An Introduction to the Fortifications of Central Nepal

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Reconnaissance fieldwork has indicated that there are at least five different types of fortification between Kagbeni in the north and Butwal and Sindhuli Garhi in the south: artillery forts in the border districts of the south; earthwork forts on the edge of the Kathmandu Valley; hill-top terrace forts in the central hills; and defensible settlements and tower houses in the Tibetan border lands. It appears probable that these fortifications date from four distinct historical periods: the thirty or so years following the end of the Anglo-Nepal War in 1816; the years between the late 18th century and the first years of the 19th (before 1814); the mid-18th century; and a period of unknown length before the mid-18th century. The relationship between the stylistic and the chronological divisions is not direct. The accompanying sketch plans should be treated as diagrams indicative of general arrangement, not as accurate surveys.

The artillery forts (fig. 1)

An artillery fort is a fort designed both to resist attack by artillery and to be defended by artillery. However, in the context of the Nepal hills it must be remembered that in practice both defence and attack would rely heavily on small arms and traditional hand weapons. The Nepali government learned a serious lesson about the significance of cannon in warfare during the war of 1814-1816, and afterwards built a number of impressive forts in the south of the country to prevent future incursions by the British. Each fort guarded a main route through the front ranges of the Himalaya.

Jitgarh (*Jītgaṛh*) **in Butwal** (*Buṭaval*) may have been the first to be built; it appears not to have been there before 1814 and local historians attribute its building to Bhimsen Thapa. Jitgarh stands in Butwal town, on the west bank of the river where it debouches on to the North Indian plain, and where the main trade route begins to Tansen-Palpa (*Tānsen-Pālpā*), central Nepal and Tibet via the Kali Gandaki (*Kālī Gaṇḍakī*) river. Its original complete form is unknown. What remains today is shown on the sketch plan; any other defensive works there might have been are covered by the closely packed buildings of the town. There may have been a ditch, but none is to be seen now. The rampart is built of hard-fired, tile-like Nepali brick, with a slight batter on the outer face. The top was plastered with mortar. Three guns fired from each bastion (their platforms survive) through distinctive trifurcated embrasures which provide wide fields of fire without exposing the guns and the gunners, who would be exposed if the embrasures were single wide openings. A firing step runs round the interior of the ramparts for the use of musketeers.

Probably a little later a systematic fortified barrier was instituted, consisting of forts of a different design, close to or on the chief passes through the front ranges. These forts were either entirely new or older ones up-graded.

Chisopani Garhi (*Cisopānī Gaṛhī*) guards the old main route to Kathmandu and the winter capital of Nuwakot (*Nuvākoṭ*). The present building presumably replaced the brick fort reported by Kirkpatrick and Hamilton around the turn of the century. It stands on a shoulder of the mountain overlooking the path which passes its south-eastern side, the barracks and check post lying behind it. The interior of the fort seems originally to have been empty of buildings. In front of the fort the slope of the hill has been smoothed and revetted to deny cover to any attacker. At its foot there is a well. Inside the fort there were (in 1983) several bronze field guns on rotting carriages and piles of rusting shot. The trace of the ramparts is formed of shallow triangular bastions with cannon embrasures on the three sides of the fort facing attack from the south. Outside there is a ditch which provides both additional defence against escalade and a covered way for the garrison when counter-attacking. The mortared masonry is finely finished and fitted together.

Makwanpur Garhi (*Makvanpur Gāṛhī*) stands on a hill top guarding the old road to Patan (*Pāṭan*). Here the same elements of fortification have been arranged around a rectangle to provide a slightly bigger and more complex fort. Behind the ramparts there is a broad fighting platform, in the middle of which there is a sunken area containing barracks, stores, etc. In front of the gate there is a small ravelin to protect it from cannon bombardment; a sally port on the east side gives access to the ditch. Again, the masonry is fine and mortared, but here the stones are irregular and cut to fit each other.

The ornamental cornices of Makwanpur fort, the cordon detailing of the gate (shown restored in fig.1), the incised edge of the flat top of the ramparts and the stonework of the barracks suggest the influence of the French engineers who are known to have built the arsenal in Kathmandu and to have advised the Nepali government. Presumably they advised at Chisopani Garhi too.

On a lower hill, a few hundred metres to the west of Makwanpur fort, there is a large outpost built of equally good masonry in the same style but with a much less systematic or regular trace. There are the remains of another outpost just below Chisopani fort, but this is much more roughly built. Possibly both were purely Nepali additions made later to improve the tactical utility of the forts, built in the manner of, but not by, their original builders.

H. W. Tilman published a photograph of, and described, a fortification at **Rasuwa Garhi** (*Rasuvā Gaṛhī*) on the Tibetan border which appears to be somewhat similar in building style to the outpost at Chisopani. He records the local tradition that it was built in the middle of the last century (Tilman 1952: 53, plate 7).

Transitional forts (fig. 2)

These two forts seem to show an awareness of contemporary fortification technology in British India, but less than a full understanding.

Nuwakot (*Nuvākoṭ*) **above Butwal** (*Buṭaval*) guards the first pass on the old road to Tansen Palpa etc. It is only about half the size of Chisopani Garhi, yet it has six circular gun bastions to provide all-round cover, double ramparts to provide defence in depth (the inner protecting a sunken refuge), and shallow small-arms embrasures on the top of the outer rampart where it is necessary to command the easiest approaches. Such complexity in so small a space would probably have prevented the defenders making effective use of the defensive structural elements. The fort is built of stone and is presumably the one described by a British Indian spy in 1813: it was armed with 16 guns (Stiller 1973: 28-29). Iron balls of approximately 50 mm diameter kept in a local shrine as Shaivite relics indicate that the guns were probably simple long-barrel muzzle loaders, bigger than a camel gun but lighter than a three-pounder field gun, somewhat similar to the *falconet* of Europe.

Sindhuli Garhi (*Sīdhulī Gaṛhī*) is a double fort: two enclosures fortified by low walls stand on top of adjacent knolls with the old road to Bhadgaon (*Bhādgāũ/Bhaktapur*), via the Sun Kosi, passing between them; it may be the Pauwa Garhi (*Pauvā Gaṛhī*) where Kinloch was defeated in 1767 (Stiller 1973: 126-127, 344). Here we are concerned with the larger, south-eastern, fortification. The ramparts are built of roughly dressed dry stone. The strangely irregular trace of the outer rampart may indicate some knowledge of the theory of flanking fire in defence of faces; it is certainly different from the traces found elsewhere in forts of the 18th century and earlier (see below). However, the flanking wall projecting by the gate belongs to an earlier Nepali tradition in hill fortification; it is there in order to ensure that an attacker approaches with his unshielded side exposed to the defenders. There is no provision for cannon. The small loopholes for muskets in the parapet cover the easiest approach to the fort; further off there is a ditch. There are no buildings inside the ramparts; in the centre there is a circular inner refuge, but the purpose of the other interior structures was not apparent.

Approximately half an hour's walk downhill towards Sindhuli Bazaar (*Sīdhulī Bajār*) the path passes through a strong gate, consisting of a stepped, masonry passage below defensive positions and a loopholed breastwork of dressed masonry. It is possible that this may represent a strengthening of the fort's defensive capability after 1816.

Earthwork forts (fig. 3)

A short distance to the north-east of **Namobuddha**, on the old path from Bhadgaon and Dhulikhel to the Sun Kosi and Sindhuli, there is a striking earthwork fortification on a hilltop. It consists of a man-made conical earth mound, approximately 38 m in diameter at its base and 6 m high, having a slightly hollow top approximately 12 m in diameter (on which a tree grows).

On the top and sides of the mound there is debris of brick and tile from former buildings. It is surrounded by a ditch about 3 m wide and 2 m deep today, cut into the hillside; the material from the ditch has been thrown up outside to form a bank. On the north-east side there appear to be the remains of a gateway in the bank and there may be remains of buildings outside. There is another break in the bank, of unknown age and purpose, on the east side.

This is the type of fortification known in Britain as a *motte*, and is of much the same size too. These are simple but effective fortifications for use with small arms and hand weapons, giving their defenders the advantages of height and a good view. There is ample room for a small accommodation building on the summit. Approximately half a kilometre to the south-east there seem to be the remains of a second such fortification, more degraded, but with similar brick and tile debris. The road passes between them.

At **Dhulikhel** there is another pair of earthworks of a similar size: one is close to the town with a temple on its top, and the other is less than one kilometre to its north-east. Local tradition says they were built by King Prithvi Narayan Shah to blockade the Valley during his campaign of conquest.

The circular structure carrying a building in the middle of the defences on top of **Sheopuri Lekh** (*Śivapurī Lekh*) seems also to be a *motte*; and the circular mound under the temple at the northern end of the old winter capital of Nuwakot by Trisuli Bazaar (*Nuvākoṭ, Triśūlī Bajār*) may be another. Both these sites are associated with King Prithvi Narayan Shah. He may have built more. The origins of this type of fortification in Nepal cannot at present be deduced.

Hill-top terrace forts (fig. 4)

Hill-top terrace forts have been inspected at **Tanahun Sur** (*Tanahũ Sur*), **Kaski** (*Kāskī*) (i.e. the central defensive structure of the three structures on the ridge above the village), **Lamjung** (*Lamjuṅg*) and **Gorkha** (*Gorkhā*). Each consists of terraces of different heights which once carried buildings (probably not the buildings to be seen today). The terraces are revetted with dry-stone masonry to present a sheer, wall-like face to the attacker, above which the defender would stand, and a flat surface for palace and temple buildings, etc. The hill-top site gave the defenders all the advantages of superior height: a good view and the assistance of gravity. At Kaski there is an entrance gate barring the (restored) approach path, outside that a stepped passage between platforms for the defenders (like a smaller version of the gate on the path below Sindhuli Garhi), a ditch cutting the approach over the easiest ground to the north-west, and a loopholed wall around the summit terrace. At Tanahun Sur there appears to be a small earthen defence bank reinforcing the south-eastern corner of the lower terrace, and other surface features which would repay investigation. Some of these elements are to be seen at Lamjung.

Gorkha is the sole complete example of such a fortified palace of a small hill state, having revetted terraces with palaces, temples and other

buildings, and gates barring the approach path; but all the structures to be seen there today have been extensively restored or rebuilt since the death of King Prithvi Narayan Shah. There must have been many more of these terraced defensive places in Nepal since they are also to be found in locations in the Himalaya to the west of Nepal, some of which may have their origins many centuries earlier.

Tanahun Sur was deliberately replaced by the new Gorkhali foundation of Bandipur; and it, Tanahun Sur and Kaski lost their defensive function after the capture of these states by the Shahs in the late 18th century.

Other types of fortification in the central hills (fig. 5)

At **Lig Lig Kot** (*Ligligkoṭ*) there are three strong, rectangular defensive structures, like low towers built of dry stone. Each consists of a platform with a rectangular projection on each side and all its faces are steeply sloping, not vertical. On top of the platform is a smaller vertical-sided structure on the same plan, with very thick walls. Traces of loopholes were found in the parapet of one of these structures. One was surrounded on three sides by ditches. No entrances were to be seen in any (fig. 5, a). These isolated structures are not part of a larger, encircling, or linear, defence work. It is difficult at present to understand how they were used.

A similar structure was found at the summit of the ruins (of a town?) of **Lamjung Puranakot** (*Lamjuṅg Purānākoṭ*), above Lamjung. On the evidence of its name, it may be possible to propose that fortifications of this type pre-date the terrace forts, but supporting evidence is not as yet available.

Perhaps one more fortification tradition is to be deduced from the evidence of several small defensive structures in the central and southern hills. These are essentially gated rectangular enclosures of stone breast-works, and variations on this theme. They would repay further fieldwork. The simplest, and largest, is **Sarankot** (*Sarānkoṭ*) at the eastern end of the Kaski ridge above Pokhara (*Pokharā*), commanding the old road to the Kali Gandaki river and Mustang (fig. 5, b). It consists of a sub-rectangular enclosure of dry-stone ramparts with a firing step on the inside and a revetted platform outside, beyond which there are ditches and, perhaps, a bank. The gate has a flanking projection like that at Sindhuli Garhi; the thickness of the walls on either side of the entrance suggests that these must have been for defenders to stand on, as they would have done above the gate passages at Sindhuli Garhi (south-eastern structure, above) and the fortified gate on the path from Sindhuli Garhi to Sindhuli Bazaar.

At **Kaski** there is a slightly more complex defensive position (to the west of that already discussed) which consists of a sub-rectangular enclosure of dry-stone ramparts with a single projecting gate bastion, having one loophole to cover the blind side. There is a firing step inside (which continues on an unusual high line through the gate), possibly a sally port, and a large platform outside (fig. 5, c). There are also ditches to cut off the easier

approaches. There is a similar defensive work at **Nuwakot near Syangja** (*Nuvākoṭ, Syāṅgjā*), south-west of the Pokhara Valley.

Among the defensive structures at **Lig Lig Kot** there is a more complicated version (fig. 5, d - very approximate) with projecting bastions on three faces, one of which may have contained the gate; there are also two loopholes. At Lig Lig Kot there is also another rectangular fortification surrounded by ditches and banks but it has not been investigated.

Near **Nuwakot above Butwal**, half a kilometre up the slopes from the transitional fortress already described, there are the remains of yet another of these fortified positions (fig. 5, e). It is badly ruined and its gate has not been located, but its plan is clear. It is separated from the higher ground to the north-west by a ditch.

Finally, a more complex enclosure of this general type is to be found at **Sindhuli Garhi** to the north-west of the fortification already discussed and presumably of the same age.

The Tibetan Borderlands

In the Tibetan borderlands around Kagbeni, tower houses and defensible settlements have been identified but there is no secure evidence for fortresses with free-standing walls, as in Ladakh (c.f. Howard 1989; and forthcoming).

Tower houses are to be seen in the district of Baragaon (*Bārāgāũ*) at **Kagbeni** (*Kāgbenī*) fort, **Jarkot** (*Jarkoṭ/Jharkoṭ*/"Dzar") fort, **Lubra** (Tib. *Klu-brag*) and, perhaps, on the highest point of **Dzong** fortress (Tib. *Rab-rgyal-rtse*). There are others in Mustang and it may be the dominant local type. A tower house may be defined as a residence built for defence, in which the lower floors are purely for storage and often have no access to the outside; living quarters begin two or more floors up; and the entrance passage or stair has some form of defensive position where it enters the living quarters; there may also be some provision for defence from the roof. Not all of these features have yet been identified in these four examples.

All four are built of shuttered mud above mud-mortared stone foundations - i.e. mud moulded in layers inside a shuttering of wooden boards. There are two variations in the building technique here from that used in Ladakh: the layers of mud are not overlapped at the corners of the buildings, which are, consequentially, weak; and timber lacing is used in both the mud and the stone foundation. These tower houses have the usual structure of small cells in the lower levels (fig. 6) with larger rooms spanning two or more cells at higher levels. In Ladakh such a construction method seems to be confined to the second half of the 16th century and possibly the beginning of the 17th. Interestingly, preliminary dendrochronological investigations in Nepal reveal building activity during this period at Jarkot and at Kagbeni (*Ancient Nepal* No. 130-133, pp. 20-30).

Kagbeni was a trading centre and boundary fort between Baragaon and Lo/Mustang. Dzong was the seat of the ruler of Baragaon (Schuh 1990: 6) but also the guardian of the alternative route to Lo: Crawford's map of 1802-1803

and Tanner's and Namgyal's of 1887-1888 both show the road up the Kali Gandaki river turning east at Kagbeni, ascending to Muktinath and then turning north towards Lo (*Ancient Nepal*, No. 130-133, pp. 40-41). There is no reason to suppose that this is not an ancient route. Lubra, on the Panda Khola, may have been a boundary fort between Baragaon and Som-bu (Garab Dzong and district). All became obsolete at the end of the 18th century when the district came under Gorkhali rule.

A **defensible settlement** is a village or town which has been built with the houses and buildings of its perimeter against each other, having no doors and few windows facing out (and only high up), so that an attacker cannot enter except through a gate which can be defended. The roofs of the buildings can be used by the defenders for counter-attack. **Kagbeni** town, west of the Red House, is a clear example (in 1982); **Jarkot** town and **Garab Dzong** (Tib. *dGa'-rab rdzong*) appear to have been others. Archaeological investigation may reveal whether Dzong was a defensible settlement or whether it had free-standing walls which have been destroyed.

Garab Dzong appears not to have had a fort, unlike Kagbeni and Jarkot, but it is so ruined that it is difficult without excavation to deduce much from the site. The dendrochronological work already referred to yielded building dates between 1533 and 1779. It is a strikingly large ruin, and the absence of major buildings in shuttered mud may indicate that its period of wealth and importance was over by the 16th century. It may once have been the chief citadel of Thag (Snellgrove 1979: 80). Tradition in Thini has it that Garab Dzong was the original centre of Thakali power in the district; it may have a history dating back into the first millenium AD (Jackson 1978). The large quantities of pottery fragments seen in the ruins - some of them mixed into the mud of walls, accompanied by bone fragments - would suggest a long period of occupation. Garab Dzong would repay excavation.

Acknowledgement

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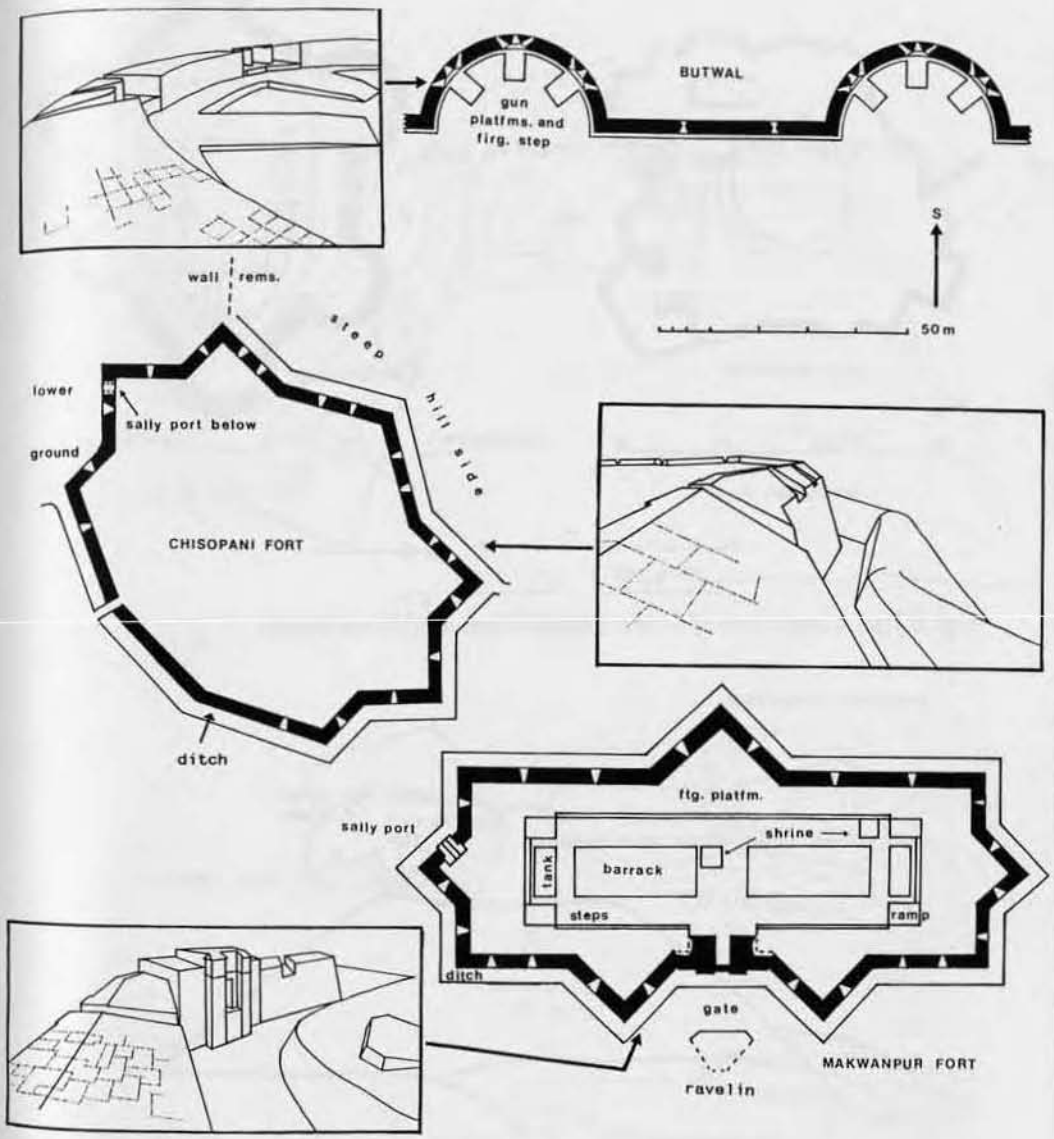

fig. 1 Artillery forts of Jitgarh in Butwal, Chisopani Garhi, Makwanpur Garhi

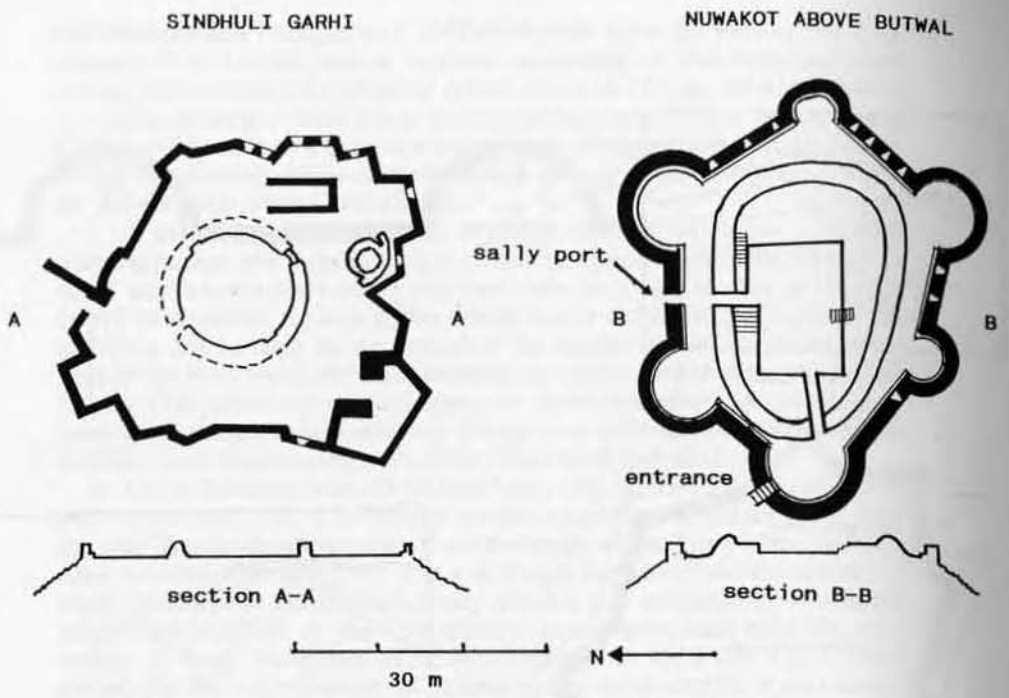

fig. 2 Transitional forts of Sindhuli Garhi, Nuwakot above Butwal

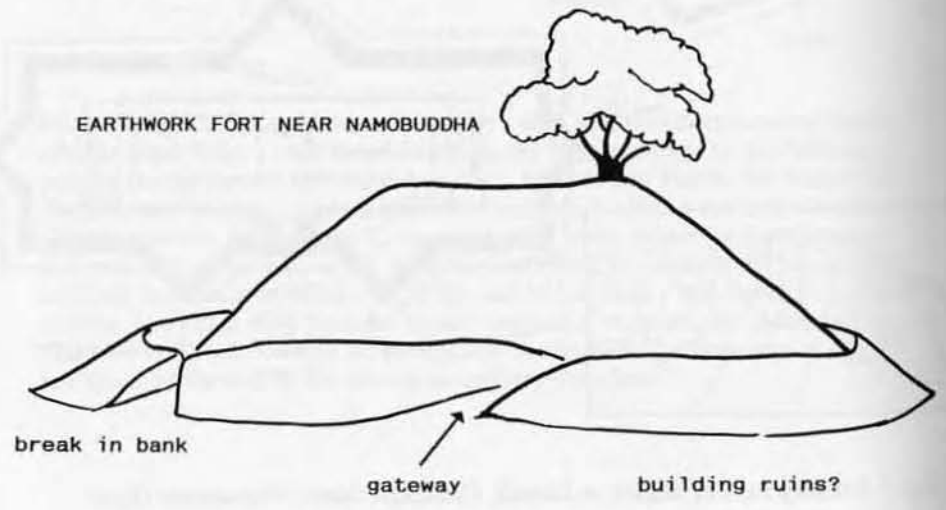

fig. 3 The earthwork fortification near Namobuddha

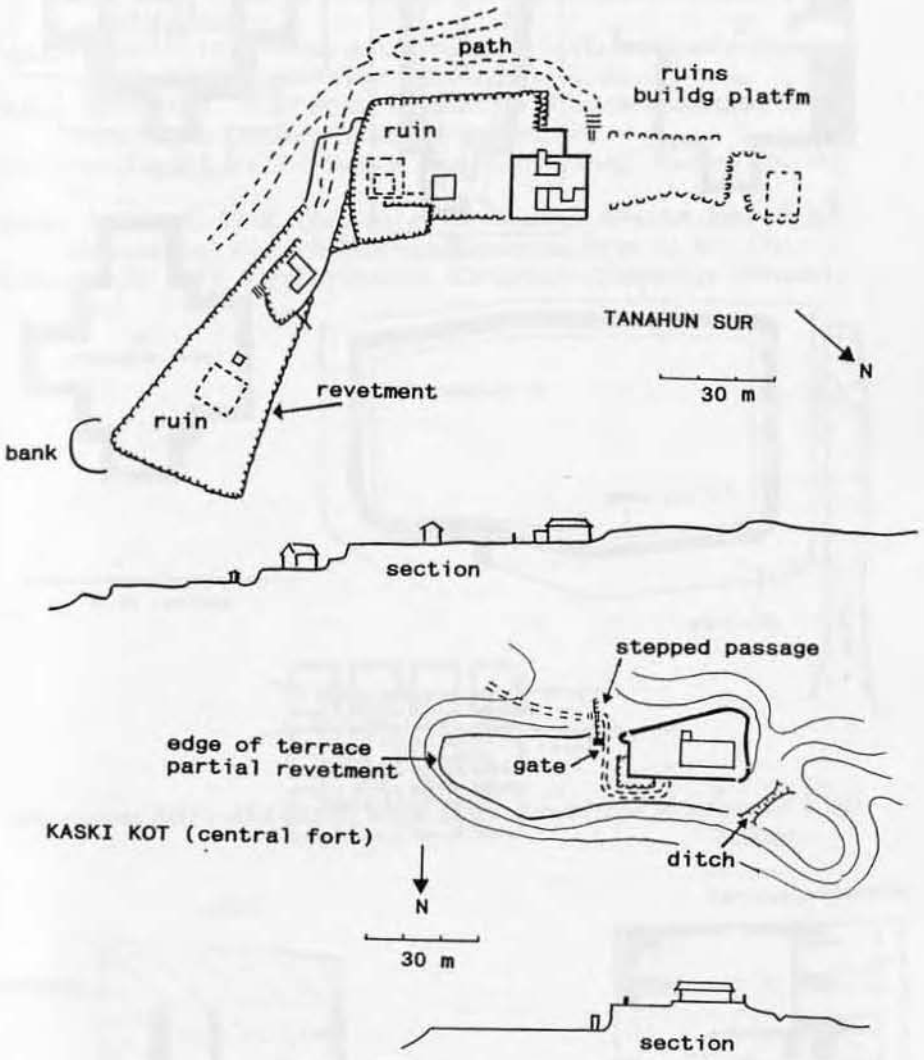

fig. 4 Hill-top terrace forts of Tanahun Sur and Kaski

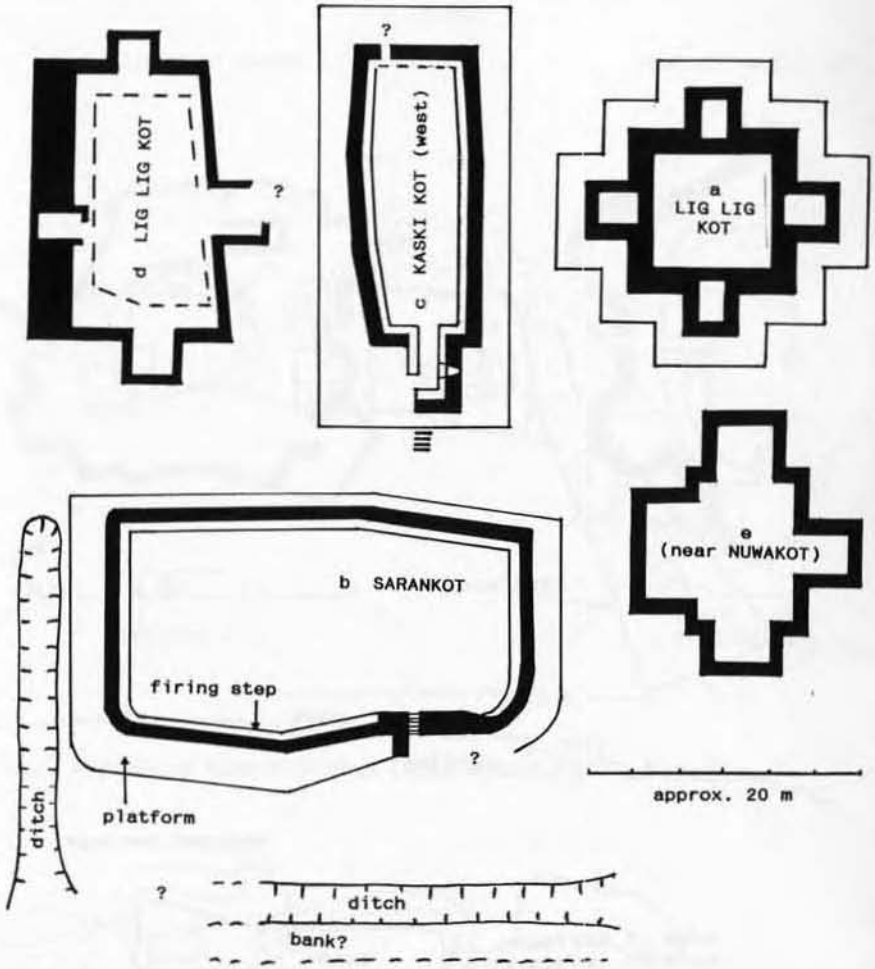

fig. 5 Examples of small fortifications in the central hills - 18th century and earlier?

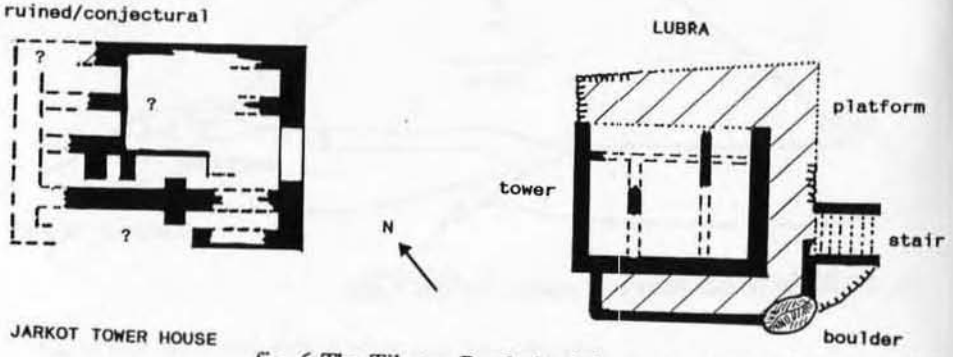

fig. 6 The Tibetan Borderlands' tower houses of Jarkot and Lubra

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