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Preliminary Report of the Third Field Season, 2002: Contexting Early Historic Western Orissa[*]

INTRODUCTION

The convulsive cultural and political rise of local dynasts from the 4th century CE king Mahendra to the Somavaṃśis from Dakṣiṇa Kosala some 500 years later, suggest that the traditionally assumed political, military, and cultural early historic preeminence of eastern over western Orissa may be more apparent than real. Indeed, a number of important manifestations appear to have occurred in western Orissa, including coinage, high quality pottery, and iron age ("megalithic") tombs[1]. In the previous campaigns (November-December in 2000 and in 2001) our team have gathered information indicating that in terms of regional history from the iron age to the early historic/early medieval period, from a cultural and political perspective, western Orissa may have been superior to the coastal area. The opposite assumption may be simply a projection of contemporary attitudes and conditions into the past.

Since our project began, the team have investigated several aspects of the relation between eastern and western Orissa, including pottery, small finds, and so-called megaliths. In 2002 we emphasized architecture – a sensitive indicator of socio-political power: Strategically important centres are likely to have larger and more fortifications, not so backwaters. Following our first documentation of these ruined forts, we raised the question as to their number, size, and distribution in the east relative to the west. Without documenting forts in areas adjacent to western Orissa, a view of the architecture would certainly be myopic, precluding meaningful comparison. In any case, prior to our survey, the documentation of the architecture was, but for Śiśupālgarh, impressionistic, including next to no drawings or photos, which resulted in a stagnation of the early historic archaeology of the region. The present brief progress report highlights our fieldwork in 2002 in Śiśupālgarh and in western Orissa.

PREVIOUS RESEARCH

In the late 1960s D. Schlingloff and in 2000 M. Brandtner incorporated all of the archaeological, western as well as Indian literary sources

[1] We have elucidated these criteria in previous preliminary reports submitted for publication for the Orissa Research Project at the annual conferences at the Landeskulturzentrum Schleswig-Holstein, Salzau: Brandtner, M./ Misra, B./Mohanty, P./Yule, P., Survey in Western Orissa (November – December 2000) Preliminary Report, Periphery or Unrecognized Centre?, 26 May 2001; Behera, P./Brandtner, M./Rath, B. K./Yule, P., Survey and Excavation November 2001 in Western Orissa, 14 May 2002, Identities in Time. We delivered a version of the above-mentioned paper of 2001 at the South Asian Archaeology Conference, Musée Guimet 04 July 2001. We also held a version of this same paper at the 17th European Conference on Modern South Asian Studies, Heidelberg, 09–14 Sept. 2002. The present paper was delivered as a lecture on 16.05.2003 in Salzau, Centres out There? Facets of Subregional Identities.
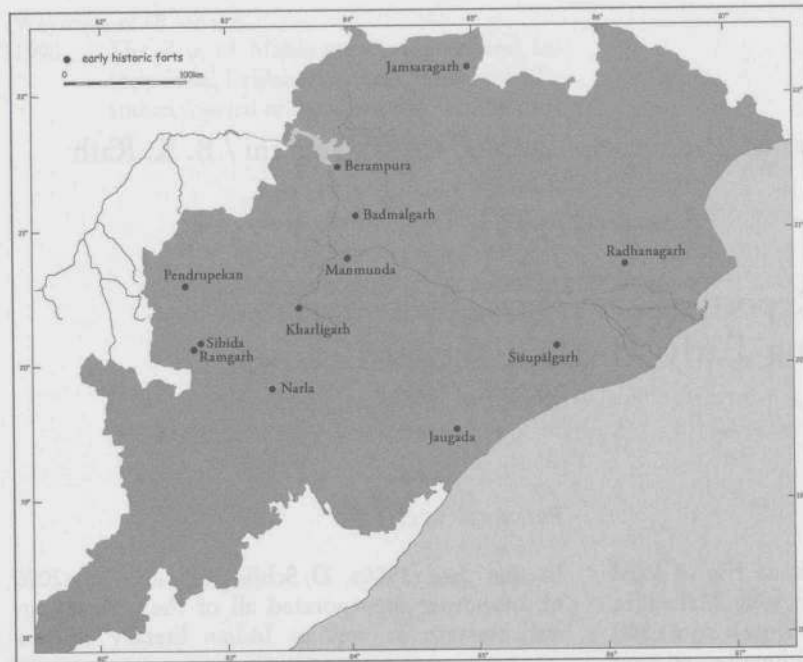
Fig. 1. Extant early historic fort ruins in Orissa.

available with regard to early historic urban *cum* monumental architecture in South Asia[2]. But for all their value, these German-language studies have never been properly received in India or abroad. Moreover, unfortunately in Orissa – our emphasis area – Śiśupālgarh is the only early historic site which has been studied in detail. The main textual source for the early historic architecture is the second book of Kauṭiliya's Arthaśāstra – a political handbook which contains a difficult detailed chapter on the building of fortifications. Around 320 BCE allegedly the prime minister of the Mauryan ruler Candragupta in Pāṭaliputra contributed this source, but certain parts of it are definitely later, while that on fortifications may simply reflect precursors[3]. Perhaps this explains deviations between what the text prescribes and the actual appearance of foundations built by the central authority.

SCOPE, RESEARCH STRATEGY

Aided by the Orissa State Archaeology and the Archaeological Survey of India, in 2002 we compiled a list of forts in Orissa, from which we began to document those of early historic date within the brief time available. Based on the existing literature, this list revealed few dates, locations, or relevant details. For example, if a given site is of relatively recent date, might it possibly rest on top of visible antique foundations? Well-meaning India historians warned us of a plethora of early historic forts in the area, but closer investigation revealed these to be unpublished, or to lack any semblance of documentation, to postdate our time-frame, or simply not exist[4]. In fact, the very fewness of the

forts was surprising. Some might cavil at which forts do or do not appear in our map (fig. 1). For instance, in some cases historically known forts or palaces had all but vanished (Khiching/Viratgarh, in any case postdating our scope), and thus do not appear. More exist, no doubt, which simply elude us. The greater the opportunity one has to look, the more one is likely to find.

In 2000 and 2001 by means of photos and GPS-plots we mapped the 600+ m long (interior 19.5 ha) Kharligarh fort in Dist. Balangir, which in fact turns out to be the largest early historic fortress in western Orissa[5]. But for this, it is typical in South Asia for its time in its reliance on the topography (escarpment in a river meander) for defensive purposes, such as Vidiśā (Besnagar, Madhya Pradesh)[6].

In 2001 the tachymetric mapping of the nearby Narla/Asurgarh quadratic glacis (interior: 410 × 300 m = 12 ha) in the Dist. Kalahandi also in

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[2]   Schlingloff 1967; 1969; Brandtner 2000. It is a shame that these excellent contributions have not found a more hearty reception. Naturally many other studies on this fascinating material have appeared, for example, Allchin 1995, 222 ff. Even here one reads disconcertedly that regarding early historic fortifications, ". . . but so far no comparative study has been made of them" (p. 223).

[3]   For a discussion of the reliability of the Arthaśāstra as a source see Brandtner 2000, 334 ff.

[4]   The case in point is the so-called ancient fort at Hemgiri/Junagarh in Dist. Sundargarh (UTM: 778059.8991; 2425714.987). Source: Mohapatra 1986a, 193; 1986b, 284f. It measures less than 1ha, and might more readily be described as a hiding place, owing to its small size.

[5]   Behera, P./Brandtner, M./Mohanty, P./Yule, P., in press.

[6]   Schlingloff 1969, 15. 133 fig. 4.

Fig. 2. a. Plan of the early historic ruined fortress Jaugada/Samāpā (drawing T. Rosarius/P. Yule). – b. Profile drawing of the northern glacis of Jaugada/Samāpā and that of the better preserved western one of Śiśupālgarh.

a

b
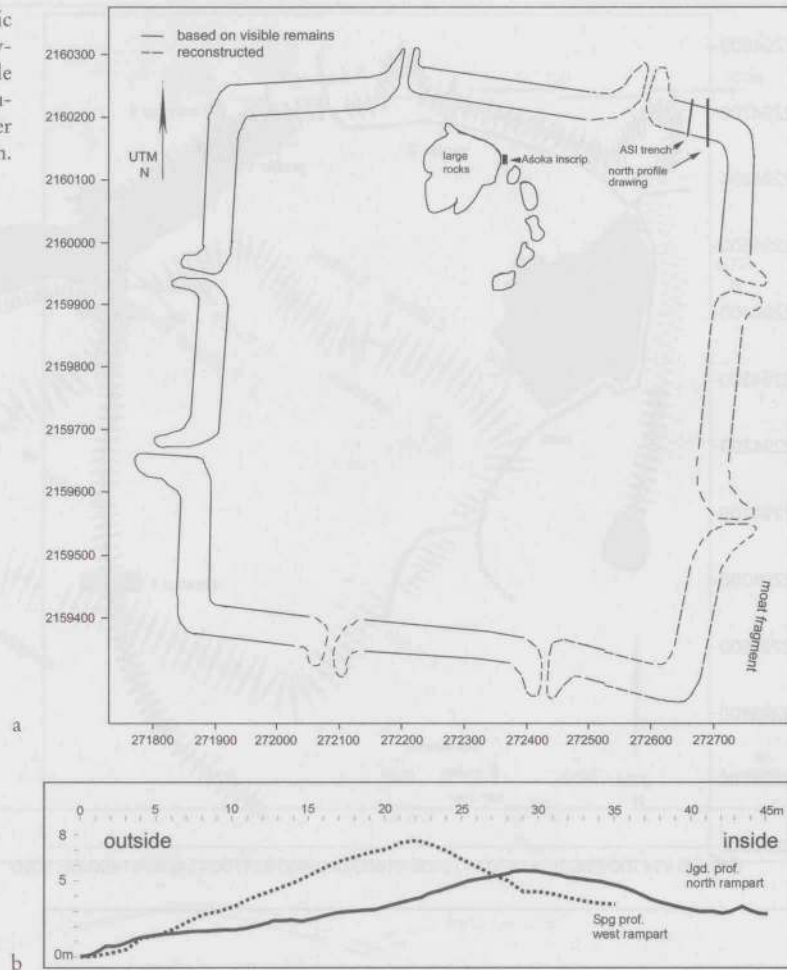
western Orissa gave a clear impression of a very different kind of early historic fort there[7]. It differs in principle from Kharligarh, having an entrance which fenestrates each of the sides, with the remains of corner bastions, and a reconstructable surrounding moat, a regular feature of this architectural type. Given a lack of documentation, not surprisingly, no one has recognised the relation between the fortification glacis architecture of eastern and western Orissa.

Newly Recorded Early Historic Sites

Enter Jaugada (Jaugarh, ancient Samāpā in Dist. Ganjam), a provincial Mauryan fortified capital which is famed by its version of the monumental stone-cut edicts of the emperor Aśoka. Despite J. D. Beglar's description of the extant fortifications in the later 19th century, without photos or drawings, the remains are difficult to visualize and comprehend. Debala Mitra investigated Jaugada for the ASI in 1956[8]. Her now collapsed trench in the northern glacis appears to lie east of the eastern gate. About 40% of the (interior measurements 900 × 800 m = 72 ha) quadrangular glacis are obliterated, but still recognizable with careful

repeated observation (fig. 2 a). Farmers have flattened much of the glacis to create a threshing ground. To map this and other fortified sites, we paced the glacis several times, recording with the GPS the crest, inner and outer perimeters every 30 m. More critical are the gates, where we took multiple readings every 5 m.

Jaugada's western side is best preserved and the now inhabited south-eastern and eastern sides are most distressed. The outline of the antique moat is still clearly visible in spots outside the glacis, particularly on the south-east side and corner. Except for the eastern gate in the southern glacis, the original eight gates are recognizeable. The fortification towers on the glacis, which J. D. Beglar described, have long since disappeared. In 1956 the glacis reportedly measured 23 × 4.75 m extant maximal width to height. But our measurements exceed these figures with a maximum of 45 × 6 m on the surface, naturally in its weathered and eroded state (fig. 2 b). The main village road trans-

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[7] Behera, P./Brandtner, M./Mohanty, P./Yule, P., in press.

[8] In the 19th century J. D. Beglar the glacis, moat, towers all were still clearly visible (Beglar 1882, 112). Excavation report: Mitra 1957, 30 f., pls. 40–44.
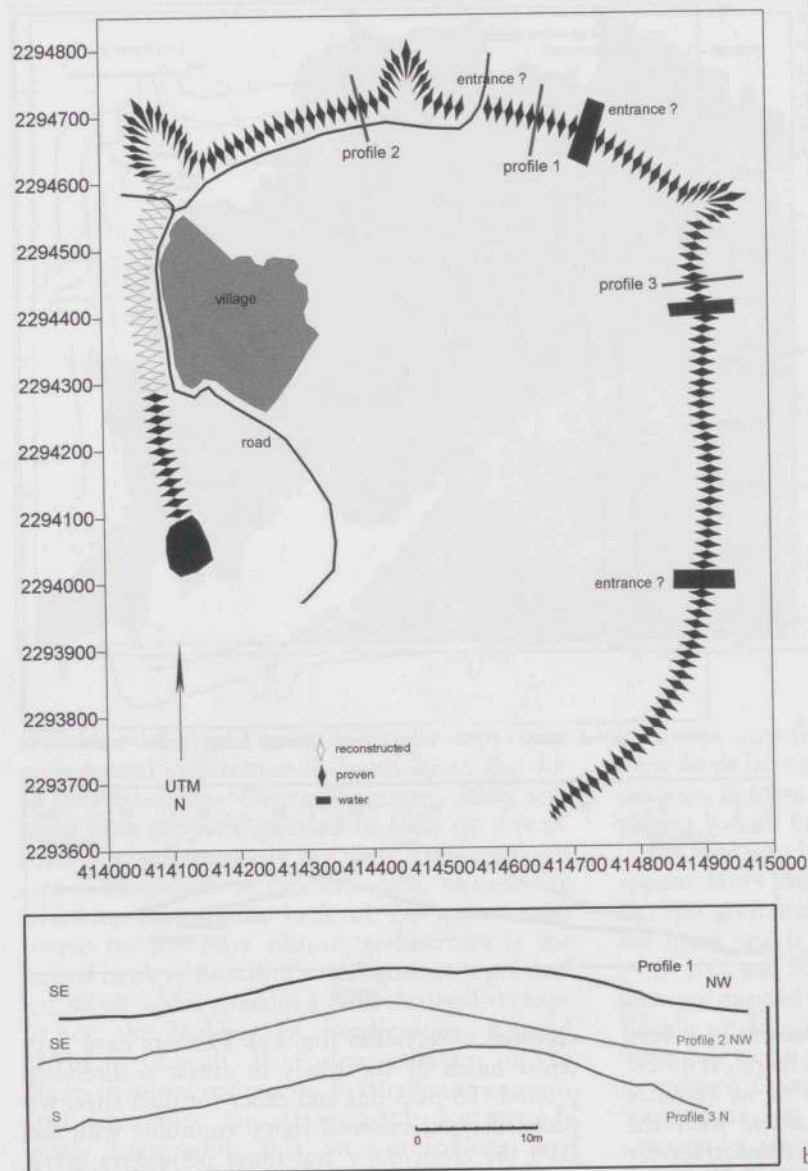
Fig. 3. a. Plan of the early historic ruined fortress Radhanagarh (drawing M. Blumenroth / D. Modarressi / T. Rosarius / P. Yule). – b. Radhanagarh, profile drawings of the northern glacis. To the right lies the exterior of the fortress, to the left the interior.

sects the easternmost northern and southern glacis where, owing to the symmetry of the ground plan, we expect a city gate. In the southern glacis here, in 1978 a school was built, obliterating whatever architecture was there. Aside from the ASI's protective building around the Aśokan inscription, no other preservation measures have taken place, not even the erection of an antiquities sign.

Some 50 km north-east of Bhubaneshwar in the Jajpur Dist. lies a further contemporary ruined glacis (780 × 1040 m = 81 ha) of which Radanagarh village occupies the north-western corner (fig. 3 a). K. S. Behera of the Utkal University (retd.) first mentioned this site publicly in the local newspaper about 10 years ago[9]. The ruins show a different and irregular ground plan relative to that of Jaugada. Unfortunately, the south-west corner is incomplete or not preserved. Despite erosion, in places the glacis are still quite prominent (fig. 3 b). Unusual for this kind of fortress is that the interior

and exterior are of nearly the same height. The present-day northern glacis is marked by a line of trees visible from the Kayma hill about 1 km to the north. Till now, this large fortified settlement has hardly been discussed in the context of early historic foundations.

Radhanagarh's early historic dating rests on the abundant surface pottery, terracotta ear ornaments, bullae some of which imitate Roman coin portraits, and reported punch-marked coins. The wares include black polished ware and plain red ware[10]. While the size and roughly north-south orientation of the glacis are roughly similar to

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[9]　We thank B. K. Rath and H. von Stietencron for this oral information, which Shri Behera confirmed. For further sources see Mishra 2000, 507 ff.

[10]　Cf. those in Rājghat: Narain 1994, 62 fig. 60. Source regarding the unpublished small finds: oral communication from M. Brandtner and H. von Stietencron.
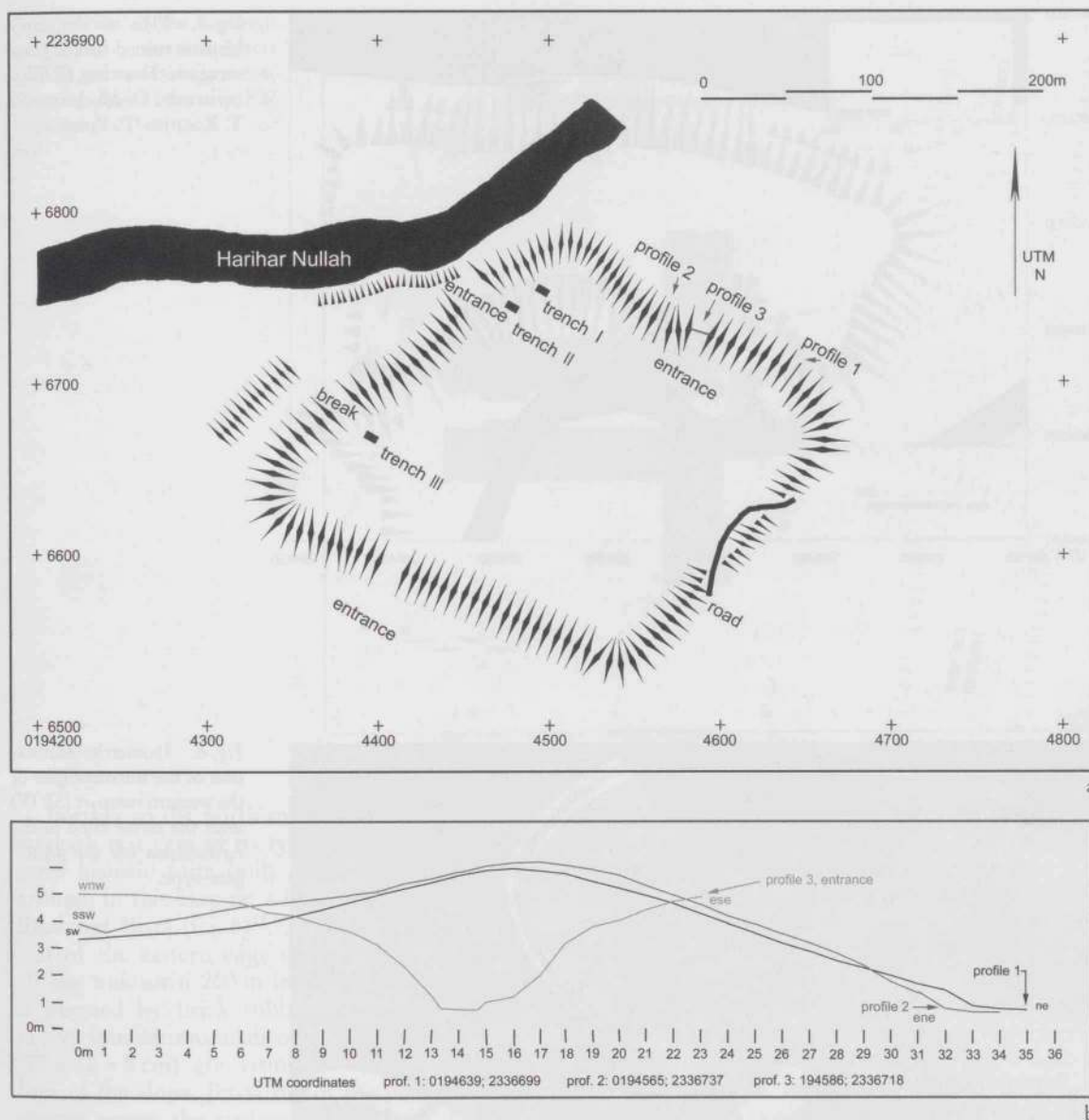
Fig. 4. a. Plan of the early historic ruined glacis at Badmalgarh (drawing P. Behera/M. Blumenroth/D. Modarressi/ T. Rosarius/P. Yule). – b. Badmalgarh, profile drawings of the glacis. To the right in profiles 1 and 2 lies the exterior of the fort, to the left the interior.

those of Narla/Asurgarh, Jaugada/Samāpā, and Śiśupālgarh, the shape differs significantly. The pottery resembles that of Śiśupālgarh IIa most closely.

Turning to the north-west, in mid 2002, in Dist. Sambalpur, P. Behera of the Sambalpur University trenched Badmalgarh (180 × 220 m = 4 ha) near the glacis (fig. 4 a). On the basis of the pottery, which are under study, as well as radiocarbon, the site arose presumably in the iron age and continued in use into the early historic period, perhaps making it the earliest known fort of its type[11]. A stratigraphic study from the trenches through the adjacent glacis would now be appropriate. Badmal's four sides, pierced by entrances, were rein-forced by a flanking defensive trench, visible on the north-western side. As is typical of such early historic forts, the interior of the fortification is elevated relative to the exterior (fig. 4 b).

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[11] Radiocarbon calibrated assays:
1 Badmal trench BDMII Stratum ⑤ -125 cm b.s. σ1 standard deviation 799–766 BCE KIA20153
2 Badmal trench BDMII Stratum ⑤ -115 cm b.s. σ1 standard deviation 799–766 BCE KIA20154
3 Badmal trench BDMII Stratum ③ -50 cm b.s. σ1 standard deviation 640–588 BCE KIA20155
Note: Organic material which came into being between 750 and 400 cal BC accumulates usually the same ^{14}C content. A dating 750–400 BCE is possible. Our first two determinations predate this and require further study.
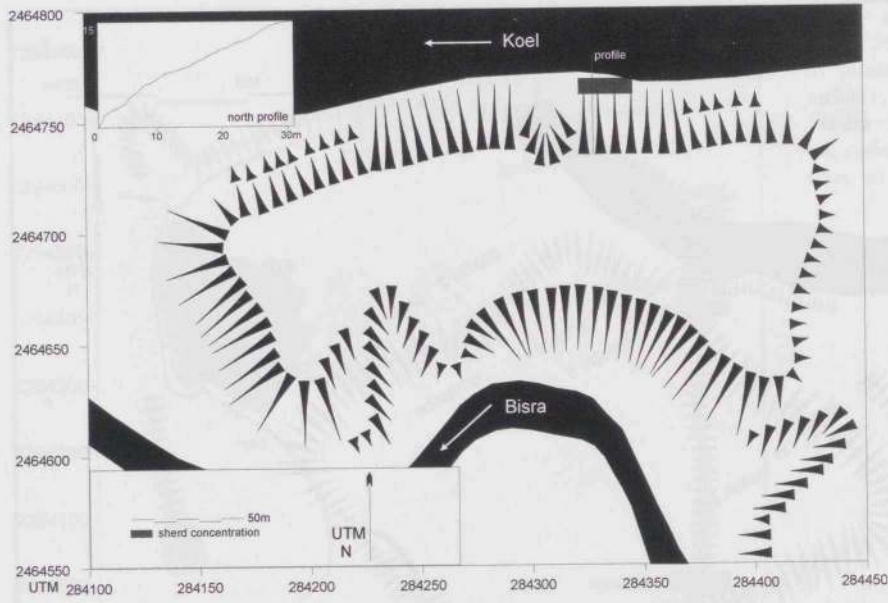
Fig. 5. Plan of the early historic ruined fort at Jamsaragarh. Drawing M. Blumenroth / D. Modarressi / T. Rosarius / P. Yule.
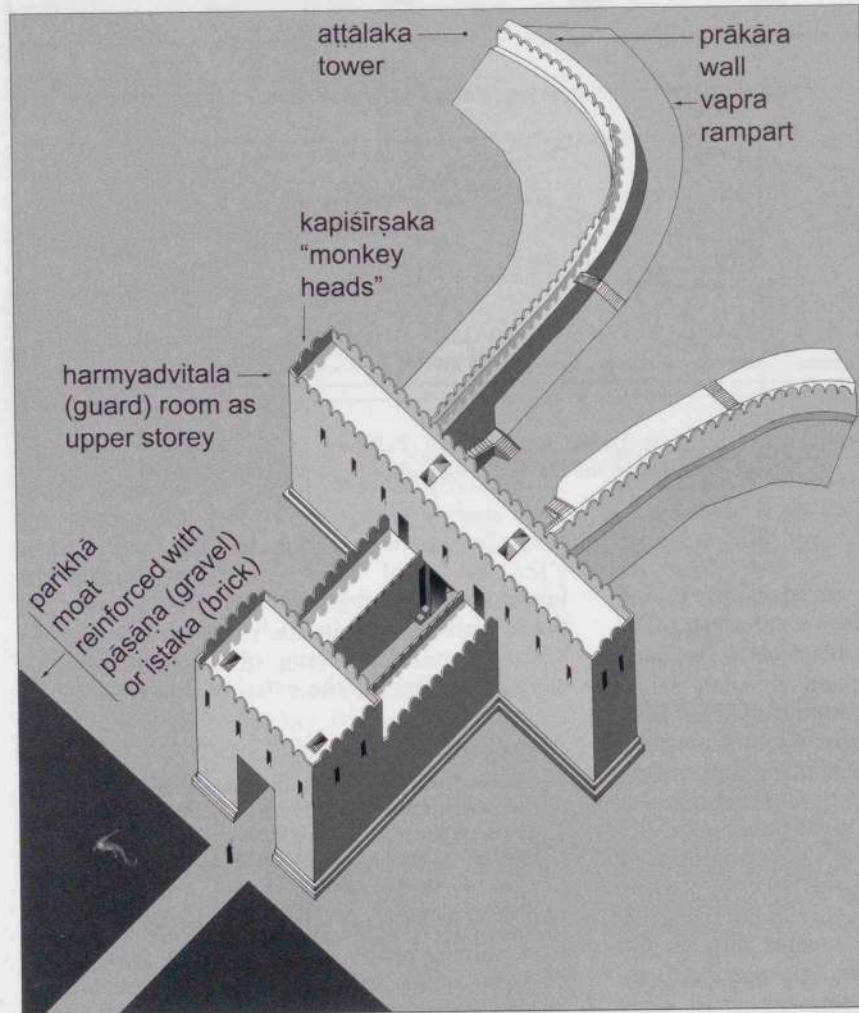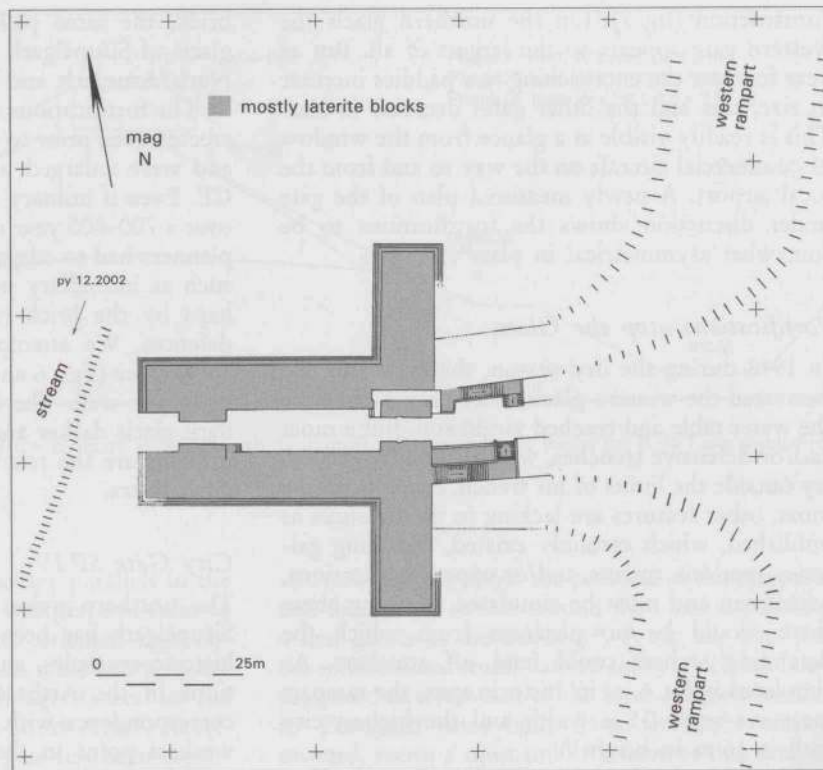

Fig. 6. Isometric simulation of the northern gate of the western rampart (SP IV) with the terms cited in the Arthaśāstra for the *pratoli* gate type.

Fig. 7. Plan of the northern gate of the western glacis (SP IV) and transition between. Drawing Kiel University Expedition.

mostly laterite blocks

mag N

py 12.2002

stream

western rampart

western rampart

0   25m

Further to the north in Dist. Sundargarh, Jamsaragarh is a gem of its type, characteristic of the early historic forts built on naturally defensible ground, in this case on a hill crest flanked by the Koel and Bisra (fig. 5)[12]. The site lies some 6 km east of the eastern edge of Rourkela. Sadly, this all but unknown 200 m long site (interior 2.2 ha) is plagued by brick robbing and gully erosion. Heavy foundations made of quadratic baked bricks (22 × 22 × 8 cm) are visible at the south-eastern foot of the slope. By virtue of the plain red ware strewn across the surface, a dating in the early centuries CE is suggested.

Śiśupālgarh as a Model Early Historic Fortification

Early historic Śiśupālgarh (ancient Tosali as well as Kalinganagari) is of all the forts that best preserved, is partly documented, and illuminates the others, particularly Narla/Asurgarh in western Orissa. Being the largest (1150 × 1190 m = 136 ha, measured on top of the glacis), most elaborate, and most geometrically regular fortress in the entire region, Śiśupālgarh reflects an ideal, how other contemporary forts would have appeared, given enough means and construction time. A resemblance in plan to Jaugada is unmistakeable. For reasons of chronology and of stratigraphy, most experts push back the bracket for the beginning of a horizon of settlements to the 5th c. BCE, preceding that proposed by Lal and Wheeler half

a century ago[13]. For whatever reason, little subsequent work has taken place on the site since excavation in 1948 and however briefly in 1949[14]. The excavation centred on the northern gate in the western glacis, investigated nearby early historic buildings and also transsected the glacis about 200 m to the south of here.

In 2002 we selectively re-examined the fortifications, including the north gate of the western glacis[15], and moat, as well as the columned ruin. On the glacis the vegetation obscures the aforementioned gate, and had to be cleared, allowing us to measure and draw. The thick foliage vividly brought to mind the poisonous vines and thorns used in the defences mentioned in the Arthaśāstra. Viewed from the air, the eight city gates appear to be regular in form, but closer scrutiny reveals differences in their size, shape, and details of

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12 Mohapatra 1986a (2), 195.
13 Absolutely basic is the excellent, brief preliminary report: Lal 1949. For the raising of the chronology see Begley 1983, 461 ff. Prior to this, the chronology was based on the stratigraphy of Arikamedu, now shown to be defective, and the presumed dating of *terra sigillata* ("Arretine").
14 The report of the brief season of 1949 did not appear. For this see Lal 1990, 589. Cf. M. Smith, http://www.sscnet.ucla.edu/ioa/smith/. An American-Indian team is currently excavating.
15 We remeasured the entire gate and its transition to the glacis, emending Lal's published drawing (Lal 1949, 76 fig. 4), and that of Schlingloff (1967, fig. 19).

construction (fig. 7). On the northern glacis the western gate appears to the largest of all. But as year for year the encroaching rice paddies increase in size, this and the other gates decrease in size. This is readily visible at a glance from the window of commercial aircraft on the way to and from the local airport. A newly measured plan of the gate under discussion shows the fortifications to be somewhat asymmetrical in plan[16].

Fortifications atop the Glacis

In 1948 during the dry season, the excavator Lal excavated the western glacis more than 3 m below the water table and reached virgin soil. But a moat and/or defensive trenches, which certainly existed, lay outside the limits of his trench. Aside from the moat, other features are lacking in the defences as published, which certainly existed, including galleries, merlons, towers, and/or upper fortifications, which can and must be simulated. Without these there would be no platform from which the defending archers could fend off attackers. As simulated in fig. 6, at its historic apex, the rampart measures some 35 m width and the highest city wall is 16 m in height[17].

Two strands of information illuminate the simulation: First, other excavated early historic forts and second, the Arthaśāstra as well as other literary sources. The size and shape of the ramparts of Śiśupālgarh have been compared to other early historic fortifications in India, whereby also typical is a stone wall without a rampart or glacis, as at Rājagṛha[18]. Towers at Śiśupālgarh can be added with reference to those observed at Jaugada. Moreover, regarding the original appearance of the fortifications, we must consider the oft-cited description of Megasthenes, ambassador of Seleukos Nicator, in reference to the wooden fortifications of Pāṭaliputra (present-day Patna), once the largest city in the world, which were excavated in the early 20th century. Both Megasthenes and the excavation results certainly contradict the ban on wood for fortifications suggested in the Arthaśāstra.

The reference in Pāṭaliputra to a palisade rests furthermore on Megasthenes' comment that, "... *all their towns which are down beside the rivers or the sea are made of wood...*"[19]. A published excavation photo invokes the misleading impression that the "palisade" lay in a low ground[20]. If the plan and profile drawing indeed are palisades, they make the most sense at the crest of a glacis nowadays deeply buried in the alluvium of the meandering Ganges, well below the surface. In this question the main problem is that the excavation simply did not yield enough information to illuminate the architecture. The wooden architecture might actually be an archers' gallery, which no doubt existed, as attested in contemporary military architecture, for example among others the successive city walls of Rome. Whether of wood or of brick, the same palisades must have graced the glacis of Śiśupālgarh and its cousins, for example, Narla/Asurgarh and Jaugada.

The fortifications at Śiśupālgarh may have been erected even prior to the 4th century BCE Mauryas and were enlarged until the 3rd and 4th centuries CE. Even if military action never took place here, over a 700–800 year development in siege warfare, planners had to adapt Śiśupālgarh for eventualities such as incendiary projectiles, as attested to perhaps by the brick remains of the final phase 4 defences. We attempted to simulate the ancient appearance (figs. 6 and 8) of the rampart including its upper wall. The latter is rendered white, the dark glacis darker and covered with thorns[21]. The merlons are the rounded "monkey heads" of the Arthaśāstra.

City Gate SP IV

The northern pylon of the western rampart at Śiśupālgarh has been compared with other early historic examples, and in relation to the descriptions in the Arthaśāstra, reveals a rather good correspondence with the written source[22]. As the weakest point in the fortification, the gates received special attention from both the attackers and defenders. They must both successfully serve as a platform from which the archers could hold the enemy far at bay and also be defensibly at close quarters. Kauṭilya describes in detail tower-gates and different kinds of city-gates, especially the *pratolī* type[23].

Schlingloff pointed out two possibilities capable of being defended:

1. Two horizontally extended gate towers (a barbican), their interface forming a long chamber, as at Śiśupālgarh.
2. A long gate building with a courtyard, as at Srāvastī, Nagarjunikonda, Taxila, and probably also Bhita[24].

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16 Papers of the Orissa Research Project.
17 Lal 1949, 73 fig. 3.
18 Schlingloff 1967, 53, fig. 5, citing new Rājagaṛha as typical. Wheeler 1948, 93 fig. 2 for the plan and section drawings.
19 For references cf. Brandtner 2000, 332, citing Arrian, *Indikē* 10.6–7.
20 Wheeler 1948, 96, pl. 27a (photo), 99 fig. 4 (plan and profile).
21 The colour of the wall on rampart according to a text by Kālidāsa comparing the fortifications with a snow-capped mountain. Personal communication D. Schlingloff 12.08.2003.
22 Schlingloff 1967, 62 ff.; Brandtner 2000, 338 ff.
23 Brandtner 2000, 352 ff. does not accept the Śiśupālgarh gates as of the *pratolī* type because he envisions the gate as being single-storied. In our fig. 6 we, however, have inserted the termini from the *pratolī* type in the drawing.
24 Schlingloff 1967, 65 f., figs. 20–23.

Phase I   max. W x H= c 35 x 8 m
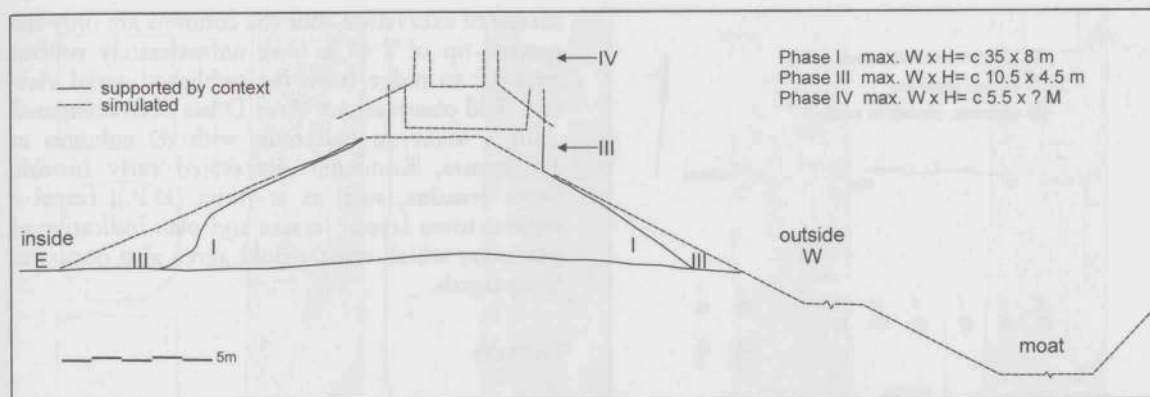Phase III max. W x H= c 10.5 x 4.5 m
Phase IV max. W x H= c 5.5 x ? M

Fig. 8. Simulated cross section of the rampart at Śiśupālgarh at it most developed stage, based on B. B. Lal's published cross section.

The latter ones find contemporary parallels in the Hellenistic world. The access was perpendicular to the gates and walls. Entrances oriented first obliquely to the rampart and then which turn to the right through it (as at iron age Gezer in the Levant), are hardly known in South Asia[25]. Kauṭilīya's description of an ideal gate has been reconstructed on paper; he also gave dimensions. That at Śiśupālgarh differs in its form from that which Kauṭilīya described, but the various termini still can be readily identified there (fig. 6). Ideally, the gate is recessed behind the line of the rampart and has a square rather than an long chamber, as actually exists at Srāvastī. In addition to a ground floor, Kauṭilīya's gate has an upper storey, raising the height of the gate to that of the wall on the rampart. This would afford the archers a tremendous advantage over marauders.

Moat

Equally problematic is the size and position of the moat. The moat was not the present-day Ganguā Nālā, which flows around Śiśupālgarh. Anciently it fed and drained the moat. For a moat to be effective, it should be simple, affording the defending archers a clear field of fire free of any kind of cover for the attackers. Turning again to the Arthaśāstra, prescribed dimensions for triple defensive trenches are 25.20 m, 21.60 m, and 18.00 m (= 64.8 m), which for South Asia fortifications are not archaeologically verifiable. Their depth should come to between ½ and ¾ of the breadth. The moats are to be lined with gravel or bricks and are to be fed from (spring-)water, or are to be filled and drained with water from a river. Lotus plants and crocodiles give the final touch. The earth displaced from the moats serves to build the ramparts, which is trodden by elephants and cattle. Atop this rampart a brick or stone wall is erected twice as high as wide. In light of all this, how did Śiśupālgarh appear in its developed form?

Aerial photos show the position of the ramparts and that of the stream around the fortress enabling a first glance at the defences[26]. A zig zag band on the southern and south-eastern sides, which has been suggested as a remnant of the moat, vaguely similar to European ones built from the 16th century onward, seems a most unlikely form at this time in India. Today the borders of fields especially on the north-western and north-eastern corners parallel the ancient ramparts. Several field borders awaken the impression of being fossils which reflect the size and position of the moats. Others have been obliterated by centuries of the stream's meander behaviour. Trenches are a normal attribute of the defensive architecture even before this time, inside and outside of India. Might it be possible to detect the moat(s) by means of physical methods?

To test this we made a north-south oriented 5 × 150 m magnetometer transsect from the northern edge of the southern rampart near its eastern gate. If one or more parallel moats were consolidated with brick, stone, or some other material, this should hopefully provide contrast for the instrument. In the resulting magnetometer plot one is looking for straight lines, signs of human agency. The plot shows a light and a darker area where we hoped for the approximate centre of the moat. Had we measured a further 50 m, we might have encountered another magnetic anomaly, as one would expect at the edge of the rampart (a second light shading) – thus a moat and its two banks. But it seems unlikely that the moat would be 200 m wide. Despite a lack of strong contrast between moat(s) and the interstices between, there can be little doubt that there was at least one or moat surrounding Śiśupālgarh. Further measurements with other methods (radar) may yield better results.

[25] Yadin 1963, 374. For two possible examples in India see Brandtner 2000, 350 (Kosambi and Harappa).

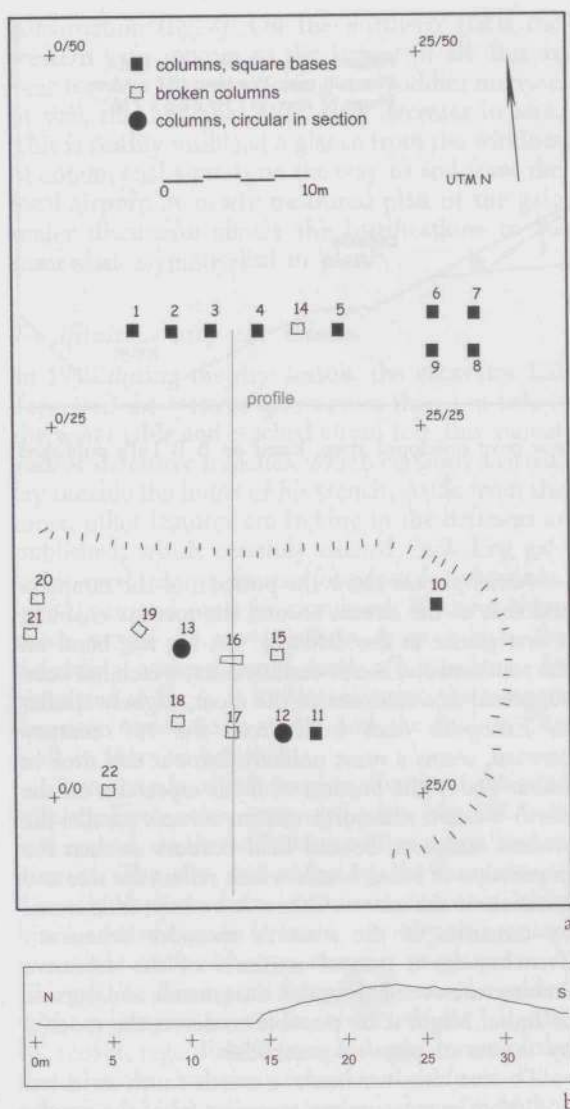[26] Lal 1949, opposite p. 66, pl. 27.

Fig. 9. a. Plan of the column structure, Area D in Śiśupālgarh. Drawing P. Yule / T. Rosarius. – b. Profile to east of the column structure, Area D in Śiśupālgarh.

Columned Structure, Area D

The Arthaśāstra's symmetrical city planning is clear, and describes the royal residence slightly north of the centre of the town. At Śiśupālgarh Area D ("shola khamba" = 16 columns) is a columned ruin in the approximate centre that has been taken as a palace (figs. 9 a and 9 b). It remains without parallel in western Orissa, but not so in larger eastern India; so also the heavy columns, known from two main types (fig. 10). The irregular appearance of the layout suggests that the structure was left unfinished, was robbed, or that the other columns were of wood, and have not survived. Their post-holes could be sought one day by

means of excavation. But the columns are only the eastern tip of a 45 m long unfortunately robbed context, to judge from the published aerial view and field observations. Area D has been compared with a Mauryan hall built with 80 columns at Pāṭaliputra, Kumrahar. Excavated early historic town remains, such as at Bhita (U.P.), reveal a regular town layout in size and plan indicative of planning, which most would agree also occurs at Śiśupālgarh.

Results

Two types of fortifications are characteristic of early historic Orissa:
1. Those of Kharligarh type are built on naturally occurring high ground between flanking natural bodies of water.
2. On the other hand, anthropogenic quadrangular forts, such as at Jaugada and Narla/Asurgarh, form the other so-called Śiśupālgarh type. Badmal seems an early example of this latter series[27]. Radhanagarh belongs in a class of its own. Originally, the ramparts of all of the these were probably reinforced by a trench and/or moat. Indeed, the site of the fortification depends on the availability of water resources and drainage. With the exception of Radanagarh, all of these have an interior which was elevated as much as 4 m above the exterior, the height partially a result of settlement deposition. It stands to reason that these early ramparts had wooden and/or brick archers' galleries, and defensive towers in regular intervals, as best preserved presumably at Pāṭaliputra and Rajagṛha, outside our study area, and at Jaugada. In any case, the early historic fortifications of eastern and western Orissa are by no means isolated kinds of structures, but developed from indigenous building traditions and defence considerations. Despite certain anomalies (the number of moats, proportions of city gates), the Arthaśāstra corresponds well with the early historic remains of fortresses.

Given the simple principles of the two types of fortifications, to postulate precedence for the one or the other in western or in eastern Orissa, would to be too simple and too good to be true. Curiously, most of the known early historic forts lie in early historic western Orissa, perhaps a political and cultural seminal region. On the other hand, elaborate forts, such as Jaugada and Śiśupālgarh occur in the East; those in the West are simpler.

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[27] Mahasthangarh in Bangladesh seems to be of this same quadrangular type (see Jacqueminet, C./Salles, J.-F./ Dalongeville, R./Dupuis, B./Pedoja, K.).
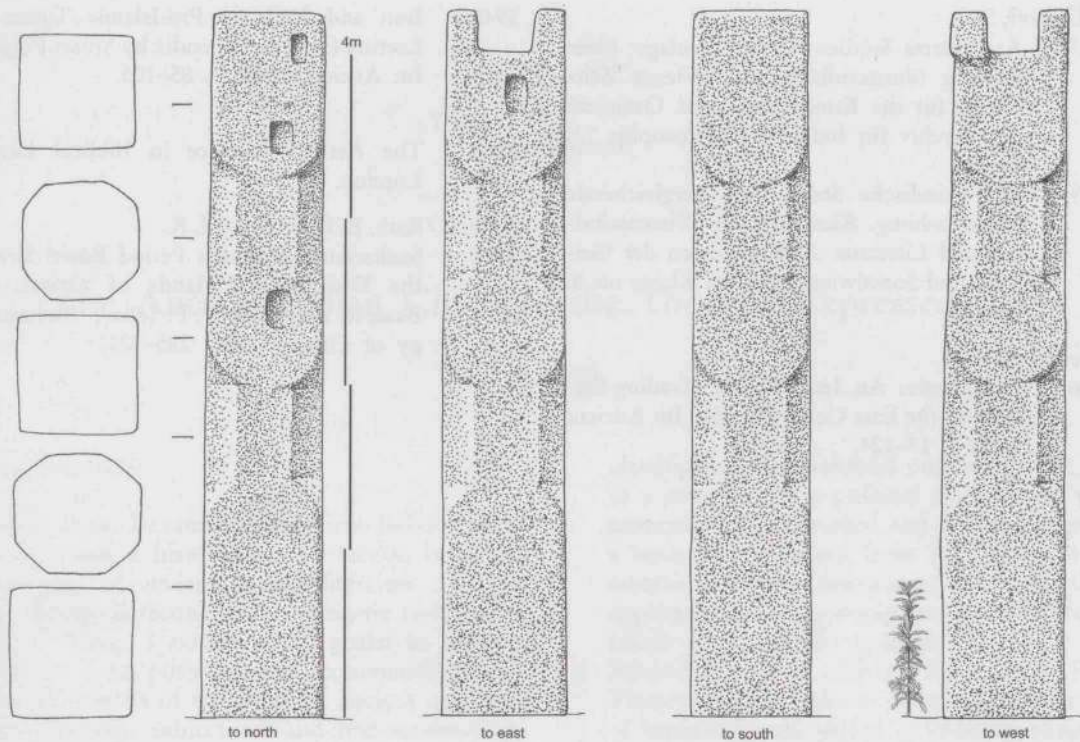
Fig. 10. Column no. C08, Area D in Śiśupālgarh.

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