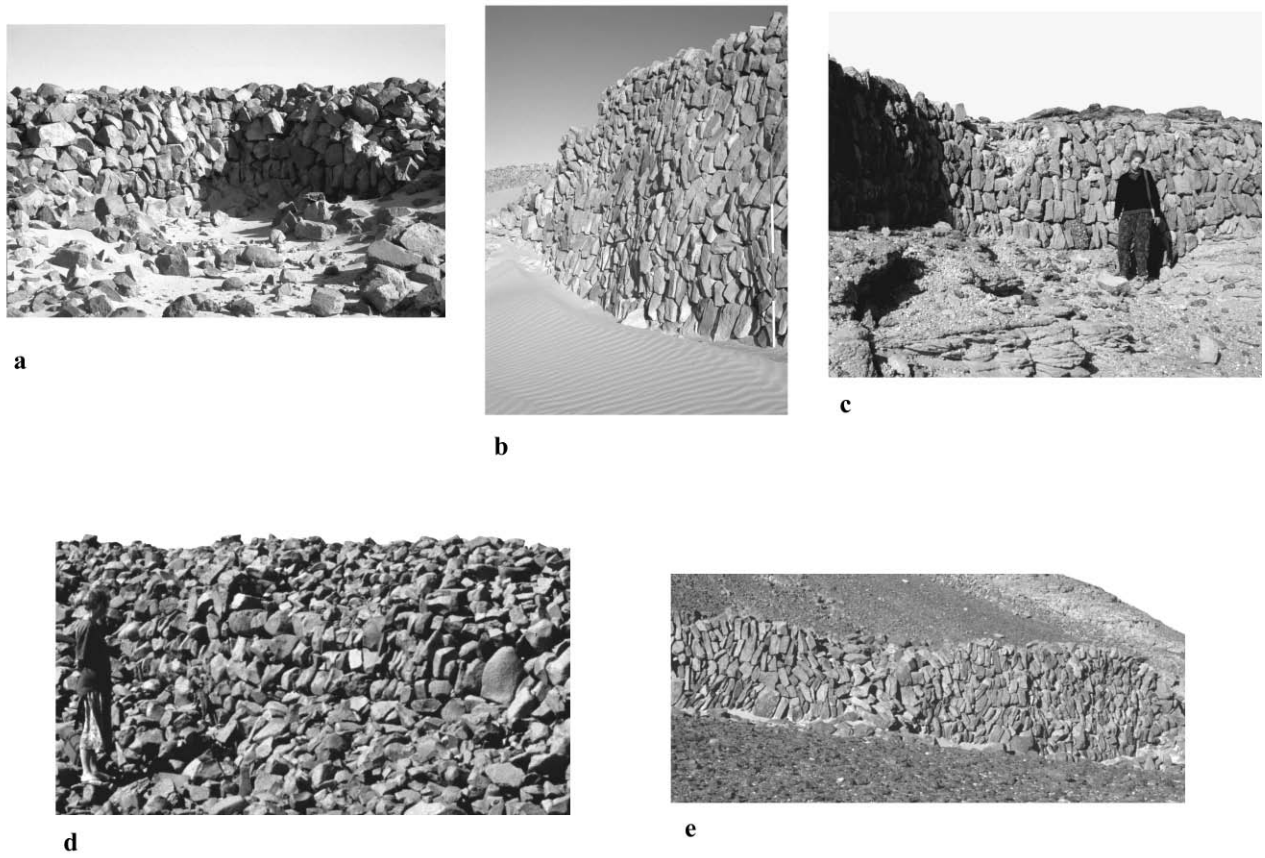

Fig. 6 — Detail of wall construction. a...Fura Wells; b...Gala Abu Ahmed; c...Kajabi; d...Jebel Nakharu; e...El-Hosh.

curtain wall, and the towers have stone rubble foundations. All the towers are rectangular and many project a considerable distance from the curtain wall and there are double-angle towers at the three right-angled corners of the enceinte. The location of the gate is unclear: it may well not be in the position suggested by Ruby (1964) in the centre of the north-west wall where there are no flanking towers.

Dorginarti

Dorginarti appears on ceramic evidence to be datable to the later 6th and 5th centuries BC. The material has much in common with that from sites in Egypt and as far north as the Levant and its construction has been credited to the Saites and Persians (Heidorn 1991; 1992). It was constructed of mud bricks on average 360-370 x 170-180 x 80-90 mm in size with later additions and repairs in slightly larger bricks. It does not have the double-angle towers but the gates are very similar to those discussed above with their massive flanking rectangular towers, long narrow passageway and the flights of stairs leading up from the passage within the wall thickness (Figs 3, b-c and 5, a).

Hamadab

Recent excavations have led the excavator of this site, which lies only a few kilometres to the south of Meroe, to claim that it may be a military site whilst acknowledging that it is still too early to have a clear idea of its function (Wolf 2004). The evidence for its military associations comes from the presence of large numbers of archer's looses which are thought to have been manufactured on the site and for the evidence for metal working which, it is suggested, included the manufacture of arrowheads. Further evidence is adjured from a comparison of the plan of the site with that of Roman forts. As the form of the enclosure at Hamadab is still little known such a comparison is premature. Also we know nothing of the form of the permanent installations occupied by the Roman army in the early decades of its occupation of Egypt which may have influenced the Kushite military architects. If the form of the temporary/siege camps constructed by the Roman army in its campaign against the Kushites is any guide (Welsby 1998), camps which are typical of those constructed throughout the Empire particularly in the 1st century AD, we might consider it more likely that the forts would also have conformed in plan to those contemporary examples known for example from Germany. Evidence for early Roman forts in the eastern Empire is extremely sparse and it is generally considered that the Roman army was frequently housed in the towns. The parallels used for Hamadab are of a much later date than the time of Akinidad whose military headquarters this is considered

to be. We must await further excavations before this discussion can be carried further.

Outworks

Outworks are visible at the north-east gate of Gala Abu Ahmed, only preserved as two kerbs of closely-spaced stone blocks. Direct access through these to the north-east gate was still maintained. There is also an entrance into the outwork from the north. It is not clear what these were for nor what may have been the superstructure which could have rendered them defensible. There are also extramural defences at Jebel Sahaba; two parallel mud-bonded stone walls extend down the hillside from the fort to the river bank. They are 1.8 and 1.4 m thick and were preserved in the 1960s to a maximum height of 1.3 m. A mud-brick building was noted within these walls constructed of bricks 400-420 x 200 x 80 mm. Its relationship with the defensive walls was unclear (Säve-Söderbergh & Troy 1991, 5:2, 319). At Fura Wells walls run off from the north-east angle and extend across the plain towards the nearby jebel (Crawford 1953a, fig. 11, pl. XXIXa). Their function is unclear.

Internal features

Nothing is known of the internal arrangement of the fort at Fura Wells. At Jebel Sahaba there are a number of rectangular-roomed structures abutting the inner face of the fort walls. There was a range of four rectangular rooms with clay floors abutting the south wall at the south-west angle. A range of three rectangular rooms, again built up against the south wall, lay a little to the east. It had been used as a kitchen area and there were a number of small kilns within the rooms while further rooms of this type lay to the east of the south gate and in the north-west angle. Midway along the west wall were two round mud-brick structures perhaps silos for the storage of grain (Säve-Söderbergh & Troy 1991, 5:2, 321-2; 5:3, pls 218-22). The rest of the enclosure appears to be empty although the hilltop was badly denuded and traces of other dwellings may have been lost. There are traces of one very well constructed rectilinear building within Gala Abu Ahmed approximately 10 x 7 m in size, with at the west end an 800 mm wide entrance. Its walls are set into a rock-cut foundation trench. In the south-east part of the 24interior is a flat stone pavement approximately 10 m square. There are also circular huts and a large circular structure in the west corner which, it is suggested, may be a *hafir* (Jesse & Kuper 2004)[8]. None of these structures have yet been studied in detail. Much of the interior is obscured by sand, so many other structures may remain buried while those known may not all be contemporary with each other and with the construction and use of the fort for military purposes.

Dabanarti seems to be devoid of any permanent structures in its interior (Ruby 1964). Dorginarti is distinctly different with a dense arrangement of buildings in its interior including one ‘official residence’ (Heidorn 1991, fig. 1).

Late Kushite or post-Meroitic installations

Dating from the very end of the Kushite period, if not beyond it, are four enclosures in the lower Wadi Abu Dom and one in the vicinity of the Sixth Cataract[9]. The latter site, Hosh el-Kafir near el-Hobagi (Fig. 9, a), was studied and partly excavated by Patrice Lenoble and provided a radiocarbon date of 1600 ± 50 BP, c. AD 340-564 [95% sigma] (Lenoble 1992, 92, pl. VI). It was a square enclosure delimited by a stone wall 1 m thick. No angle or interval towers were provided although the two gates in opposing walls of the enclosure did have flanking internal guard chambers presumably with a tower above. Adjacent to the west gate there are long, closely-set internal buttresses against the inner face of the curtain wall[10]. Of the Wadi Abu Dom sites (Chittick 1955) two, at Umm Ruweim 2 (Fig. 9, c) and Umm Khafur (Fig. 10), are very similar. They are enclosures a little over 50 m square defended by a stone wall but without towers except perhaps exclusively at the gateways which are angled passageways of a type well known from the Faras to Kalabsha (see Fig. 3, e), and Jebel Umm Marrihi to Kurgus, chains of fortifications. Umm Ruweim 2 has a single gateway in its west wall, Umm Khafur appears to have two in the centre of opposite sides of the enclosure. Umm Ruweim 1 is more complex with a projecting tower in the centre of each wall one or more of which presumably were pierced by an angled passageway (Figs 9, b, and 11). The fourth site, Umm Kuweib, is rectangular

[8] If this is correctly identified as a *hafir* (water reservoir) it implies that there was a much greater amount of rainfall in the area at the time of its construction and use than is the case today.

[9] The site at Debaiba Umm Tob, excavated by the University of Khartoum, has not been published in detail. It appears to be an isolated multi-roomed building rather than being a ‘fort’ similar to that at Hosh el-Kafir. Hosh el-Kab, also known locally as Abu Nafisa, near el-Gerara is of very different form, being much more similar to the ‘Alwan’ chain of forts known at Jebel Umm Marrihi, Mutmir, Jebel Nakharu and Kurgus (Fig 9, d; Welsby 2002, 132). Other forts, which from a consideration of their plans perhaps belonging to this ‘Alwan’ chain, have been noted in the region of the Fifth Cataract at Diaqa on the left bank, on the island of el-Usheir (El-Amin & Edwards 2000, 46, 48) and at two sites not precisely located on the right bank noted by the writer from the air in February 2003.

[10] The presence of these buttresses and the casemates found on the south wall will have effectively increased the thickness of the enclosure wall and would have allowed for the provision of a parapet walk. For a further discussion of this site and those in the Wadi Abu Dom (see Lenoble forthcoming).

Fig. 7 — Gala Abu Ahmed, detail of the north-angle towers.

with a simple opening in the middle of one of its walls giving access to the interior (Fig. 12; Chittick 1955, fig. 4).

No internal buildings are known at Umm Ruweim 2 and Umm Khafur. The others have rooms built up against the inner face of the outer walls, at Hosh el-Kafir some were used for metalworking to produce arrowheads[11]. Both Umm Ruweim 1 and Hosh el-Kafir have a centrally placed multi-roomed structure, at the former site set within an inner enclosure again with rooms around its perimeter. The latter site is reminiscent of the so-called Western Palace at Faras (Griffith 1926), where again a multi-roomed central building lies within a courtyard surrounded by small rooms. The Faras building does not display any defensive features and is considered to have been a storage facility. It stands some distance away from the contemporary settlement.

All these installations appear very different from those already discussed. If they are to be considered forts their very weak defences set them apart from the earlier installations. They are also located in situations that are far from ideal from a defensive point of view being generally on flat ground and in some cases dominated by adjacent high ground. If they are military installations the strategic reasons for the location of those in the Wadi Abu Dom and that near the Sixth Cataract are far from clear. The Wadi Abu Dom group are well placed to control travel along the wadi but they are set close together with no other similar installations elsewhere along the route across the Bayuda apart from the fort at Fura Wells far to the south. The enclosure at Hosh el-Kafir near the Sixth Cataract is close to the Nile in open country and therefore could easily have been bypassed by travellers, invading armies or raiding parties[12]. The installations in the Wadi Abu Dom share a number of features in common either in their layout or in the style of construction implying that they are either directly or broadly contemporary. However among the four there are three distinct types which implies some diversity in function. Whatever function can be assigned to them what is perhaps most surprising is that there are not others sites like them elsewhere in the Middle Nile Valley at points where major cross-desert trade routes approach the Nile[13].

Discussion

It appears that a number of features are characteristic of at least some, probably early, Kushite fortifications, notably the double-angle towers and the large rectangular projecting gate towers with the stairways running up into

[11] Evidence used by Wolf to support his suggestion of a military function for the enclosure at Hamadab where traces of metalworking were also found.

[12] For a discussion of the possible uses of this site see Lenoble forthcoming.

[13] *Cf.* Khor Shingawi approximately 13 km from the Nile on a route across the Bayuda which reaches the river a little upstream of the Wadi Abu Dom and Kufryat el-Atash south of ed-Debba (Edmonds 1940; Welsby 2002, 163-4). Of much earlier date is the enclosure in the Wadi el-Khowi dating to the *Kerma Classique* which is presumed to be on a trade route leading from Kerma to the east.

Fig. 8 — The fort at Fura Wells.

them from the gate passage. The double-angle towers are not confined to the Kushite period. They can be paralleled in the defences of Semna (Fig. 13, b; Dunham & Janssen 1960, end pocket plan III) built by Sesostris III (c. 1874-1855 BC) and also at the nearby site of Semna South (Fig. 13, a; Vercoutter 1966). The arrangement of the double-angle towers at Semna is identical to those Kushite examples noted above, although the form of the towers themselves is rather different with a wide projection at the outer end 'so that the plan resembles the outline of a mallet' (Lawrence 1965, 83). At Semna South, a very small mud-brick fort, the double-angle towers do not project beyond the wall line anything like as much as in the other forts considered here. Among the other broadly contemporary Middle Kingdom fortresses in the region there is a great deal of diversity in the form of angle tower employed while some forts dispensed with them altogether.

Chronology

At Fura Wells Crawford noted several certainly Meroitic potsherds and none that were definitively medieval. Hinkel (pers. comm. Jacques Reinold) has confirmed the presence of Meroitic sherds. Radiocarbon dates from two ostrich egg-shells found on the surface within the fortress at Gala Abu Ahmed suggest that it was built not later than c. 200 BC and perhaps much earlier (Berger & Berger 2003). This is now confirmed by the discovery of early Kushite objects and further radiocarbon dates (Jesse & Kuper 2004, Tab. 1; Lohwasser 2004). Jebel Sahaba was initially dated to the New Kingdom but later was assigned to the period 'not earlier than the Third Intermediate Period or the 25th Dynasty' (Säve-Söderbergh & Troy 1991, 5.2, 323).

Dabanarti sits among the chain of fortresses built by the Middle Kingdom pharaohs, Sesostris I and Sesostris III in the 20th century BC. However during excavation very little pottery was found. The excavator considered that it had been unfinished and dated it to the New Kingdom (Ruby 1964). A Kushite date for its construction may be tentatively advanced and it may well have been used, as was Qasr Ibrim, as a fortress during the war with Rome in the 1st century BC (see Welsby 1998, 165).

Function

The forts at Fura Wells and Gala Abu Ahmed are far from any major population centres of the Kushite period (Fig. 1). The former is on the Kushite royal road from the major residence of the ruler at Meroe to the major religious centre at Napata at a point where there is an abundant source of water and where the route enters the Gilif Hills. This was clearly a place of major strategic importance and the fort will have been designed to guarantee the security of the water source and to dissuade attacks on travellers passing through the narrow wadi. Gala Abu Ahmed can only have been located on another major route and presumably guarded a water source although evidence for this is as yet unknown[14]. Where the route is going to and coming from are equally uncertain. Movement along the Wadi Howar would in one direction lead to the Nile opposite Old Dongola and in the other towards Darfur, Jebel Marra and Chad. Old Dongola is

[14] Jesse and Kuper have suggested that there might be completely different reasons for the construction of the massive installation at Gala Abu Ahmed. They acknowledge that no hints on raw material extraction have been found in the area of Gala Abu Ahmed, but that a sacral function cannot be ruled out (2004, 141-2).

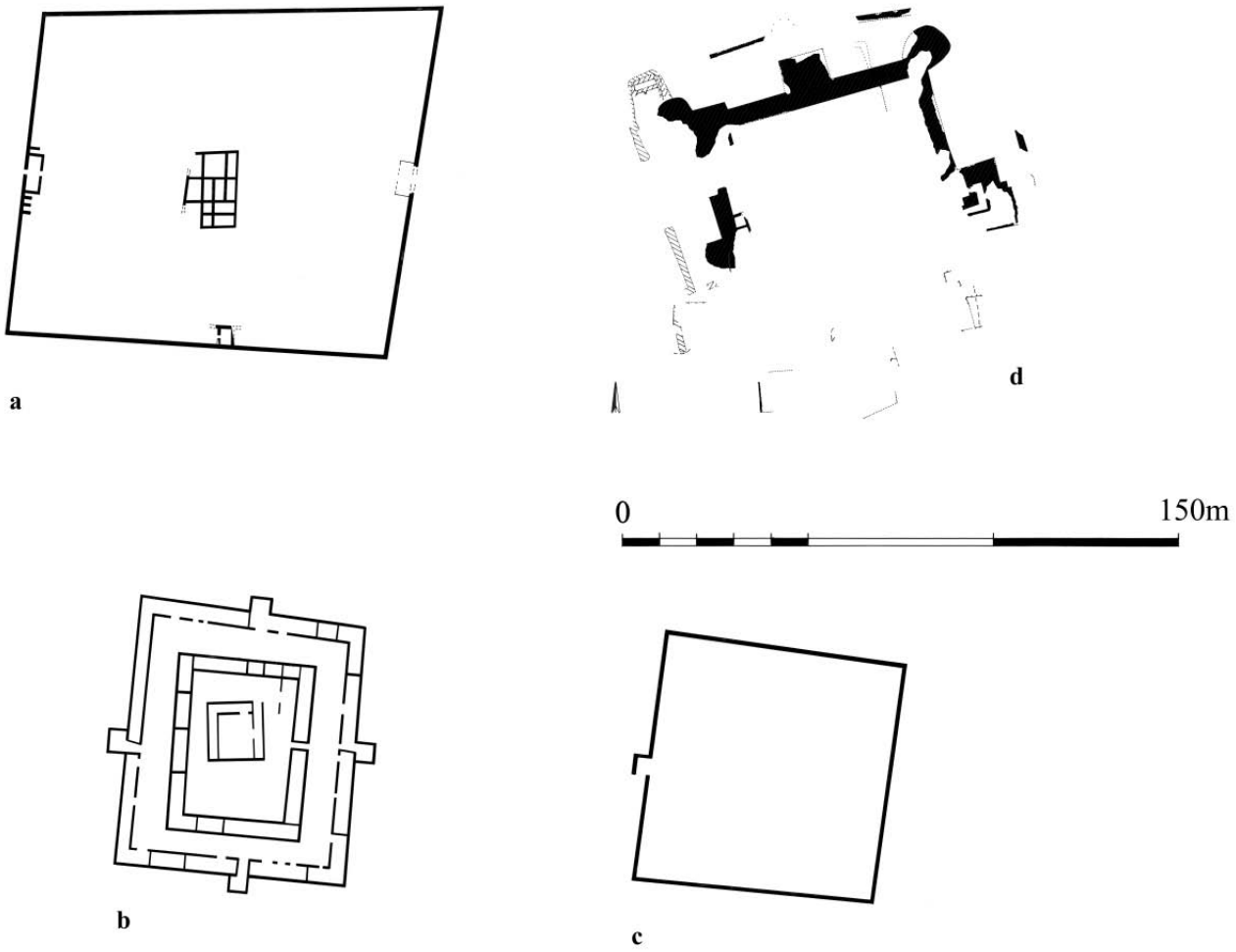

Fig. 9 — Kushite and post-Meroitic installations. Scale 1:2000. a...Hosh el-Kafir (after Lenoble 1992); b...Umm Ruweim 1 (after Chittick 1955); c...Umm Ruweim 2 (after Chittick 1955); d...Kurgus (after Welsby Sjöström 1998).

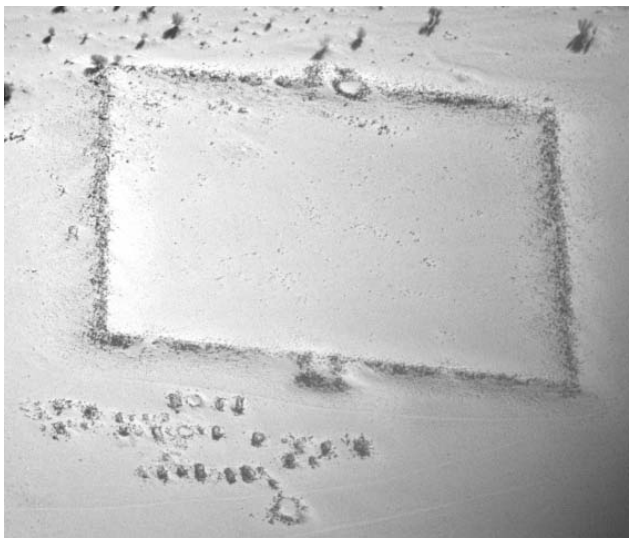

Fig. 10 — Umm Khafur from the air.

Fig. 11 — Umm Ruweim 1 from the air.

Fig. 12 — Umm Kuweib from the air.

not known to have been occupied in the Kushite period but the route east of the fort may have divided, one branch leading via ed-Debba towards the Napata region, the other north towards Kawa and ultimately Egypt. The forts along the Nile may also have been posts along the route from Kush to Egypt, a route particularly important during the period of Kushite domination of the lower Nile valley and thereafter along the trade routes to Egypt and the invasion routes from it[15]. The newly-built installations may have been augmented by the reuse of those of earlier periods. There was certainly a Kushite presence in the Middle/ New Kingdom fortresses at Semna and Buhen where Taharqo constructed and/or modified temples as he also did within the fortifications at Qasr Ibrim.

While the strategic role of the fortifications may be understood, how they were actually used on a day-to-day basis is more difficult to comprehend. This is partly the result of the lack of excavation of some of these installations. Surface indications and the limited work undertaken at Gala Abu Ahmed hints at the presence of substantial and regularly planned structures in the interior. At Jebel Sahaba however, and more especially at Dabanarti, there were few or no obvious buildings within the enceinte, a situation which can be paralleled within many of the post-Meroitic and medieval forts on the Middle Nile. Are we to consider that Kushite forts were designed to house a garrison of professional soldiers as had the Egyptian Middle Kingdom fortresses or where they strongholds that would only be occupied in times of threat ? The isolated locations of the forts at Gala Abu Ahmed and Fura Wells would suggest that they had permanent garrisons.

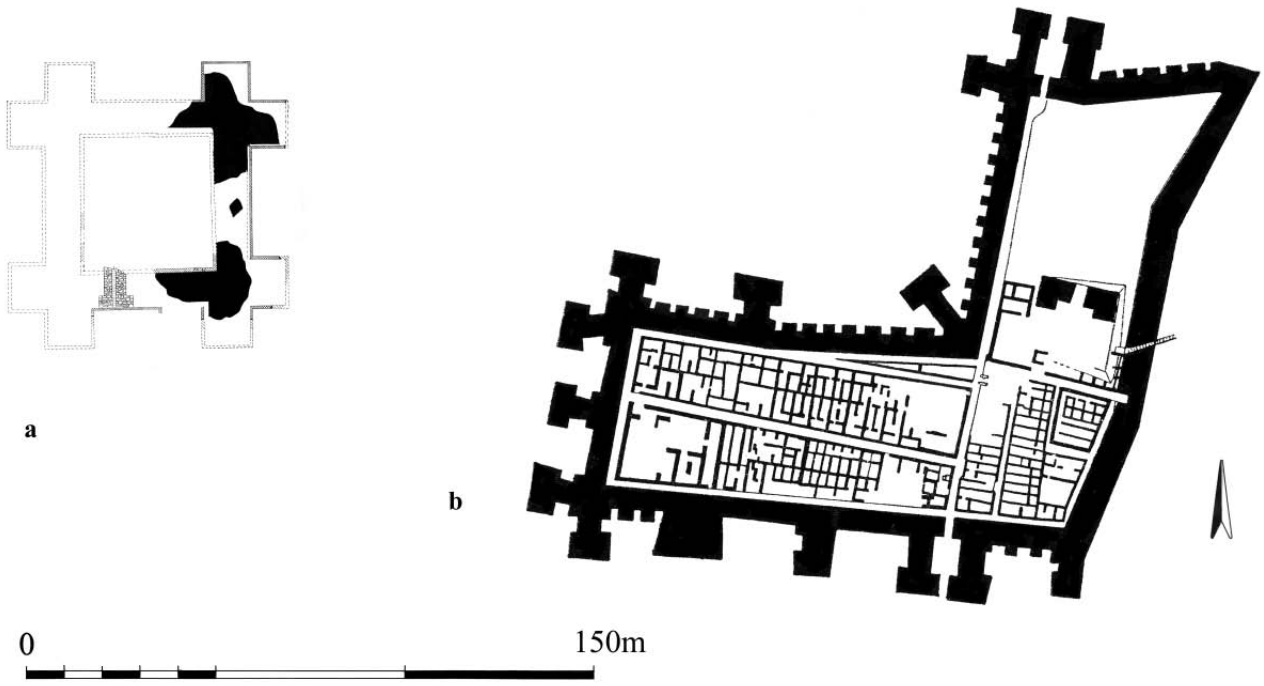

Fig. 13 — Middle Kingdom fortresses. Scale 1: 2000. a...Semna South (after Vercoutter 1966); b...Semna (after Dunham & Janssen 1960).

15 A similar situation to that seen during the Egyptian Middle Kingdom. Compare also the chain of fortified sites dating from the early Medieval period in the Kingdom of Nobadia between Faras and Kalabsha which may have had a similar function (Welsby 2002, 129, with references).

16 Note the presence of 'six overseers of fortresses' on the Election Stela of Aspelta in the early 6th century BC (Eide *et al.* 1994, 234).

In conclusion it may be suggested that the rarity of military installations and of urban defences indicates that on the whole the Kushites were not on the defensive[16]. It is not clear exactly what Kushite frontier policy was but they were presumably proactive in maintaining the territorial integrity of their state and its longevity testifies to the overall success of their approach. Demonstrations of power against the tribes living to the east and west of the Nile, together perhaps with treaties and subsidies must have generally been sufficient to guarantee peace. In Kush's relations with Egypt, apart from the period of direct control over Egypt itself, northern Nubia between the First and Second Cataracts acted as a buffer zone, the control of which reflected the relative power of the two neighbours and their interest in the region. Only very rarely was this buffer zone pierced and then with no long lasting results as far as we are aware. Relations with the other major power on Kush's frontier, that of Aksum, are little known and the contribution of Aksumite military activities to the collapse of the Kushite state is disputed (Behrens 1986).

The presence, at least in the early Kushite period, of substantial military installations constructed to a common design, widely distributed throughout the Kushite state, suggests a state-sponsored defensive system and highlights the territorial integrity of the region at that time and the control exerted by central government.

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