

ART. II – *Excavations at Milefortlet 21*

By PERCIVAL TURNBULL

ALTHOUGH antiquarian reference to parts of the Roman system of defensive installations along the Solway coast may be traced back to the time of Camden (Birley, 1961, 136-31), a detailed description and the beginnings of a proper understanding of this section of the *limes* are developments of the past half-century, and derive to an overwhelming degree from the efforts of Richard Bellhouse. Since 1954 he has worked tirelessly to identify the sites of a growing catalogue of individual milefortlets and towers, initially published year by year in a great number of articles and notes in these *Transactions* and recently epitomised in a research monograph (Bellhouse, 1989). His survey work has been augmented by many excavations, mostly on a small scale and designed to corroborate the positions of individual elements in the system. The framework provided by Bellhouse's work has stimulated and facilitated further important research (e.g. Jones, 1976, 1982 and Potter, 1977, 1979), which has contributed enormously to our understanding of the Roman defences of the Cumberland coast.

The system as defined by Bellhouse, a great advance on earlier states of knowledge (e.g. Collingwood, 1929), is now very familiar, and needs only the briefest of summaries. Southward from Bowness-on-Solway, the Wall series of milecastles and turrets is continued as milefortlets of turf and timber and towers of stone: spacing is, as on the Wall itself, at regular intervals, with two towers between each part of milefortlets (slight variations in spacing have been discussed by Bellhouse). The system is numbered in the same way as the installations on the Wall, counting southwards from Milefortlet 1 at Biglands: the numbering now used incorporates an interruption, south of Milefortlet 5 (Cardurnock), by the sands of Moricambe, the series beginning again with Milefortlet 9 (Skinburness). Work by Jones (1982) has established the existence in one period of a timber curtain or palisade linking the milefortlets and towers to the north of Moricambe: there are indications that this may have extended further south, at least as far as the area of Milefortlet 10 (Silloth). Most milefortlets and towers are now accounted for as far south as Maryport: there has been much debate here concerning the relationship between the major fort and the minor coastal installations, the simplest account probably being that offered by Daniels (1990). The full southward extent of the system remains unestablished, with a strong likelihood that it should be further than the last identified element, the Tower 26b at Risehow.

Despite the attention directed in recent decades at the problems of the Cumberland coastal defences, there has been little exploration of individual sites apart from small trenches (almost entirely dug by Bellhouse): in particular, only two milefortlets have been examined by excavation on a large scale. Much of Milefortlet 5 (Cardurnock) was stripped and excavated in 1943, under difficult war-time conditions (Simpson and Hodgson, 1948). The plan revealed was very similar to that of a Turf-Wall milecastle, most of the space within the thick turf rampart being taken by two long timber buildings and their gravel service roads. The milefortlet

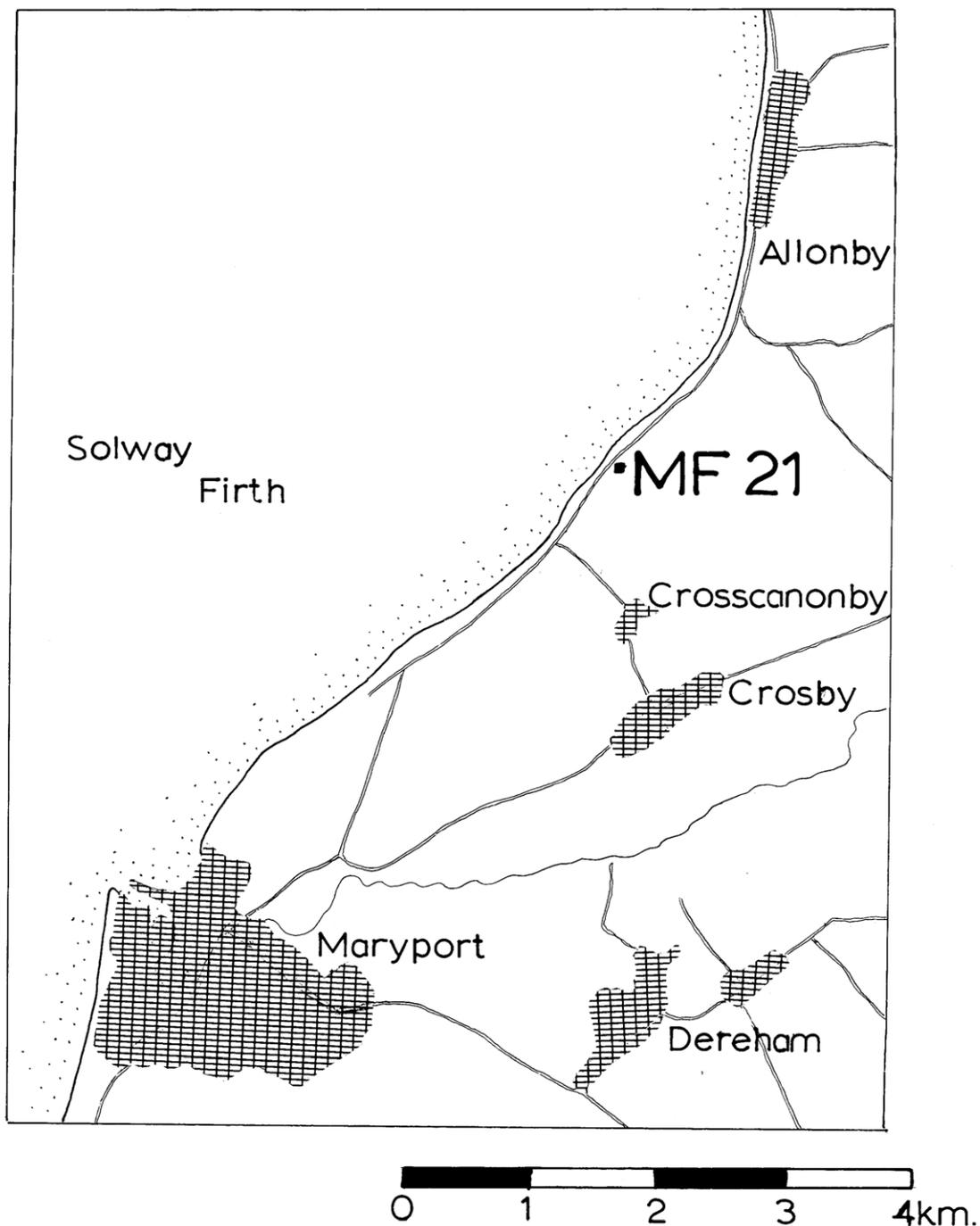


FIG 1. MF21: Site Location.

was later rebuilt, on a rather smaller plan, and the defences refurbished in a third period. A Hadrianic date for the original construction was clear, and the two periods of rebuilding were both also dated within the second century. In 1975, Dr Tim Potter undertook the rescue excavation of Milefortlet 1 (Biglands), the most northerly in the series (Potter, 1977). This skilful and painstaking excavation involved the examination of much (though not all) of the interior of the milefortlet and the detailed investigation of its defences. As at Cardurnock, the interior proved to be largely occupied by two ranges of timber buildings, here separated by a central, axial gravel road or path. Three periods of construction, all contained within the second century, were again identified and were convincingly associated with the known contemporary periods of abandonment and reoccupation of the Tyne-Solway *limes*. The presence of three second-century constructional episodes has also been noted in limited trenching, on several other milefortlet sites, by Bellhouse (1989, but see discussion below). The present writer was asked by Cumbria County Council to undertake the excavation of Milefortlet 21 in summer of 1990.

THE SITE

Milefortlet 21 looks out across Allonby Bay and to the Galloway coast from the steep edge of a low sand hill, at NY 06724003. It is recorded in the Cumbria Sites and Monuments Record under the reference number 837. The site is usually referred to as Swarthy Hill, though a local name, Primrose Hill (or Bank), is also known. The location is an interesting one: the site is virtually on a cliff-top but is overlooked by higher ground to the north. It is therefore unlikely that, even if both sites were restored to their full conjectural height, Milefortlet 21 and Tower 20b, the next element in the system to the north, could have been intervisible. This is an illustration of the point, constantly reiterated by Bellhouse, that the position of individual sites is predominantly the result of measuring at regular predetermined intervals and not of the demands of intervisibility or communication. Part of the higher ground to the north is occupied by the Swarthy Hill late prehistoric site, identified and explored by Bewley (1992). To the east of the Milefortlet the ground slopes gradually down almost to sea-level. This low ground on the landward side of the site was, until recent draining, very marshy and covered with bullrushes: there is a considerable depth of peat, and it appears that the site of Milefortlet 21 once stood on a spit of land between the Solway on the west and the open water of a lagoon or inlet on the east: although this appears to have dried out considerably in early post-glacial times (see the pollen report, *infra*), wet conditions probably persisted in the Roman period.

The location of Milefortlet 21 is not quite where it was expected to be. Bellhouse's fieldwork began with the scaling-off of points at intervals of one-third of a Roman mile, measuring from known to postulated sites, and 'fine-tuning' the measurements as adjustments were suggested by intervals already established. The mean interval in the Allonby Bay sector is of 570 Imperial yards (521 metres). On this basis, Bellhouse initially placed the site of Milefortlet 21 in a position some 70 metres to the south of where it was ultimately to be identified. He went on in 1962 to small-scale test excavation (Bellhouse, 1963) to corroborate the location, and found deposits which he subsequently identified, by analogy with discoveries at Milefortlet

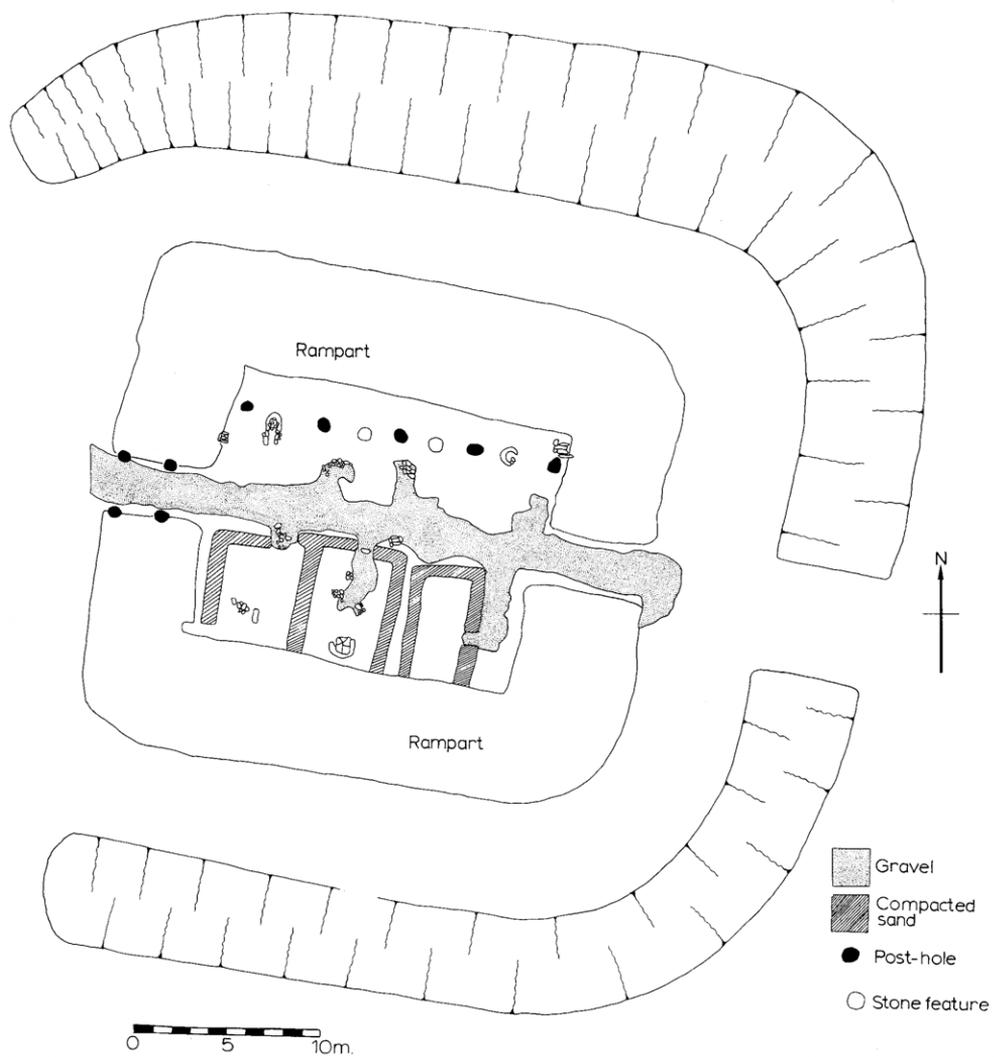


FIG 2. Schematic plan of site.

22, as the ditch-fill, rampart and occupation levels of a milefortlet. On these grounds, the site was initially included in the Schedule of Ancient Monuments. In 1968, however, aerial photography revealed, in the field to the north of the site, the crop-mark of the distinctive horse-shoe ditch of a milefortlet: this was clearly Milefortlet 21, and the Scheduled area was accordingly extended to encompass it. (The photograph is part of the Cumbria Sites and Monuments Record.) This initial difficulty in defining the site was to have implications for the final stages of the later campaign of excavations at Milefortlet 21.

The exact amount of erosion which has occurred on the Solway coast in historic times appears to vary considerably. Bellhouse (1989, 47) has suggested much piecemeal encroachment of the sea between Moricambe and Dubmill Point, resulting in the loss of some milefortlets and towers, but Allonby Bay seems to have been less affected. At Milefortlet 21, the general form of the beach and sand cliff have probably altered little: certainly, the position of the seventeenth-century saltpans on the high-tide mark indicates stability at least in recent centuries.

GEOPHYSICAL SURVEY

The cropmark recorded in 1968 showed the milefortlet ditch, and a feature which appeared to be the axial road (but was probably in fact caused by a modern drain which largely follows the line of the road). What appeared to be a straight length of ditch on the western side proved to be merely the headland of the modern cultivated field. No other feature was visible, and the obliquity of the photograph made the exact location of the site within the field difficult to find. In order, therefore, to supplement the very meagre information about the plan of the milefortlet and associated features which was provided by the aerial photograph, and to permit informed preparation of excavation strategy, a resistivity survey of the site was carried out by staff of the Ancient Monuments Laboratory of the Historic Buildings and Monuments Commission. Because of the geological and pedological conditions results were somewhat disappointing, but it was possible to plot accurately the position of the milefortlet's ditch and of the axial gravel road. Apart from modern drains, no feature external to the ditch was evident. The area of the survey was extended to include the site trenched by Bellhouse, where no feature could be identified.

THE EXCAVATIONS

The excavation of Milefortlet 21 was undertaken in the summers of 1990 and 1991. Work was overseen and recorded by a small, professional archaeological team, most of the digging being carried out by successive groups of volunteers from the Earthwatch organisation, augmented by a number of doughty local helpers. The whole of the interior of the milefortlet was excavated; the rampart exposed, defined and recorded; and the ditch sampled. Additional excavations were carried out to search for features outside the milefortlet's ditch and to examine the area explored by Bellhouse in 1962. The excavation archive has been deposited with the finds in the Senhouse Roman Museum, Maryport.

The geology of the site combined with the exiguous nature of many of the features and structures examined to make Milefortlet 21 a very difficult exercise in excavation, and appropriate techniques had to be developed from the outset of the campaign. Over most of the site the subsoil consisted of a rather loose, orange-yellow sand, with some smaller clay particles within it and with occasional pockets and bands of orange clay. The archaeological deposits were also represented by a series of sands, differentiated only very slightly from the 'natural' subsoil: matters were made worse by many small pockets of redeposited sand soils and by aeolian reworking: the result was a sequence consisting almost entirely of sandy soils, the differences between which were very slight. Excavation had to allow the nicest differentiation between deposits, and could be controlled only by continuous cleaning of all surfaces and by repeated planning and other recording; water (labouriously carried up the sixty-two steps from the car-park) was constantly sprayed on surfaces through most of the prevailing dry weather; the position of every find (a total of about a thousand) was recorded in three dimensions to the accuracy of a centimetre. All of this combined with the extra constraints arising from the use of a largely untrained workforce to make the process of excavation slow and painful: it was felt, however, that the caution which was exercised was amply repaid by the recovery of the plans of very slight and poorly-defined features which might easily have escaped recognition.

After turf and topsoil had been removed by hand from an area of 200 square metres, to establish the depth of overburden disturbed in modern times, an average of 30 centimetres of topsoil was removed by a JCB machine fitted with a four-foot wide ditching bucket. Thereafter, all deposits were excavated by hand, apart from the modern fill in the upper part of the ditch. The material moved by machine consisted of a loose, sandy loam which contained, as well as small quantities of abraded Roman pottery, abundant modern material.

Beneath the ploughsoil, the site proved to be covered by a further thin layer of recent origin: it was a sandy loam containing much pottery, very comminuted, of the later nineteenth and twentieth centuries, and many small scraps of coal and cinder. This seems very similar to a deposit noted on other sites in the vicinity, by Bellhouse, and interpreted by him as a fairly recent attempt to level off the ground, presumably for agricultural purposes. This material, the scourings of recent farm middens, was removed by hand in order to avoid damage to the archaeologically more significant soils underneath.

Immediately below the midden deposit (and in places difficult to distinguish from it), lay a clean deposit of sand which covered most of the site. It was of a pale, orange-brown colour and varied in depth to a maximum of some fifteen centimetres. It contained Roman pottery, some of which was represented by substantial, unabraded sherds: other occasional inclusions were lumps of burnt clay and stones, both cobbles and larger flat slabs. This material appears to represent the redeposition of the sand filling of the rampart, and was apparently laid down shortly after the abandonment of the site. This may be evidence for the deliberate demolition of the milefortlet's defences at the end of the military occupation (although this would be at odds with the evidence for timber structures being left to decay *in situ*).

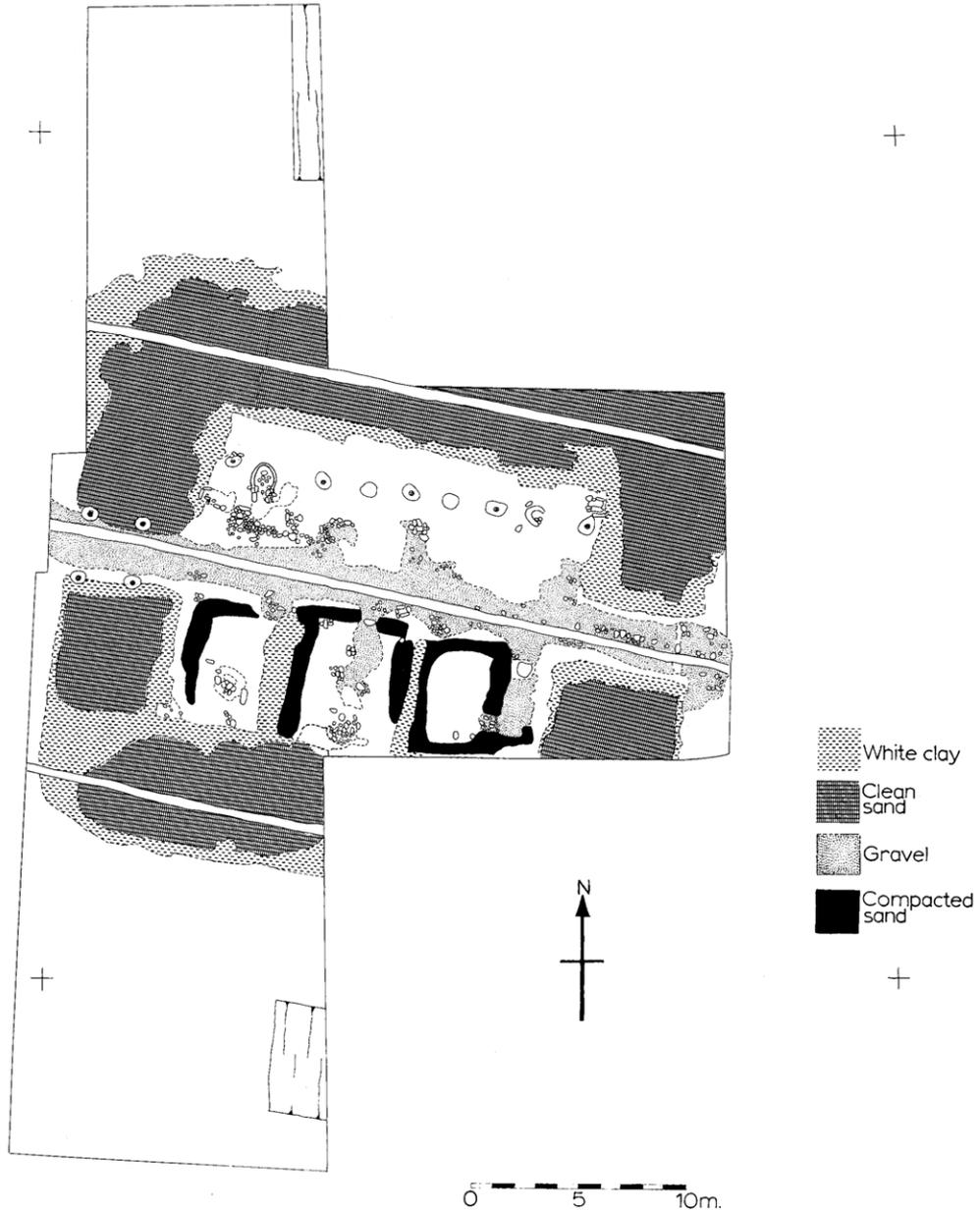


FIG 3. Excavated features.

The Rampart

As the modern midden deposit was removed, the outline of the milefortlet's rampart became visible as two parallel lines of clay material marking the positions of the inner and outer edges of the defensive bank. This caused some initial difficulty, since these edges of the rampart first became visible within the redeposited sand layer. The clay lines were well-defined and almost white in colour: they were, however, very fugitive, disappearing in places when cleaned by trowelling, and becoming almost invisible when the surface dried out. It became clear that these clay lines were derived from the real edges of the rampart, much more substantial, stratified ten or fifteen centimetres below: the very fine, white clay particles seem to have been vertically mobile in wet conditions and to have percolated upwards, through the redeposited sand of the demolished or destroyed rampart, to be deposited on its upper surface. Lateral mobility of the particles was very little: the plan of the redeposited clay corresponded very closely to that of the *in situ* rampart faces as they were eventually defined.

The rampart of Milefortlet 21 proved to be of rather unusual, and somewhat flimsy, construction, and in sharp contrast to the solid turf edifice seen at, for example, Milefortlet 1 (Biglands), the best-documented parallel site, and at all other milefortlets so far examined. It was, when thoroughly cleaned, well-defined and very regular in construction (although only the very lowest part survived). It had an average width of about 6.5 metres, with little variation from one point to another. Internal corners were square, external corners rounded. Definition of the rampart's faces allowed the establishment of the overall dimensions of the milefortlet within its defensive bank: the external measurements were 27 metres north-south and 29.5 metres east-west, and the internal area measured 14.5 metres north-south and 18 metres east-west. The milefortlet has therefore a slightly longer axis between its gates than across its width, but the difference is not great.

The core of the rampart was of clean, orange-yellow sand with no significant inclusions apart from the odd pebble. It was distinguishable only with difficulty from the natural sand subsoil, and also closely resembled the overlying deposit interpreted as spread material from the demolished rampart. It clearly originated as upcast from the ditch and its uncontaminated nature is indicative of the primary nature of the milefortlet's defences, which were erected on a site otherwise empty and unused. The sand was loose and unconsolidated in consistency and prone to rapid removal by even light winds: considering this, particular attention was paid to examination for traces of lacing or strengthening with timber or turf, but no sign was found and it must be concluded that the rampart core consisted merely of a dump of loose sand. The single exception to this was at the south-west corner, where the rampart was built of a material closer in character to the white clay than to the usual soft sand: this rather formless dump did not seem to represent any deliberate structural feature. No clear trace could be found of a buried soil or old ground surface underneath the rampart, but in a view of the loose nature of the soils, and the uninhibited percolation of water, this was scarcely a matter for surprise.

Both inner and outer faces of the rampart were defined by lines of fine, white clay, the origin of the clay particles noted at a higher level. This material clearly represented the extremely ill-preserved remains of turf facings to the rampart: in rare

places where survival was slightly better it was possible to discern individual small 'bricks' of turf, about twelve centimetres wide by twenty long. Only the lowest two or three centimetres of the turf facing survived at all, but it could be traced virtually continuously around the inner and outer faces of the rampart. It represented, however, a dressing of no more than a single turf's width on each face of the broad, sand rampart.

There was no doubt at all that the rampart was of a single period of construction, without evidence even for small-scale repair. Plainly, the thin turf facing of a rampart otherwise constructed of loose sand can have added little structural strength. In the absence of timber lacing or of any internal turf structure to contain and stabilise the sand, it is difficult to see the rampart as other than weak and unsafe. Certainly, it must have been built with a considerable batter from the vertical, close to the sand's natural angle of rest. The turf dressing can have served little function other than to prevent wind erosion of the sand bank and to keep the rampart faces reasonably straight.

Outside the rampart lay a clear berm of an average five metres in width. Apart from a few plough-furrows of recent origin, no feature was recovered anywhere within the berm.

The Ditch

The outer defence of the milefortlet was a broad ditch cut to a considerable depth into the natural sand. Even before excavation, it was clear from the cropmark produced by the ditch that it did not involve a complete circuit of the site but extended only along three sides, leaving the seaward western side open: the effect, confirmed by the geophysical survey, was of a slightly squared horseshoe. The terminals end within about five metres of the present edge of the sand cliff. Before excavation, no trace of the ditch could be detected at all, either as relief or as vegetational change, the field having been ploughed quite flat.

Because of the ditch's scale, and because of the unstable nature of both the sand subsoil and the sand ditch-fill, excavation of the feature proved a major drain on resources. In view of the rather unforthcoming nature of the ditch and its contents, therefore, excavation was confined to a single full section on the north side and a partial section on the south side (which was eventually abandoned because of its collapse). The northern section revealed a ditch both wide and deep: the width varies from about 6 metres to 7.5 metres in the excavated section, where the ditch bottom lay two metres below the present surface of the natural sand (unprotected at this point by any overlying layer of redeposited rampart material, and probably somewhat truncated by the plough). The sides sloped to a shallow V-profile, and there was no trace of a slot in the bottom: the shallow profile (and therefore probably the width of the ditch) was necessitated by the unstable nature of the sand.

The upper 1.5 metres of the ditch was filled with a sandy loam containing modern pottery, coal and other rubbish, extending in date into the early part of the present century and indicating that in comparatively recent times the milefortlet was visible as a substantial earthwork, subsequently filled by soil dragged by the plough

from the higher slope of Swarthy Hill to the north. This modern accumulation overlay a thin band of darker grey sandy loam, apparently a turf-line and representing a 'standstill' phase of stability on top of the consolidated earlier ditch silts. Below this level the fills, of fine, yellow-brown sand, were absolutely clean, without even a fleck of charcoal: there was no evidence at all of any recutting, nor any differentiation of fill apart from the occasional pebble. This made recognition of the edges of the ditch very difficult: almost identical in character to the natural sand, the ditchfill proved on careful excavation to be separated from the natural by a very thin layer of very fine silt. Demolition of the rampart and the casting of its sand core into the ditch would account for the nature of the ditch-fill: it is difficult to see how natural silting, even accelerated by the constant action of the local winds, could have produced a filling so consistently destitute of contamination. A narrow causeway was located in the middle of the eastern side, opposite the landward entrance through the rampart: this had been visible on the aerial photograph of 1968 (where it appears rather wider than it proved to be).

The Interior

The whole of the interior of the milefortlet was cleared and excavated over the project's two summer seasons. Sealed and to some extent protected by the redeposited rampart material already discussed, the original surfaces were not to any great extent plough-damaged and were relatively well-preserved. The main disturbance was caused by a set of four parallel land-drains aligned approximately east-west across the site: cut right through the archaeological deposits, they contained clay pipes under a capping of stiff clay, and when excavated provided useful free sections through the stratigraphy. One drain ran right along the length of the gravel axial road which traversed the site, much of which it therefore destroyed. This drain followed the line of the road so accurately that it may well have been laid out originally to align with entrances still visible as earthworks in the nineteenth century.

The Axial Road

The entire length of the milefortlet was bisected from east to west by a gravel road or path. The edges were irregular, and the width varied between 1.5 and 2 metres. The material of which it was made was a gravel or shingle indistinguishable from that which is still readily available on the beach immediately below the site. In a few places, long boulders had been arranged at a right angle to the general axis of the road, as if to retain the gravel against the slight natural downward slope to the east. The road metal had been laid into a shallow cut or scoop, irregular in plan and between 10 and 15 centimetres in depth near the edges and up to 25 centimetres deep near the middle of the road.

At the western end of the site, the original surface of the road was overlaid by a layer of about 15 centimetres of fine, clean sand, which must certainly be of aeolian origin and which could also be detected over other features in the immediate vicinity. Above this had been laid a further thin surface (no more than five

centimetres thick) of gravel road metal. This sequence is one of only a couple of incidences on the site of more than a single period of construction or use: the aeolian sand clearly represents a short spell of stormy weather, but experience of local conditions suggests that the period need have been no more than a single night: repair was certainly on a very minor scale.

At intervals on both sides of the road, and perpendicular to it, were short spurs of road material, effectively continuous with the gravel of the road itself. These spurs, narrower than the road, were interpreted upon discovery as being access to a series of buildings between road and rampart on each side. Three were identified to the south of the road, and another three to the north. The interpretation was corroborated by the identification of the postulated buildings at a later stage in the excavation.

On the southern edge of the road, at its approximate mid-point, was a small stone trough or cist: constructed of naturally flat slabs of stone set on edge, and with a floor of similar slabs, it bore clear signs of having been lined or caulked with clay, presumably to allow it to hold water. It measured 40 centimetres along its greater axis, and was sunk into the ground to a depth of about 30 centimetres. No function for this feature could be determined: similar troughs within the fort at Birdoswald were associated with the working of iron, perhaps for quenching the hot metal, but the trough at Milefortlet 21 contained none of the iron scale abundantly associated with the Birdoswald examples (Tony Willmott, pers. comm.).

The gravel road extended to east and west as far as the outer face of the rampart, but no further. Exploration was made to try to locate traces of the rather elusive track or road which is generally supposed to have linked the components of the coastal defensive system, but none was found: there was no trace of (and scarcely room for) a north-south track along the crest of the cliff outside the western entrance, and trenching quickly revealed a linear mark, visible on the aerial photograph and well to the east of the milefortlet itself, as the cut of a field-drain.

The Eastern Entrance

On the eastern side of the milefortlet was a simple, narrow entrance about 3 metres wide. There were no post-holes which might have been expected to indicate the gateway arrangements seen on some other milefortlets. There was, however, a distinct space between the gravel metalling of the road and the lines of white clay which delineated the faces of the rampart terminals on either side of the entrance: these gaps on either side were well-defined and clean-edged, and were understood to be the vestiges of sleeper beams of timber, entirely vanished in substance, which had supported vertical timber faces at the rampart's two ends. Such provision, or something similar, would have been necessary to provide vertical revetments for the sand rampart (otherwise battered) in order to allow for hanging a gate. The material used for the surface of the road was at this point somewhat different from that used elsewhere, including slabs of stone, larger than the beach shingle and mostly in the form of flat natural flags. These had been laid down as rough paving in the entrance area where erosion of the loose gravel road was likely to be greatest. The existence of a timber gate at this eastern entrance seems clear: as well as the evidence for

revetments along the ends of the rampart, there is also a break in the gravel road surface which strongly suggests the timber threshold of a gate close to the line of the outer face of the rampart.

The Western Entrance

The seaward, western, entrance of the milefortlet was excavated in the second season and proved to differ substantially from its landward counterpart. The gap between the lines of white material representing the turf facings of the rampart terminals was again narrow, averaging three metres in width (the fossil turf was unusually well preserved at this point and was in places visible as distinct blocks of spongy, white clay). The causeway area was filled almost entirely by the gravel metal of the road (at this point topped by the resurfacing, after an episode of sandblow, which has already been noted). Dominating the entrance were four large post-pits. These were packed with cobbles and boulders, but preserved voids, filled with the sands ubiquitous on the site, representing the positions of original posts at least some 30 centimetres across. The four posts formed a square of sides three metres long. There was no sign of substantial disturbance of the packing stones, other than the degree of settling which must be expected, and considering the clear preservation of the post-pipes it should be concluded that the posts had not been deliberately withdrawn but had been left to decay *in situ*. The posts represent the footings of a timber tower, similar to those recorded on other milefortlet sites (where, however, a base of six, rather than four, posts seems to be usual) and analogous to those seen on Wall milecastles. It must have included a gate and the superstructure of the tower would seem to have been carried for at least one storey above the level of the rampart walk. The purpose of this structure is by no means obvious, particularly when one considers it beside the comparatively light defences afforded to the eastern gateway. It has already been seen (and it is a point constantly iterated by Bellhouse) that the milefortlets and towers were not *prima facie* intended for signalling along the length of the system: nor do their locations necessarily lend themselves to such a purpose (although a recent study (Woolliscroft, 1994) has shown how they *could* have been used for signalling purposes). The tower might however have allowed for an unfettered view to the west, over the cliff edge and across the Solway.

It is not clear how usual is this twin-entrance milefortlet plan: the fact that it has only otherwise been recorded at Milefortlet 20 (Low Mire) (Bellhouse, 1981) is, as much as anything, a reflection of the limited nature of exploratory trenching on most sites. It is, however, worth repeating that the presence of front and back gates need not imply the existence of a continuous barrier between sites (a point underlined by Daniels, 1990).

Buildings to the South of the Road

It had become obvious during the early stages of excavation, involving the definition of the axial road, that the short perpendicular 'spurs' of road metal were likely to be associated with buildings fronting the road. The second part of the 1990 season of

excavation was devoted to the identification of these buildings on the southern side of the road.

They proved to be very elusive. An early clue to the ground-plan of this part of the site was recognition of the fact that the distributions of finds of pottery and small pieces of iron in the area were broadly confined within three blocks, demarcated by areas relatively destitute of finds. Removal of the lowest levels of the redeposited rampart material revealed patches of soil which were interpreted as occupation deposits, the locations of which were in agreement with the general pattern of finds distribution. These occupation deposits were very thin, and consisted of interleaved wafers of more-or-less clean sand alternating with darker, grey soils with flecks of badly-preserved charcoal, the whole containing sherds of pottery, small fragments of iron and occasional burnt stones. The impression given was of trampled surfaces deriving from a period of occupation. They fell within three blocks, small but distinct. The thinness of the deposits, in places only a couple of centimetres thick, suggested a fairly brief period of occupation, the main effect of which is better seen as the scuffing and mixing of the natural sand rather than as a substantial accumulation of material.

Eventually, by dint of meticulous cleaning, it was possible to coax from the soil the outlines of the structures which had contained and defined the occupation soils. The evidence was both exiguous and evanescent: virtually the whole of the area within the ramparts and south of the road proved to be divided into three rooms or cells by low benches of sand, distinguished from both the overlying redeposited rampart and from the underlying natural sand by being slightly more orange in colour and perceptibly harder or more compact in texture. In places the compacted sand was only a very thin layer, with the softer, yellower natural sand directly beneath it. The benches were narrow – deviating little from an average width of some 90 centimetres – and low, with a maximum height of around 10 centimetres. Once this material had been recognised it was possible to define the benches continuously around each of the three cells and to recover the plans of the buildings with considerable confidence.

The south-western building sat neatly inside the square internal corner made by the rampart. Internally, it measured 4 metres wide (along the road frontage) by 5.3 metres long. There was no south wall, and it must be assumed that the building backed directly onto the rampart: the west wall, however, was a bench of compacted sand parallel to the rampart face and some 50 centimetres inside it (the southern end of this wall was not located, and seems to have been removed by an animal's burrow). The entrance was a simple gap in the sand bench, 1.5 metres wide, set at the eastern end of the north wall: it was served by one of the projecting spurs of road metal, and the actual threshold was roughly paved with a few larger boulders. Within, and contained by the interleaved occupation deposit, were several burnt, flat stones and a more coherent group, roughly circular, from which they had presumably been disturbed, which represented a damaged hearth.

The south-central building abutted directly the south-western, with which it shared a wall in common. Because of the slight natural slope downward to the east, the building had been slightly terraced by the scooping out of a depth of some 10 centimetres of natural sand subsoil at the western end of the building. Because of subsequent erosion of the exposed edge, the evidence for this terracing was very

slight and ill-preserved, but it appeared to have been consolidated with a white clay material like that which forms the fossil turf of the rampart facings, and which must here indicate the stacking of a low turf wall torevet the edge of the terrace cut. Again, the building had no 'back' wall at the southern end, this side being defined by the white clay of the inner face of the rampart, onto which the building clearly backed directly. The building measured 4 metres wide by 6 metres long. The entrance, only 1 metre wide and in the centre of the front wall, was again served by a spur of road metal, which in this instance continued for almost 4 metres to the centre of the building. A single, larger boulder formed the threshold.

In the southern half of this building was a substantial oven or furnace. The base was circular, with an average diameter of 1.1 metres, paved with irregular flat slabs of micaceous sandstone. Around the edges were low walls of red-coloured, burnt clay in which were embedded a few stone slabs set vertically on edge: these walls formed a horseshoe shape open to the north, from which the oven must have been stoked. The whole feature was covered by lumps of burnt clay, the remains of the collapsed superstructure. On the northern side lay a burnt stone disk, 40 centimetres across, roughly chipped from a flat sandstone slab and with a small hole pierced through the centre. This was plainly part of the oven: it may have been a door with the small hole providing for the insertion of a stick or wooden handle to allow its removal when hot. There was no evidence for an industrial use, and cooking seems most likely to have been its function.

The south-eastern building did not directly abut its neighbour, but was separated from it by a gap of rather less than half a metre. There was again slight evidence for terracing by the reduction of the slightly higher natural surface at the west end of the structure. This building was slightly smaller than the others, measuring 5.6 metres long by 2.5 metres wide. The plan also differed significantly, for the entrance, a gap of 70 centimetres, did not front onto the axial road but was in the eastern side, opening onto a narrow space of some 2 metres width between the building and the inner face of the east rampart. There was no trace of a gap in the end of the building facing the road. This side-entrance was served by the usual spur of road gravel, in this case running for a full 5 metres down the side of the east wall before turning sharply into the entrance. The threshold area was again reinforced with a grouping of bigger stones, and the road spur contained one much larger boulder, close to its junction with the main axial road, for which no purpose was apparent. The south-eastern building contained no obvious hearth, although decayed charcoal was plentiful in the occupation deposit and several burnt stones might represent the remains of a hearth otherwise destroyed.

Quite what structural arrangements are represented by such scanty traces as the benches of compacted sand is by no means clear. An early suggestion, that the buildings might have been built of sods, must be discounted: not only does the hard red sand have nothing about it to suggest that it might be the remains of decayed turf, but it also differs markedly from the material remains of what is known to be turfwork, the rampart facings. It seems excessively perverse to suggest that two entirely different sources of turf might have been used for the two purposes. Similarly, the idea must be abandoned of low sleeper walls of deliberately rammed earth, supporting superstructures of timber or wattle: in places the compacted sand formed no more than a thin crust over softer sand, with no real substance to it. The

most probable explanation is that the compacted sand was formed by compression under the wooden sleeper beams of timber buildings of which no other vestige survived. The weight of the structure above would have created the harder sand surface and would at the same time have protected the ground directly beneath the horizontal timbers from the erosion by wind and by human activity which would have affected the adjacent areas: the level of these would have been lowered slightly, creating the low benches which were recovered during excavation. The use in this way of timber sleepers would also account for the slight terracing of the buildings: a structure built in this way would require a fairly horizontal surface. A prefabricated form of construction seems likely. No fragment of Roman brick, tile or slate was recovered from the site, and roofs of an organic material (perhaps boards, if the buildings were indeed prefabricated) are indicated. There were no floors other than the bare ground.

Buildings to the North of the Road

Three spurs of road metal had been identified on the northern margin of the axial road and were presumed to indicate the presence of a range of buildings, but the absence of the benches of compacted sand, which defined the southern building range, suggested another method of construction. Careful removal of the lowest levels of the redeposited sand interpreted as the spread remains of the rampart revealed the same thin, interleaved occupation soils, over virtually the whole of the northern half of the site, as had been recorded to the south of the road. These deposits did not divide into the sort of discrete blocks which had filled the interiors of the southern building range, but formed a single complex of thin wafers of sand and of charcoal-rich soils spread unevenly over the northern part of the site. Further cleaning of the top of the occupation soils discovered the structural elements of the building plan of the northern range.

The northern buildings were recognised by a line of post-holes some 2.5 metres south of, and parallel to, the inner face of the northern rampart: that is to say, at the approximate mid-line between the rampart and the edge of the axial road. There were five post-holes, more or less evenly spaced and those at the end of the line lay very close to, within 50 centimetres of, the inner faces of the eastern and western ramparts: the building range therefore occupied virtually the whole of the space available within the ramparts to the north of the road. Each post-hole was packed with cobble-sized stones: there was little or no sign of deliberate disturbance and rather vague, stone-free areas of sandy fill in the centre of each may be taken as representing the cast of the post, which must therefore be understood to have been allowed to decay *in situ*. The timbers represented by these post-casts were around 10 centimetres across. The depth of the post-holes varied little from a mean of about 50 centimetres, and their alignment was quite accurate and straight.

The post-holes represent the mid-line of a range of buildings filling the northern half of the site. The position of the frontage is indicated, by analogy to the wooden cabins on the south side, by the spurs of road metal which indicated the doorways, and must have been very close to the margin of the axial road. This suggests a range 18 metres long from east to west, and probably about five metres deep. No trace was

recovered of remains of the frontage: it must be assumed that this rested upon stylobates or post-pads which have since been disturbed, or possibly upon a timber sleeper (although it has left no trace in the form of the compacted sand seen elsewhere).

The structural evidence for the northern range is very slight. It is probably best understood as a single long shed, divided into four cubicles by timber screens secured by the structural posts: the entrances of three of the suggested cubicles were marked by spurs of road gravel although the fourth, the westernmost, did not at first seem to be provided with this sort of threshold. This point is, however, coincident with the stretch of road which was resurfaced after an episode of blown sand: sealed by the aeolian material immediately north of the road was an irregular area of gravel surfacing which probably represents the disturbed remains of the missing doorway paving. Again, in each bay larger stones had been added to the gravel surfacing at what must have been the area of greatest wear, immediately by or within the entrance. The back of the building was the inner face of the northern rampart, and it must be assumed from the close proximity of the end posts to the ramparts that the eastern and western gables were also integral with the rampart. The frontage is lost, but the shed may well have been fairly open, the roof supported only by a few light posts the bases of which have not survived. As with the southern buildings, there was no form of artificial floor, and roofing material was organic and has left no vestige.

Each of the four bays or cubicles was provided with either a hearth or an oven (a fact which seems to support the idea of the bays having been four discrete cells physically separated by screens of some kind). The two central bays each contained a simple hearth, set centrally between the pair of post-holes defining the bay, and each consisting of a roughly circular area paved with irregular, naturally flat slabs of stone, some 70 centimetres in diameter. Much highly-decayed charcoal was present in the occupation soils associated with them. The eastern and western bays contained more substantial structures which must be seen as ovens. Each of these bays included one oven situated between the two structural posts. They took the same general form as the horseshoe-shaped oven in the south-central building, though smaller in size. That in the western bay had been stoked from the south (that is, from the open side of the building) but that in the eastern cubicle opened to the east. Like the other ovens on the site, these were unassociated with any industrial detritus or other evidence to suggest that they might be forges or furnaces, and they must be assumed to have been meant for cooking (and perhaps heating). The damaged remains of a second oven was found in each of the end bays. They were recessed into the inner face of the rampart, which had been slightly cut away, respectively at the eastern and western ends of the building range. That on the east survived only as a setting of dislodged burnt stones and black soil, to the north of the central axis indicated by the line of post-holes: it appeared, however, to have taken the same form as that at the western end. This was better-preserved, square in shape, and lay just inside the milefortlet's west gate.

The differences in plan and construction which distinguish the northern and southern building ranges strongly imply a functional difference. It is, however, difficult to allocate specific uses: the presence on both sides of the road of hearths and ovens makes it unlikely that either range was used primarily for either storage or stabling. It seems in principle likely that one range was intended for

accommodation, and the wooden huts or cabins of the southern range seem a stronger candidate for this than does the apparently flimsier, and probably open-fronted, shed on the north. The plan of the south-central building might support the idea: the spaces between the walls and the spur of gravel might suggest the location of benches or cots. Equally, however, the bays of the northern range might provide sleeping accommodation between the central posts and the rampart at the back. On balance, it seems most likely that accommodation for the garrison was provided in the huts on the south of the road, and that the space to the north was filled by a shed to give shelter to a range of activities including cooking, perhaps the maintenance of equipment, and any fatigues which might have been allocated to the garrison to keep them occupied. The number of troops stationed here cannot have been great: the huts of the southern range can scarcely have accommodated more than two men in each, which suggests an establishment of half a dozen.

Test Pits South of the Site

The excavation of Milefortlet 21 necessitated a reconsideration of the site apparently found 70 metres to the south by Bellhouse in 1962 (Bellhouse, 1963). In particular, the discovery of only a single, Hadrianic, period of construction and occupation raised the possibility that the milefortlet had been rebuilt in the Antonine period on a slightly different site, so that the missing later phases would be accounted for by Bellhouse's original observations. The magnetometer survey carried out in 1990 had disclosed no features in the area trenched in 1962, and so to resolve the problem it was decided to reinvestigate the original site. This was done by means of a line of seven test-pits, each 2 metres square and separated by 2 metres, dug by hand across the area trenched by Bellhouse. The ground was considerably disturbed and eroded into ruts by the passage of farm traffic, but in each pit the natural sands and clays of Swarthy Hill were located immediately below the churned-up topsoil. There was no trace of any archaeological feature, nor was any sherd of pottery or other Roman artefact recovered.

ARCHAEOENVIRONMENTAL EVIDENCE

It became evident early in the excavation campaign that the capacity of the site of Milefortlet 21 to yield significant information about the early environment and economy was very limited. The significant factor was the virulent acidity of the local natural sands, which not only affected adversely the survival of organic materials, but also left its mark on artefacts of pottery and metal. From the whole of the site not a single animal bone was recovered: the best that the site could produce in the way of faunal evidence was a few crumbs of what looked like carbonised bone mixed within the occupation deposits in the buildings on either side of the road.

During the first season of excavations (when a full-time environmental specialist was employed), soil samples of approximately 5 litres were taken from 15% of all recorded archaeological contexts, determined by a system of random numbers. These were augmented by 'judgement' samples taken from any deposit which looked as if it might have a high potential for preservation. Flotation of the samples

from the first season failed to reveal any identifiable organic residue apart from tiny flecks of charcoal which were so decayed that no trace of their structure survived. Accordingly, the sampling strategy (which was very expensive of time) was abandoned in the second season. A slightly higher potential existed for the preservation of pollen grains within the acid sands and within the peats of the boggy ground to the east of the milefortlet: these constitute the only environmental evidence from the site and may be understood to provide information about the immediate and the more general environment respectively.

Pollen Report by *Samantha Chinn and Jim Innes*

Pollen analysis has been undertaken on samples of sediment from two areas associated with Milefortlet 21 (Fig. 4). The first set of samples comprises peats and organic silts and clays recovered from beneath inorganic hillwash clays and sands at the base of the landward slope of the drumlin upon which Milefortlet 21 is situated (Swarthy Hill). The second group of samples was recovered from archaeological features and contexts associated with the milefortlet itself, and comprises less organic soil deposits, mainly sandy silts and clays. Samples were prepared for pollen analysis using the standard laboratory techniques outlined by Moore and Webb (1978): many of the samples, having a high inorganic fraction, also required the use of hot hydrofluoric acid to remove silicates. Preservation of pollen was generally adequate to allow successful identification, although a degree of corrosion was present in almost all samples. Corrosion of pollen was particularly heavy in samples from the milefortlet itself, and in exceptional cases was too bad to allow counting to proceed. Where possible, counting of pollen and spores continued until at least three hundred land pollen grains were identified from each sample.

Peat Samples

These samples came from several pits dug through the hillwash and pre-hillwash succession at the base of the drumlin's landward slope. Pre-hillwash sediments comprised highly organic clay gyttjas and amorphous woody peats up to half a metre in depth, which appear to represent the westerly attenuation, lapping up against the drumlin's slope, of the deep succession of Flandrian lagoonal peats and marine clays which occupies an elongated depression on the landward side of the drumlin, parallel to the coast (Huddart *et al.*, 1977). The pre-hillwash deposits are sealed by about a metre of colluvial sandy silts and clays which contain varying degrees of stratification, including some layers which are rather more organic than the majority of the hillwash sediments. Bulk samples for analysis were taken from near the upper and lower boundaries of the pre-hillwash peats in order to establish their age, environment of deposition and relationship with the overlying colluvium. Layers were chosen which had a low inorganic fraction to maximise the chances of good pollen preservation. Samples from several of the pits were analysed to test whether the dates of peat inception and of sealing by hillwash were comparable in all cases. Sixteen samples in all were analysed: pollen assemblages from analogous layers in all of the sampling pits were very similar, suggesting that there was no significant spatial

MARYPORT

Milefortlet 21
%total land pollen

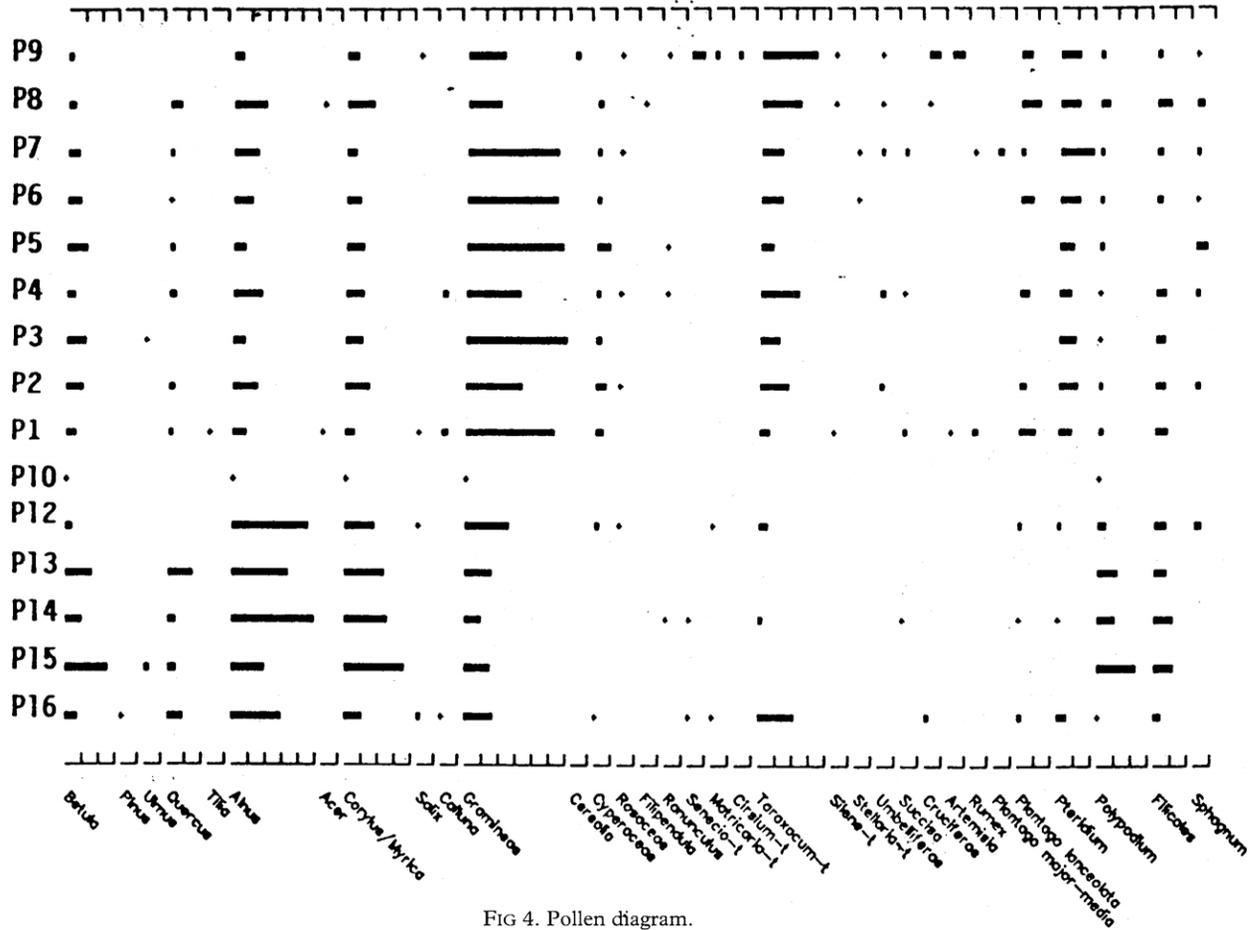


FIG 4. Pollen diagram.

variation in the ages of peat inception and of profile burial by hillwash along the base of the drumlin slope.

Pollen assemblages from near the base of the buried peats may be characterised as dominated by *Betula* (birch) and *Salix* (willow), with low frequencies of *Corylus/Myrica* and the presence of *Juniperus*. A few weed taxa occur, and *Gramineae* (grass) and *Cyperaceae* (sedge) frequencies are substantial. Aquatic herbs are common, as is *Filipendula* (meadowsweet). By analogy with other pollen diagrams from north-west England which have been radio-carbon dated (Hibbert *et al.*, 1971), this pollen assemblage can be attributed to Flandrian Ia (Pollen Zone IV) and thus to between *circa* 9,900 and 9,200 B.P.

The pollen record from the upper part of the buried peats is characterised by *Betula*, *pinus* (pine), and *Corylus/myrica*, with low frequencies of *Quercus* (oak) and *Ulmus* (elm). *Gramineae* and *Cyperaceae* are still the only significant herb pollen types, although a few weed taxa occur. This pollen assemblage can be attributed to Flandrian Ic (pollen Zone VIa), and thus to between *circa* 8,800 and 8,200 B.P.

The buried peats at the foot of the drumlin slope beneath the hillwash layer are all Flandrian in date and correspond to the Early Mesolithic and the beginning of the Late Mesolithic cultural periods. While there are some weeds in the pollen assemblage which indicate disturbed or unstable ground, there are no indications that human activity was responsible, and naturally bare or unstable soils associated with the drumlin slopes would be an adequate explanation. The peats are clearly far too old to be associated with the Milefortlet, or with the prehistoric site also known on Swarthy Hill. Full pollen and stratigraphic data from these mesolithic sediments have not been presented here because of the minimal variation which occurs between samples.

Archaeological Samples

Sixteen samples for pollen analysis were also taken from a range of archaeological features and deposits discovered during the excavation of Milefortlet 21. Of these, samples P1 to P9 were taken at vertical intervals of 10 centimetres from the fill of the Milefortlet ditch (measuring downwards from the 'standstill' horizon, P9). These are the most organic of the samples from the milefortlet itself, and have the best-preserved pollen. The other samples are from individual contexts within the buildings and occupation soils: they are much more mineral in nature and have poorly-preserved pollen grains – so much so that P10 contained only a few grains which were recognisable, and none at all could be found in P11. The results of the analyses of the fifteen pollen-bearing samples are shown in Fig. 4. Pollen and spore frequencies are calculated as percentages of the total land pollen sum, from which spores are excluded.

Samples P12 to P15 form a distinct group within which the pollen assemblage shows little variety and is dominated by tree and shrub pollen, principally *Alnus* (alder) and *Corylus/Myrica* with lesser amounts of *Quercus* and *Betula*. Herbs are few and are represented mainly by grasses. A shady, closed scrub environment is indicated, supported by high frequencies of *Polypodium* ferns. P16 is rather different (though not significantly distinguished stratigraphically): it has less shrub pollen,

particularly hazel, and high values of *Taraxacum* (dandelion)-type and more *Pteridium* and *Plantago lanceolata*, although grass frequencies remain low. A more open landscape is suggested here, although the abundance of *Taraxacum* types may well be due partly to the high resistance to corrosion of its pollen.

The stratigraphic sequence of samples represented by P1 to P9 also form a distinct grouping which is characterised by low values for trees and shrubs and the dominance of open-ground weeds and grassland herbs. *Gramineae*, *Taraxacum*-type, *Plantago lanceolata* and *Pteridium* are most abundant, and several other herb taxa also occur. A cleared landscape is recorded in these samples. The uppermost levels, P8 and more particularly P9, show transition to a more cultivated agricultural landscape than the merely open conditions of the lower levels in this ditch sequence. Grasses fall in importance, to be replaced by *Taraxacum*-type. Cereal-type pollen is, however, recorded, together with taxa which may be weeds of cultivation or of broken ground, such as *Artemisia* (mugwort), *Cruciferae*, *Matacaria* (mayweed) and *Senecio* (groundsel)-type.

All of the above samples are consistent with the dating of the archaeological evidence. Samples P10 to P16 are stratigraphically associated with the occupation of the site, while P1 to P9 come from ditch silts which seem to have continued to be laid down long after the site's abandonment.

THE FINDS

A total of almost one thousand artefacts (many of them highly corroded and unrecognisable scraps of iron) was recovered from the site of Milefortlet 21: each was allocated a unique number (referred to in the finds reports as a Small Find or SF number); the location of the find was recorded three-dimensionally with an accuracy of one centimetre, and by reference to the stratigraphic unit within which it was found (the Context number).

Finds came primarily from two groups of contexts. One group was of dubious stratigraphic integrity, deriving from plough-damaged and otherwise disturbed layers which covered the site and which were largely associated with the spread of rampart material. The second group of contexts was more assuredly associated directly with the structures and deposits in the interior of the milefortlet, particularly with soils deriving from the occupation of the buildings. Because of the single-period nature of the site, and to simplify reporting, Context numbers have been included in the finds reports only where this might be of particular relevance.

The Roman Coins by David Shotter

Three *aes* coins were found: all were suffering from advanced corrosion and were very fragmentary.

SF 235 AE <i>as</i>	Probably Trajan	103-117 VW
SF 266 AE <i>as</i>	Galba	68-69 MW
SF 549 AE <i>sestertius</i>	Trajan	103-111 MW

(Note: VW – very worn; MW – moderately worn)

Nos. 235 and 266 came from a layer of redeposited rampart material disturbed in modern times: no. 549 is from the surface of the axial road.

The condition of this small group of coins is consistent with their loss at any time in the second century A.D., from the Hadrianic period onwards.

Although a number of coins of all periods have been found at locations on the coast of Cumberland, only a few have come from known sites other than forts (Shotter, 1990, 101f; 1995, f/c).

Milefortlets

MF1 (Biglands): Four coins were recovered from excavations in 1974-75, of which one was an illegible *aes*-issue; the others were a legionary *denarius* of Marcus Antonius (Crawford 544); an *as* probably of Trajan; and a *sestertius* of Marcus Aurelius (RIC (Marcus) 1000).

MF25 (Mote Hill): The site has produced an *antoninianus* of Trajan Decius, and a *denarius* and two *aes*-issues of Hadrian. Besides these, an unconfirmed report suggests that earlier in this century a hoard of *aes*-issues of the first and second centuries was found at or near the site.

Towers

T2B (Campfield): Excavations in 1993 yielded two radiate copies, of Gallienus (RIC 159) and of Tetricus I (RIC 82?).

T13A (Wolsty North): Two coins have been recorded: a *sestertius* of Hadrian (RIC 584) and a radiate copy of Tetricus I.

From the point of view of the use of these sites, it is clearly not insignificant that, out of fifteen coins reported from coastal installations, four (27%) are of the third century A.D.

Objects of Stone

SF nos. 267, 343, 753, 799, 841 (Fig. 5).

Associated with occupation soils within the buildings.

Five fragments of one or more gaming-boards made from naturally flat slabs of micaceous red sandstone. The lines on them have been lightly but distinctly scratched freehand: they make a grid-pattern on four of the pieces (two of which, nos. 3 and 4, fit together) but on the fifth (which is from a corner of a board) they form a set of parallel lines more suited to shove-ha'penny than to draughts. Despite this, the pieces have a very uniform thickness of 29 millimetres (the smallest, thinner piece no. 5 being a detached spall) and may well come from the same board. A similar board comes from the site of Rise How tower (Bellhouse, 1984, 49, fig 5).

SF no. 812 (Not illustrated).

From the plough-disturbed upper levels.

Whetstone, formed from a natural pebble 18 cms. x 4.5 cms, with considerable facetting produced by wear.

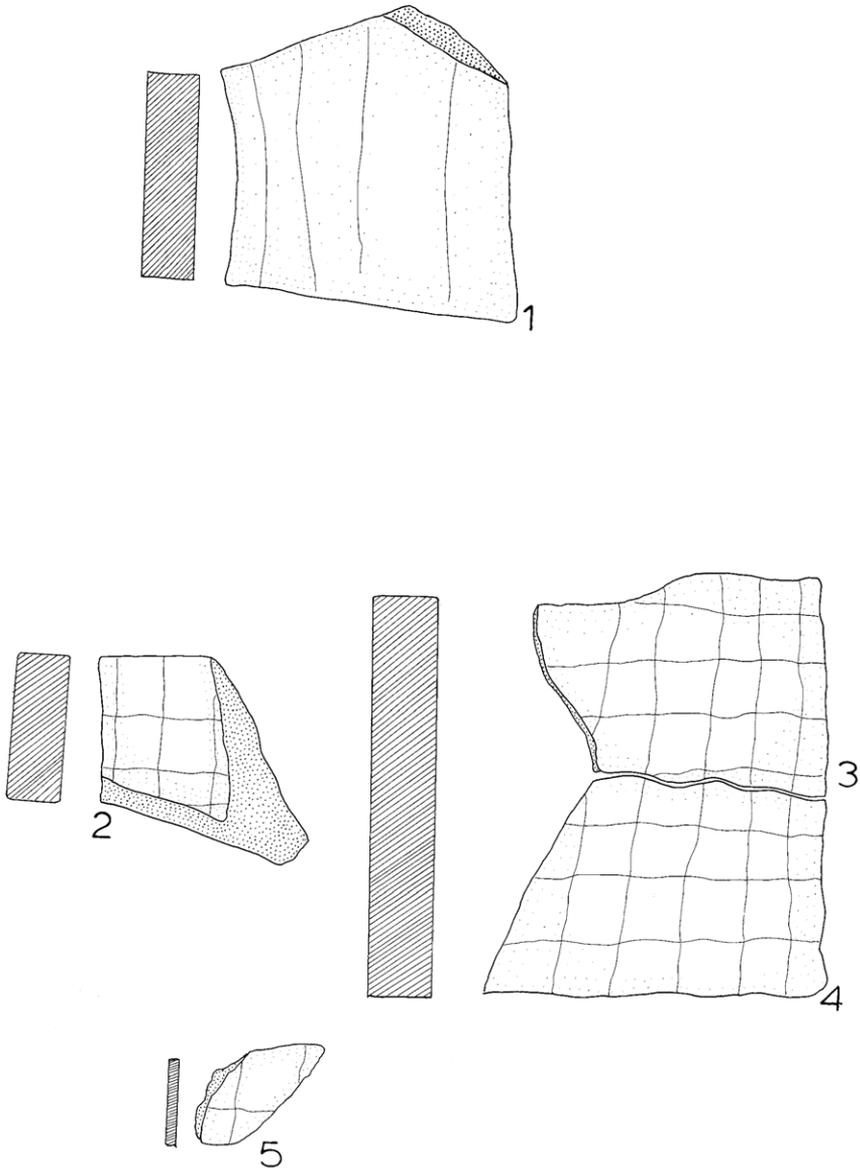


FIG 5. Objects of Stone (1:4).

SF no. 031 (Not illustrated)

From the oven in the south-central building.

Disc of local sandstone, diameter 40 centimetres; thickness irregular, but averaging 3 centimetres. The stone has been roughly chipped to shape, and has a hole 2.5 centimetres in diameter bored through the centre. Probably an oven door or lid.

SF no. 880 (Not illustrated)

From resurfacing of road near the western entrance.

Part of slab, surviving fragment 17 centimetres long by 5 centimetres thick. There is a 3 centimetre hole (of hour-glass section) bored through it. Probably part of an oven, as above.

SF no. 546 (Not illustrated)

From the surface of the axial road.

Part of a disc roughly trimmed from local sandstone. Original diameter *circa* 25 centimetres; thickness 3 centimetres. There is a central 2 centimetre hole, with hour-glass section. Probably part of an oven, as above.

Objects of Iron

With very few exceptions, the condition of the iron objects recorded from Milefortlet 21 was extremely poor: the effect of the strongly acid sands was to reduce ferrous metal to a mass of corrosion products, from which the original metal had in many cases entirely vanished. Many of the fragments recovered were extremely small and appeared to be no more than masses of rust: because of the difficulty of differentiating in the field between these objects, everything which might possibly prove to be a recognisable object was collected and recorded. Subsequent X-radiographs (which have been deposited with the excavation archive) permitted the identification of some objects, although many more remained intransigent masses of corrosion. The most coherent objects were then cleaned and conserved by the Archaeological Conservation Laboratory of the University of Durham. The following catalogue is, therefore, partial and excludes the large number of pieces of iron which were so badly corroded that no identification proved possible, although it was thought, principally because of their size, that many of the small blobs of rust (which make up the greater part of the corpus of iron from the site) were probably small studs or hob-nails.

SF no. 060 (Fig. 6 no. 1).

From the redeposited rampart material spread over the site.

The head of an edged tool, with maximum measurements of 19 x 9 centimetres. It has a shaft-hole, and two cutting edges, one horizontal and one, more badly damaged, vertical. Part of the wooden shaft has been preserved by the exchange of the organic material with the products of corrosion of the iron. The object may be a mattock or entrenching tool of the type sometimes known as a *dolabra*, but is light in construction and is more probably to be interpreted as an adze or similar woodworking tool. It is considerably better preserved than the mass of iron objects from the site: the deposit within which it was found had been to some degree

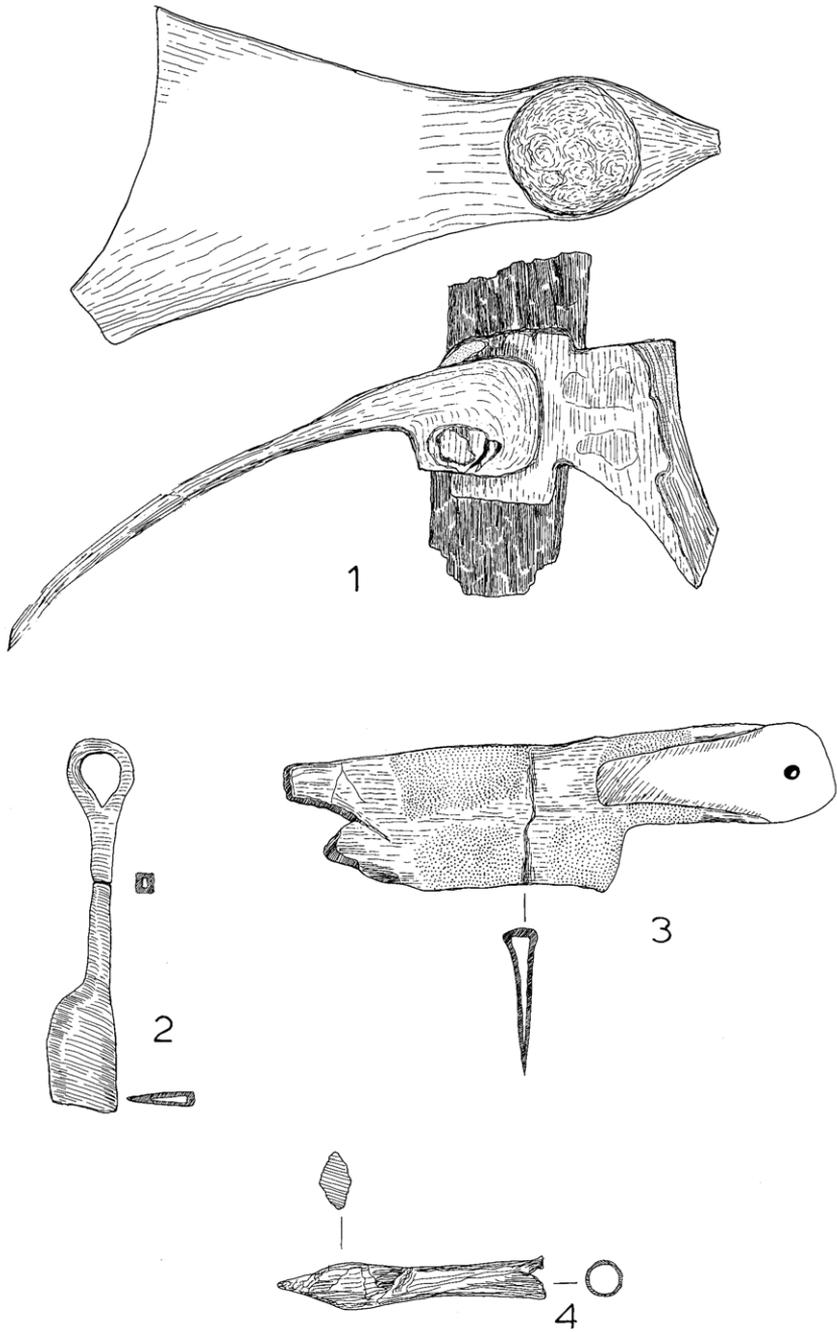


FIG 6. Objects of Iron (1:2).

disturbed, and contained some modern pottery as well as finds which were certainly Roman, but there seems nonetheless no reason to think this find other than Roman.

SF no. 063 (Fig. 6 no. 2)

Associated with the south-western building.

Loop-handled knife, the surviving portion 10 centimetres long, of a simple and common Roman type. It is badly decayed, the shape being represented entirely by corrosion products surrounding the void left by the metal, which has disappeared. The handle appears to have been square-sectioned.

SF no. 100 (Fig. 6 no. 3)

From occupation soil in the northern half.

Heavy knife or cleaver. The surviving fragment is 13 centimetres long. The handle was held by flanges of the metal handle and by a rivet or nail. The original metal has again disappeared completely, leaving only the products of corrosion.

SF no. 607 (Fig. 6 no. 4)

From occupation soil in the northern half.

Socketed head of arrow or bolt, 7 centimetres long. Badly corroded: it is possible that the original object was much lighter than the corroded remains would suggest.

SF no. 103 (Fig. 7 no. 1)

From occupation soil in the northern half.

Iron rod or bar, 23 centimetres long, with small hole at the centre-point or point of balance. Very badly rusted, with lumps of corrosion still adhering.

SF no. 067 (Fig. 7 no. 2)

From the surface of the axial road.

Iron point, flat in section, with rivet-hole near the top. Form masked by attached lumps of corrosion product.

SF no. 038 (Fig. 7 no. 3)

From the fill of a field-drain.

Flat-sectioned, pointed piece, 11 centimetres long. Perhaps the blade of a knife.

SF no. 103 (Fig. 7 no. 4)

From occupation soil in the northern half.

Square-sectioned, large-headed nail. Length, 5 centimetres.

Miscellaneous Finds

SF no. 600 (Fig. 7 no. 5)

Associated with the northern building range.

A pair of studs or mounts (one illustrated) of iron, the outer face tinned. Each has a diameter of about 2.5 centimetres and a simple shank at the back of the circular plate, probably for attachment to cloth or leather. Badly corroded.

SF no. 706 (Fig. 7 no. 6)

From occupation soil in the northern half.

Bead of pale, opaque, blue-green glass. Maximum diameter, 9 millimetres. These

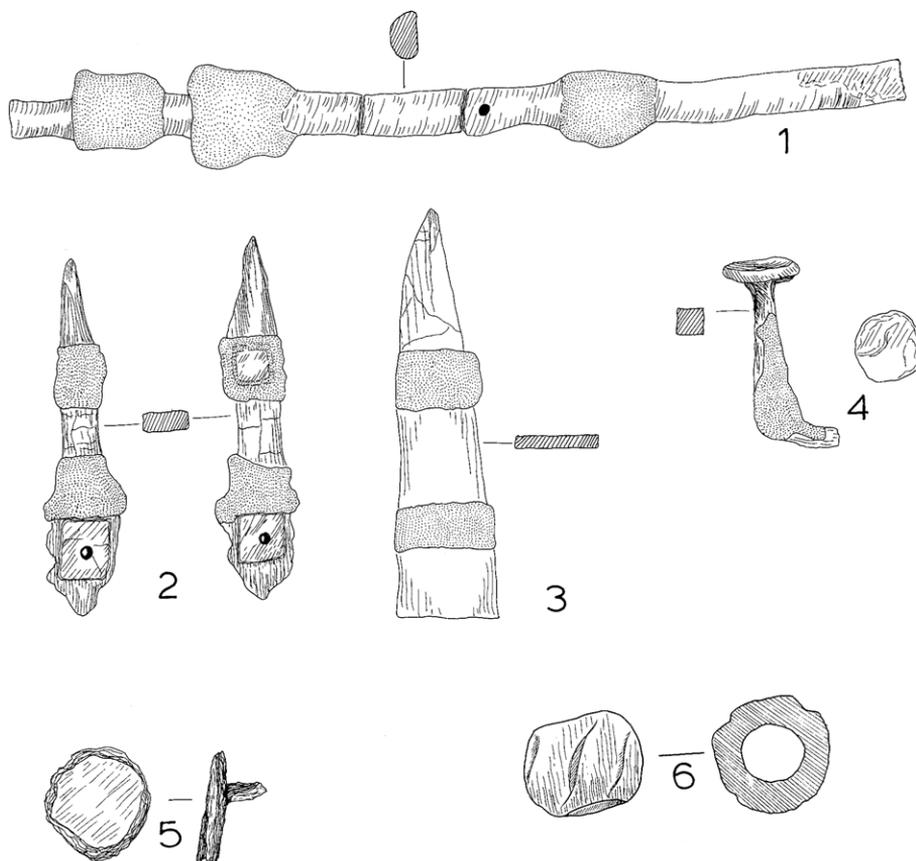


FIG 7. Objects of Iron (1:2). No. 6 Glass bead (2:1).

beads are commonest in Flavian and Antonine contexts, but also resemble others current in the post-Roman period (Guido, 1978, 100).

SF no. 025 (Not illustrated)

From disturbed, redeposited rampart material over surface of the site.

Fragments of highly-corroded iron and lead, in the form of small plates. This object is so ill-preserved that it is impossible to attempt any reconstruction, but it is likely that it represents the remains of a small box, with a maximum length of some 10 centimetres.

Pottery Report by J. N. Dore

1) Samian (ordered by Context & SF no)

Context: 001 SF no: 006

Dr 37: 1 small wall sherd showing part of a large, double bordered ovolo; the tongue does not appear on the sherd but the size and shape of the ovolo matches

that used by the Quintilianus group (see Rogers 1974 B70, Stanfield and Simpson 1958 fig. 17 no. 3) whose period of production was Hadrianic-early Antonine; the fabric and gloss would support this date.

Context: 034 SF nos: 051, 065, 495, 511

Context: 046 SF no: 140

Context: 049 SF no: 088

Context: 050 SF nos: 090, 094

Context: 061 SF no: 353



FIG 8. Stamp of Roppus 2:1.

Dr 18/31: a number of sherds from a single vessel, stamped: ROPPVSF (Fig. 8). A stamp from a different die of this potter, who worked at Les Martres de Veyre, occurs at Corbridge (Hardey and Dickinson 1989 p. 226 no. 100), where it is dated c. A.D. 105-30.

2) Coarseware

Processing

The material was processed in two stages. It was first examined by context and basic information on the size and composition of each context group was recorded. Material was then selected for further study. All but the smallest rim sherds were selected, and wall and base sherds were selected if they could be associated with some degree of certainty with rim sherds or if they possessed some distinctive feature which might enable their attribution to a type. In essence the amount of material selected from each context was the minimum which, in our judgement, was necessary to represent all the types present in the context, and to maximise the representation of each type. Within the selected material each definable vessel was marked with a unique catalogue number (in our parlance a 'Featured Vessel Number').

In the second stage the Featured Vessels were collected together and arranged by vessel class and type. Joins between sherds were noted and every effort was made to find minimum vessel groupings. A certain amount of the featured material could not be assigned to a recognisable vessel type and was therefore set aside. The remaining subset was recorded in detail and illustrated.

Dating

The dating of the assemblage can be summarised as follows:

1) Jars: Black Burnished 1

The everted rim jars in BB1 all display essentially the same rim form whose characteristics place it early in the morphological development suggested by Gillam (1976, see e.g. fig. 1 no. 1). The majority carry the burnished wavy line on the outer surface of the rim, whose presence became 'increasingly rare' (*ibid.* p. 63) after the middle of the second century. Thus they should all be dated early-mid 2nd century.

2) Jars: Grey Ware

These can be subdivided into:

a) Simple everted rim (Featured Vessels: 54, 72 (context 189), 18, 20/48 (context 70, 109), 50 (context 64)): these are particularly plentiful in the first period deposits of the turrets of Hadrian's Wall (see, for example, Woodfield 1965).

b) Copies of BB1 rim forms (Featured vessel 53 (context 64)): this is similar to the BB1 rim form already discussed above and should be of a similar date.

c) Vessels which have a more or less well developed neck between shoulder and rim (Featured vessels: 19/37 (context 45), 40 (context 34), 70 (context 176), 74 (context 176)): this is a type which originated in the late 1st century but which is still found in the earliest deposits on Hadrian's Wall (see, for example, Woodfield 1965, 18b no. 13, from Turret 18b, and Miket & Maxfield 1972, no. 47, from Turret 33b).

d) Small jars or beakers with bead rims (Featured vessels 68 (context 159), 76 (context 262)): generally 2nd century.

3) Flat rim dishes: BB1

Featured vessels: 1/51 (context 3), 57/64/69 (context 50, 144, 159), 67 (context 127). The type was confined to the 2nd century and again, Gillam 1976 provides the best guide to the morphological development of the type: 'There was a tendency, as time went on, for the wall of the dish to lean further outwards' (*ibid.* 73). This should place the MF 21 examples somewhere in the mid-2nd century, or possibly the mid-late 2nd century in the case of FV 57/64/69 which appears to be the latest vessel, on the basis of Gillam's criteria.

4) Flat rim bowl: Grey Ware

Featured vessel 45 (context 108). This appears to be a grey ware copy of a BB1 flat rim bowl with chamfer. The equivalent BB1 type dates, according to Gillam's morphological scheme (1976), to the mid-2nd century.

5) Mortarium

Featured vessel 10/14/15/22/33/56 (contexts 3, 38, 50, 70, 74). The drawing of this vessel cannot be regarded as entirely reliable since it was restored from a number of somewhat abraded fragments, not all of which joined. The rim form suggests a Trajanic-Hadrianic date (see Gillam Types 243 & 244 used at Corbridge by Sulloniacus). The fabric suggests a northern origin, possibly in the Carlisle area (see Carlisle Fabrics 601-6 & 609-12 in Hartley 1990).

6) Bowl in (?) colour-coated fabric

Featured vessel 2 (context 2). This appears to be in a colour-coated fabric, though the colour and, in particular, the texture of the surface coating does not immediately suggest any Roman parallels. The piece has been shown to a number of other researchers working in the Roman pottery field. None had any suggestions. The piece may not even be Roman: the context is a disturbed horizon of redeposited rampart material, which also contains modern pottery.

From the above it will be seen that, with the possible exception of FV 2, all the vessels in the assemblage can be dated to within the 2nd century A.D. The type with the potential to be the earliest is the necked grey ware jar (2c above) whose range commences in the first century A.D. As already mentioned, however, it is still

present in deposits of the first period of Hadrian's Wall and thus there is no reason to see its date here as earlier than Hadrianic. The type which is potentially the latest is the single example of the flat rim dish in BB1 (3 above, 57/64/69 (context 50)) whose range extends into the late 2nd century A.D.

The most parsimonious reading of the combined date ranges of the types comprising the assemblage yields a minimum range for the assemblage of mid 2nd century, i.e. it would have been possible, on current dating evidence, for all the types to have arrived at the site if it had been occupied for only a short interval around the middle of the 2nd century. An earlier commencement, e.g. Hadrianic, and an extension into the late 2nd century could, of course, be accommodated without violating any of the known dating, though the complete absence of vessels in BB2 militates strongly against an extension much beyond the mid-2nd century.

Fabrics

The fabric of each vessel was examined in the hand and under a binocular microscope (x 20 magnification) equipped with an eyepiece graticule graduated in mm. The following details were recorded:

Colour: body colour across the vessel-wall supplemented where necessary with core, margin and surface colours; precise Munsell values were not recorded but a set of Munsell Soil Colour Charts (1975 ed.), removed from its binder and mounted on a neutral grey card, was always within sight during pottery processing, in order to provide some degree of visual calibration and ensure some standardisation of descriptive terms throughout the report. The following list gives an approximate correspondence between the descriptive terms used here and Munsell codes:

Orange/brown and dark brown: Hue 5YR; orange/brown: 5/6 & 5/8 - 6/6 & 6/8;
dark brown: Value <5, Chroma >2

Orange/red: 2.5YR 5/8 - 10R 5/8

Red/brown: Hue 2.5YR - 10R, Value <5, Chroma >4

Pink: 10R 6/4-6/6

Orange: around 5YR 7/8

Orange/yellow: around 7.5YR 7/8

Yellow: Hues 10 YR and 2.5 Y, Value >6, Chroma >4

Inclusion type: without recourse to thin-sectioning and the petrological microscope inclusions were only recorded under general headings: e.g.: quartz, iron, volcanically derived, limestone, mica etc.

Inclusion size: two estimates of the texture of each type were recorded: the first relates to the size of the major fraction, the second is the maximum grain size. In cases where the grains were well sorted the two estimates have the same value. Six categories were used:

Texture 1 (T1): not >0.1 mm

Texture 2 (T2): not >0.2 mm

Texture 3 (T3): not >0.5 mm

Texture 4 (T4): not >1 mm

Texture 5 (T5): not >2 mm

Texture 6 (T6): not >4 mm

The density of inclusions was expressed as the percentage of the area of the fresh break examined under the microscope which was occupied by inclusions. This was estimated by comparison with standard charts (see for example Terry and Chilingar 1955). The values and their associated terms are as follows:

Sparse: 0-10 %
 Moderate: 10- 30 %
 Abundant: 30+ %

THE ARRANGEMENT OF THE CATALOGUE

The catalogue of pottery is arranged by excavated context. Within each entry all the Featured Vessels selected from the context are listed. As explained above, in some cases material selected during the first stage of processing could not subsequently be assigned to a Type (i.e. it was too fragmentary and no joins could be found with more diagnostic sherds). No further information is given on this. Where a full vessel description is given, the information is arranged as follows:

Featured Vessel Numbers; Vessel class; fabric description (see above); diameter in centimetres; rim percentage (Estimated Vessel Equivalent).

DISCUSSION

Vessel Classes and Fabric

Fig. 9 shows the coarseware assemblage broken down by vessel class and in, the case of the jars and bowl, by fabric, in terms of:

- a) estimated minimum vessels;
- b) rim percentage (also called estimated vessel equivalents). It will be seen that there is a reasonably good correspondence between the two measures.

Of particular note is the occurrence of South-Western BB1 in the assemblage (see contexts 34 and 70, Featured vessels 9 and 11/25). Holbrook and Bidwell have recently published a distribution map of the ware in Northern Britain (1991, fig. 26) which emphasises the western bias to the distribution.

Abbreviations used are as follows:

AM = Amphorae
 FL = Flagons
 JA = Jars
 BO = Bowls & Dishes
 M = Mortaria

THE CATALOGUE

Context: 002 SF no: 9 Total sherds: 1

Featured Vessels:

(2, Bowl (?))

Very pale pink, dark brown colour coat (?); inclusions: sparse, rounded quartz T3, in a clay matrix containing a scatter of fine red and shining grains; D20 (?) 2%

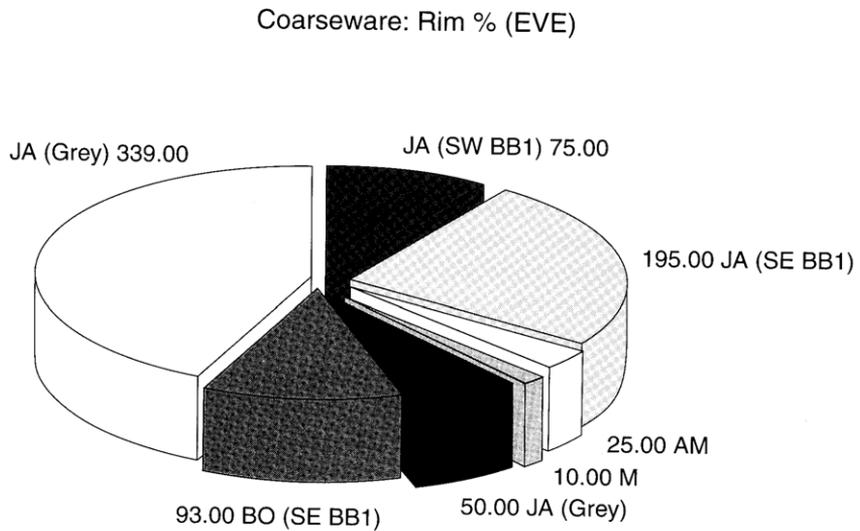
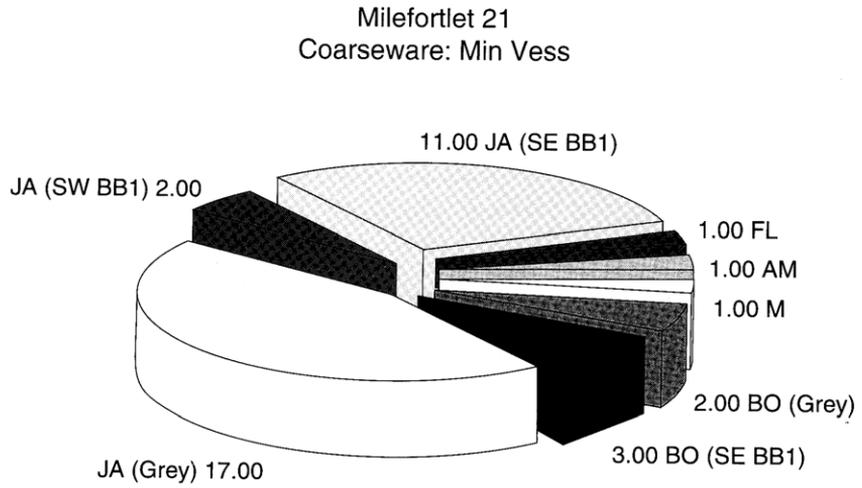


FIG 9.

Context: 003 SF no: 496 Total sherds: 1

Featured Vessels:

(30, Amphora, same vessel as 59, 61, 62, 65. Not illustrated.) Orange brown with paler core; inclusions: common, sub-rounded quartz T4, and occasional mica T3, felspar T3 and igneous rock fragments T4; D19.5 25%. Dressel 20 type.

Context: 003 SF no: 531 Total sherds: 4

Featured Vessels:

(39, Jar. Not illustrated)

4 wall sherds BB1 JA with acute angle lattice

Context: 003 SF no: 62 Total sherds: 6

Featured Vessels:

(1, Dish, same vessel as 51) BB1: dark grey, black burnished surface with cross hatched decoration; inclusions: abundant, sub-rounded quartz T3 (max T4); D19 33%

Context: 003 SF no: 335 Total sherds: 1

Featured Vessels:

(16, Jar, same vessel as 24)

BB1: black, black burnished outer surface and inner rim; no wavy line visible on neck; inclusions: common, sub-rounded quartz T3 (max T4); D12 20%

Context: 003 SF no: 510 Total sherds: 1

Featured Vessels:

(33, mortarium, same vessel as 10, 14, 15, 22, 56)

Context: 003 SF no: 514 Total sherds: 2

Featured Vessels:

(35, Jar, same vessel as 13, 28, 34)

Context: 003 SF no: 567 Total sherds: 1

Featured Vessels:

(44, Jar, same vessel as 7)

Context: 003 SF no: 597 Total sherds: 1

No Featured Vessels

Context: 003 SF no: 620 Total sherds: 1

Featured Vessels:

(51, Dish, same vessel as 1)

Context: 003 SF no: 704 Total sherds: 1

Featured Vessels:

(61, Amphora, same vessel as 30. Not illustrated)

Handle fragment from Dressel 20 amphora

Context: 003 SF no: 705 Total sherds: 1

Featured Vessels:

(62, Amphora, same vessel as 30. Not illustrated)

Wall sherd with handle springer from Dressel 20 amphora

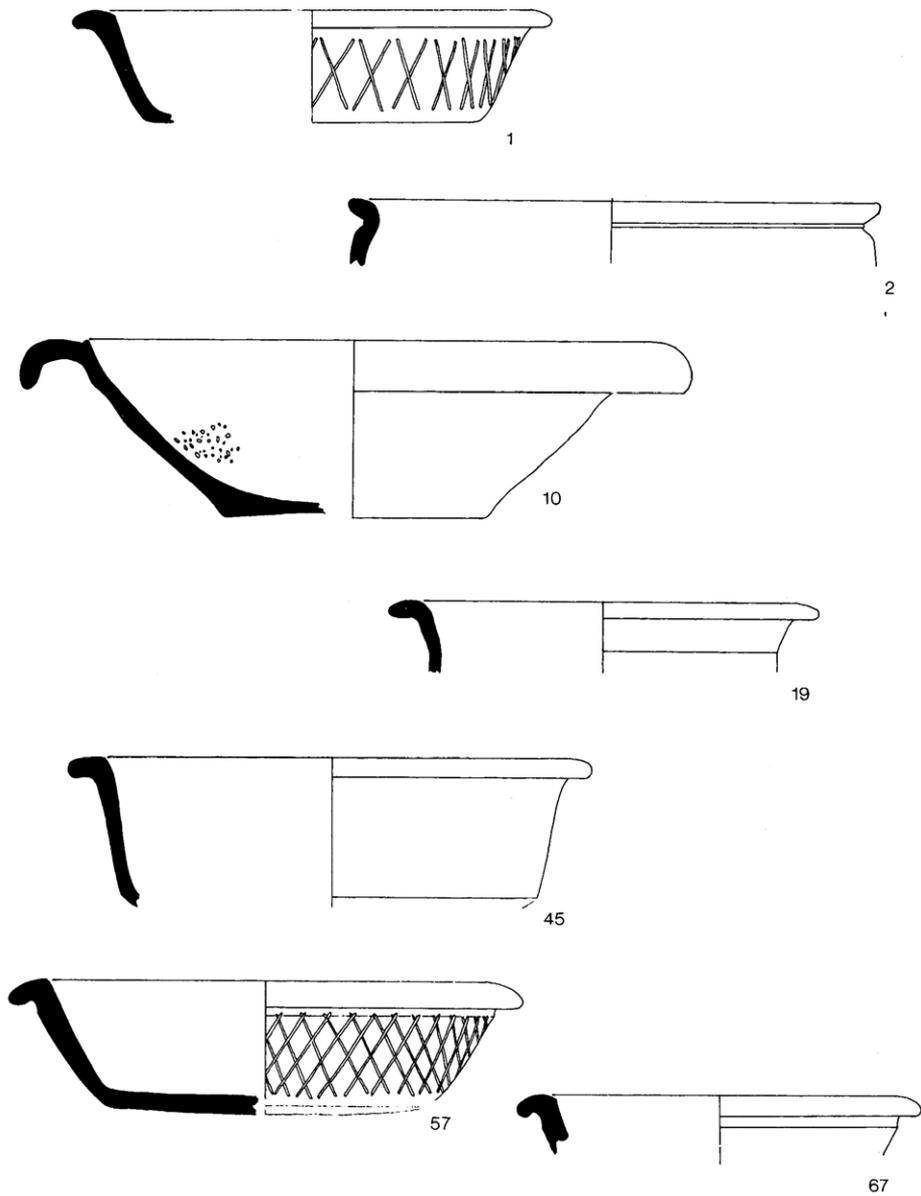


FIG 10. The pottery: bowls and mortarium. Scale 1:3. Numbers refer to Featured Vessels.

Context: 003 S SF no: 751 Total sherds: 3

No Featured Vessels:

3 wall sherds BB1 with acute angle lattice

Context: 009 SF no: 44 Total sherds: 1

Featured Vessels:

(4, Jar, same vessel as 31, 36)

BB1: black, burnished on outer surface and inside rim; burnished wavy line on neck; inclusions: common angular quartz T3; D 12.5 48%

Context: 022 SF no: 91 Total sherds: 4

Featured Vessels:

(5, Jar. Not illustrated)

2 base sherds 2 wall sherds grey ware jar

Context: 034 SF no: 73 Total sherds: 3

Featured Vessels:

(5, Jar. Not illustrated)

1 base sherd, 2 wall sherds grey ware jar (same vessel as context 022, SF NO 91).

Context: 034 SF no: 458 Total sherds: 1

Featured Vessels:

(28, Jar, same vessel as 13, 34, 35)

Context: 034 SF no: 196 Total sherds: 1

Featured Vessels:

(7, Jar, same vessel as 44)

BB1: Pinkish brown with dark brown core and lustrous black burnished outer surface and inside of rim; inclusions: common, sub-rounded quartz T4, and occasional grains of ? lime(stone) T4, and angular, fine-grained rock fragments T4; D12.5, 15%

Context: 034 SF no: 257 Total sherds: 2

Featured Vessels:

(9, Jar)

BB1: very dark brown, core of same colour with thin dull orange brown margins, black burnished outer surface and inside of rim; burnished wavy line just discernible on neck; inclusions: common, sub-rounded quartz T3; D13 30%

Context: 034 SF no: 437 Total sherds: 1

Featured Vessels:

(27, Jar. Not illustrated)

BB1: black, black burnished outer surface and inside of rim; inclusions: common, sub-rounded quartz T3 (max T4); D? 5%

Context: 034 SF no: 488 Total sherds: 1

Featured Vessels:

(29, Jar. Not illustrated)

mid grey brown, black outer surface; inclusions: common, sub-rounded quartz T3 (max T4); D? 2%

Context: 034 SF no: 500 Total sherds: 7

No Featured Vessels:

1 wall sherd ?BB1

2 wall sherds micaceous gritty ware

4 wall sherds grey ware

Context: 034 SF no: 505 Total sherds: 5

Featured Vessels:

(31, Jar, same vessel as 4, 36)

(32, Jar. Not illustrated): 4 base sherds grey ware

Context: 034 SF no: 506 Total sherds: 1

No Featured Vessels:

1 wall sherd grey ware

Context: 034 SF no: 512 Total sherds: 3

Featured Vessels:

(34, Jar, same vessel as 13, 28, 35)

Context: 034 SF no: 534 Total sherds: 16

Featured Vessels:

(40, Jar)

mid brown, dark grey surface; inclusions: sparse sub-rounded quartz T3 and black iron-bearing grains T3, in a silty matrix; D15 19%

(41, Jar: wall sherds only, not illustrated)

Context: 034 SF no: 544 Total sherds: 1

Featured Vessels:

(42, Jar: BB1. Not illustrated)

Context: 034 SF no: 702 Total sherds: 2

Featured Vessels:

(60, Jar)

BB1: black, dark grey-brown core, surface almost entirely abraded; inclusions: common, sub-rounded quartz T3; D12 15%

Context: 034 SF no: 858 Total sherds: 1

Featured Vessels:

(71, Jar. Not illustrated)

BB1: dark grey-brown, abraded surface; inclusions: common, sub-rounded quartz, T3; D? 5%

Context: 034 SF no: 862 Total sherds: 1

No Featured Vessels:

1 base sherd grey ware

Context: 038 SF no: 152 Total sherds: 2

Featured Vessels:

(6, Jar. Not illustrated)

Pale grey, black outer surface; inclusions: common, sub-rounded quartz T2 (max T4), and red and black iron-bearing grains T3, in a clay matrix containing a fine (T1 and less) scatter of multi-coloured grains; D10 12%

Context: 038 SF no: 188 Total sherds: 4

Featured Vessels:

(8, Jar, ?same vessel as 18)

mid grey, dark grey outer surface; inclusions: sparse,
sub-rounded quartz T4; D13 13%

Context: 038 SF no: 217 Total sherds: 24

Featured Vessels:

(8, Jar)

Context: 038 SF no: 272 Total sherds: 1

Featured Vessels:

(10, mortarium, same vessel as 14, 15, 22, 33, 56) soft orange; inclusions: sparse, rounded iron-rich grains T3 and occasional quartz T3 and mica T2; trituration grit: quart T5, and occasional fine-grained igneous (?) rock fragments T2; D18 (at inner edge of rim) 10%. The drawing of this vessel cannot be regarded as entirely reliable since it was restored from a number of somewhat abraded fragments, not all of which joined.

Context: 045 SF no: 518 Total sherds: 35

Featured Vessels:

(36, Jar, same vessel as 4, 31)

(37, Jar, same vessel as 19)

Context: 045 SF no: 519 Total sherds: 22

Featured Vessels:

(38, Jar. Not illustrated)

Context: 050 SF no: 26 Total sherds: 19

Featured Vessels:

(3, Jar. Not illustrated)

Context: 050 SF no: 625 Total sherds: 5

Featured Vessels:

(52, Jar. Not illustrated)

Context: 050 SF no: 724 Total sherds: 1

Featured vessels:

(65, Amphora, same vessel as 30. Not illustrated)

Wall sherd with handle springer from Dressel 20 amphora

Context: 050 SF no: 665 Total sherds: 1

Featured vessels:

(56, mortarium, same vessel as 10, 14, 15, 22, 33)

Context: 050 SF no: 722 Total sherds: 4

Featured vessels:

(64, Dish, same vessel as 57, 69)

Context: 062 SF no: 691 Total sherds: 1

Featured vessels:

(58, Jar. Not illustrated)

Context: 062 SF no: 697 Total sherds: 3

No Featured vessels:

2 wall sherds & 1 base sherd BB1 jar with acute angle lattice

Context: 062 SF no: 699 Total sherds: 1

Featured vessels:

((59, Amphora, same vessel as 30. Not illustrated)

Context: 062 SF no: 815 Total sherds: 4

No Featured Vessels:

4 wall sherds BB1 jar with acute angle lattice

Context: 062 SF no: 819 Total sherds: 1

No Featured Vessels:

1 wall sherd BB1 jar

Context: 062 SF no: 823 Total sherds: 1

No Featured Vessels:

1 base sherd BB1 jar

Context: 064 SF no: 605 Total sherds: 1

Featured Vessels:

(50, Jar)

mid grey, smooth black outer surface; inclusions: sparse, rounded quartz T4; D11 12%

Context: 064 SF no: 644 Total sherds: 3

Featured Vessels:

(53, Jar)

very pale brown, pale grey sub-surface margins, smooth dark grey outer surface; inclusions: sparse, rounded quartz T4, and red iron bearing grains T4, in a clay matrix which contains a fine scatter (T1) of quartz and dark grains; D14 30%

Context: 064 SF no: 652 Total sherds 37

Featured Vessels:

(54, Jar. Not illustrated)

Mid grey with darker grey surface; inclusions: common, sub-rounded quartz T3 (max T4), occasional black iron rich grains T4; D12.5, 100%

Context: 064 SF no: 648 Total sherds: 1

No Featured Vessels:

grey ware

Context: 064 SF no: 660 Total sherds: 1

Featured Vessels:

(55, Jar. Not illustrated)

BB1: black, black burnished outer surface and inside rim; inclusions: common, sub-rounded quartz T3; D? 5%

Context: 067 SF no: 410 Total sherds: 1

Featured Vessels:

(25, Jar, same vessel as 11)

- Context: 070 SF no: 285 Total sherds: 3
 Featured Vessels:
 (11, Jar, same vessel as 25)
 BB1: Orange, dark grey brown core, burnished deep black outer surface (?slip);
 inclusions: common sub-rounded quartz T3 (max T4); burnished wavy line on
 neck; D10.5 45%.
- Context: 070 SF no: 288 Total sherds: 1
 Featured Vessels:
 (11, Jar)
- Context: 070 SF no: 293 Total sherds: 2
 Featured Vessels:
 (12, Jar. Not illustrated)
- Context: 070 SF no: 294 Total sherds: 7
 Featured Vessels:
 (13, Jar, same vessel as 28, 34, 35)
 BB1: orange brown, dark brown core, black burnished outer surface and inside of
 rim; burnished wavy line on neck; inclusions: common, sub-rounded quartz, T4;
 D12.5 48%
- Context: 070 SF no: 377 Total sherds: 3
 Featured Vessels:
 (22, mortarium, same vessel as 10, 14, 15, 33, 56)
- Context: 070 SF no: 390 Total sherds: 16
 Featured Vessels:
 (20, Jar, same vessel as 48)
 dark grey brown, surface mostly abraded; inclusions: sandy matrix with common
 sub-rounded quartz T3 (max T4), mica T3, and occasional black vitreous grains
 T3; D13 15%
- Context: 070 SF no: 349 Total sherds: 1
 Featured Vessels:
 (18, Jar, possibly same vessel as 8)
 dark grey, pale grey sub-surface margins, mid grey outer surface; inclusions: sparse,
 quartz T3 (max T4), and occasional limestone T3, in a silty matrix; D12 26%
- Context: 070 SF no: 366 Total sherds: 1
 Featured Vessels:
 (19, Bowl, same vessel as 37)
 mid grey, black outer surface mostly abraded; inclusions: common, sub-rounded
 quartz T2 (max T4) in a clay matrix containing a scatter of fine black grains; D17.5
 25%
- Context: 070 SF no: 401 Total sherds: 10
 Featured Vessels:
 (23, Jar. Not illustrated)

- Context: 070 SF no: 407 Total sherds: 1
 Featured Vessels:
 (24, Jar, same vessel as 16)
- Context: 070 SF no: 416 Total sherds: 1
 Featured Vessels:
 (26, Jar. Not illustrated)
- Context: 074 SF no: 322 Total sherds: 1
 Featured Vessels:
 (14, mortarium, same vessel as 10, 15, 22, 33, 56)
- Context: 074 SF no: 325 Total sherds: 1
 Featured Vessels:
 (15, mortarium, same vessel as 10, 14, 22, 33, 56)
- Context: 076 SF no: 371 Total sherds: 1
 Featured Vessels:
 (21, Jar. Not illustrated)
- Context: 076 SF no: 348 Total sherds: 66
 Featured Vessels:
 (17, Flagon, base and body sherds only, not illustrated)
 hard, red; inclusions: common, sub-rounded quartz, T2 (max T4) in a compact,
 well fired clay matrix
- Context: 108 SF no: 555 Total sherds: 5
 Featured Vessels:
 (43, Jar. Not illustrated)
- Context: 108 SF no: 568 Total sherds: 2
 Featured Vessels:
 (45, Bowl)
 very pale grey, dark grey core in thickest part of sherd, dark grey outer surface;
 inclusions: common, sub-rounded quartz T3, iron-rich grains T3, in a silty matrix;
 D17.5 25%
- Context: 108 SF no: 570 Total sherds: 3
 Featured Vessels:
 (46, Jar, possibly the same vessel as 47. Not illustrated)
 pale grey, dark grey surface; inclusions: common, sub-rounded quartz T3 in a sandy
 matrix; D13 10%
- Context: 108 SF no: 572 Total sherds: 3
 Featured Vessels:
 (47, Jar, possibly the same vessel as 46. Not illustrated)
 very pale grey, darker grey surface; inclusions: common, sub-rounded quartz T4,
 and occasional clay pellets T5, in a sandy matrix; D13 10%
- Context: 108 SF no: 591 Total sherds: 1
 Featured Vessels:
 (49, Jar. Not illustrated)

Context: 109 SF no: 575 Total sherds: 5

Featured Vessels:

(48, Jar, same vessel as 20)

Context: 127 SF no: 757 Total sherds: 1

Featured Vessels:

(67, Dish)

BB1: black, black burnished surface with cross-hatched decoration; inclusions: abundant, sub-rounded quartz T4; D17 5%

Context: 144 SF no: 676 Total sherds: 4

Featured Vessels:

(57, Dish, same vessel as 64, 69)

BB1: dark brown, black burnished surface with faint lattice decoration visible; inclusions: abundant, sub-rounded quartz T4; D20 55%

Context: 152 SF no: 714 Total sherds: 1

Featured Vessels:

(63, Jar. Not illustrated)

BB1: black; inclusions: common, sub-rounded quartz T3 (max T4); D? 5%

Context: 152 SF no: 738 Total sherds: 1

Featured Vessels:

(66, Jar)

BB1: dark brown, dark brown core with thin orange brown margins, black burnished outer surface and inside of rim; no wavy line visible on neck, but surface considerably abraded; inclusions: common, sub-rounded quartz T4; D15 14%.

Context: 159 SF no: 765 Total sherds: 12

Featured Vessels:

(68, Jar)

dark grey, thin mid grey core; inclusions: common, rounded quartz T3 (max T4) and fine-grained rock fragments T4, in a clay matrix containing veins and fine grains of iron rich material; D12 13%

Context: 159 SF no: 766 Total sherds: 2

Featured Vessels:

(69, Dish, same vessel as 57, 64)

Context: 176 SF no: 834 Total sherds: 7

Featured Vessels:

(70, Jar)

pale grey-brown, dark grey surface mostly abraded; gritty feel; inclusions: common, sub-rounded quartz T3 and occasional black iron-bearing grains T3 in a silty matrix; D12 20%

Context: 176 SF no: 886 Total sherds: 6

Featured Vessels:

(74, Jar)

mid grey, smooth surface; inclusions: sparse, rounded quartz T4 and rock fragments T6 in a silty matrix; D12 27%

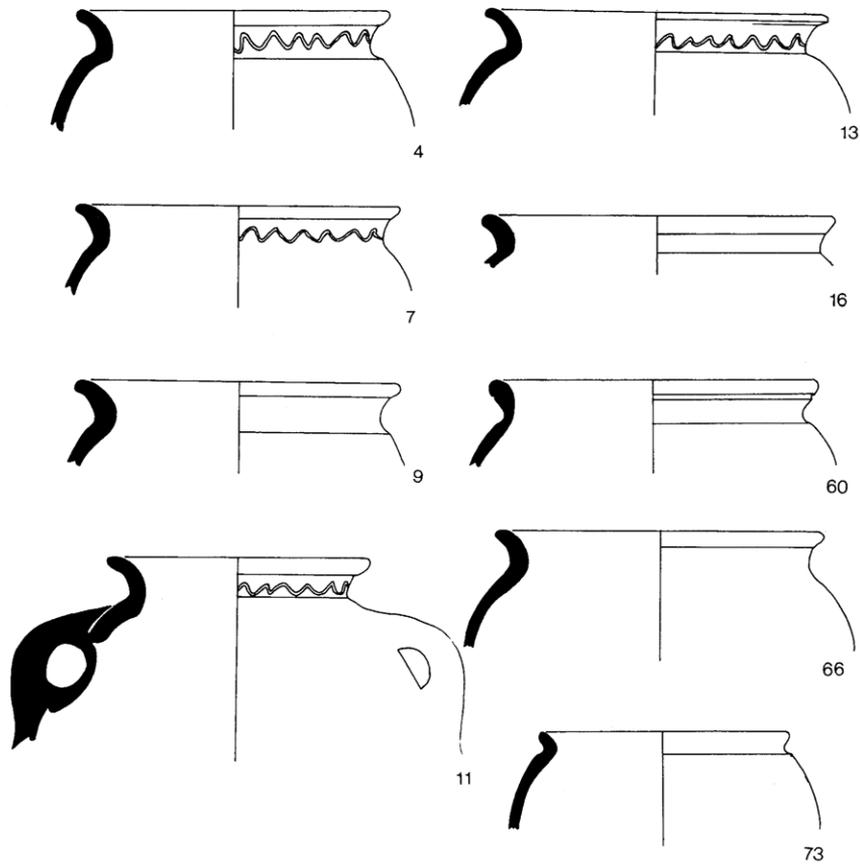


FIG 11. The pottery: jars. Scale 1:3. Numbers refer to Featured Vessels.

Context: 189 SF no: 864 Total sherds: 1

Featured Vessels:

(72, Jar)

very pale grey, black surface mostly abraded; inclusions: common, sub-rounded quartz T3, and red and black iron bearing grains T3 in a clay matrix containing a fine scatter (T1) of quartz; D11 13%

Context: 204 SF no: 877 Total sherds: 1

Featured Vessels:

(73, Jar)

BB1: dark grey-brown, abraded surface; inclusions: common, sub-rounded quartz T3 (max T4); D10 15%

Context: 207 SF no: 942 Total sherds: 1

Featured Vessels:

(75, Jar. Not illustrated)

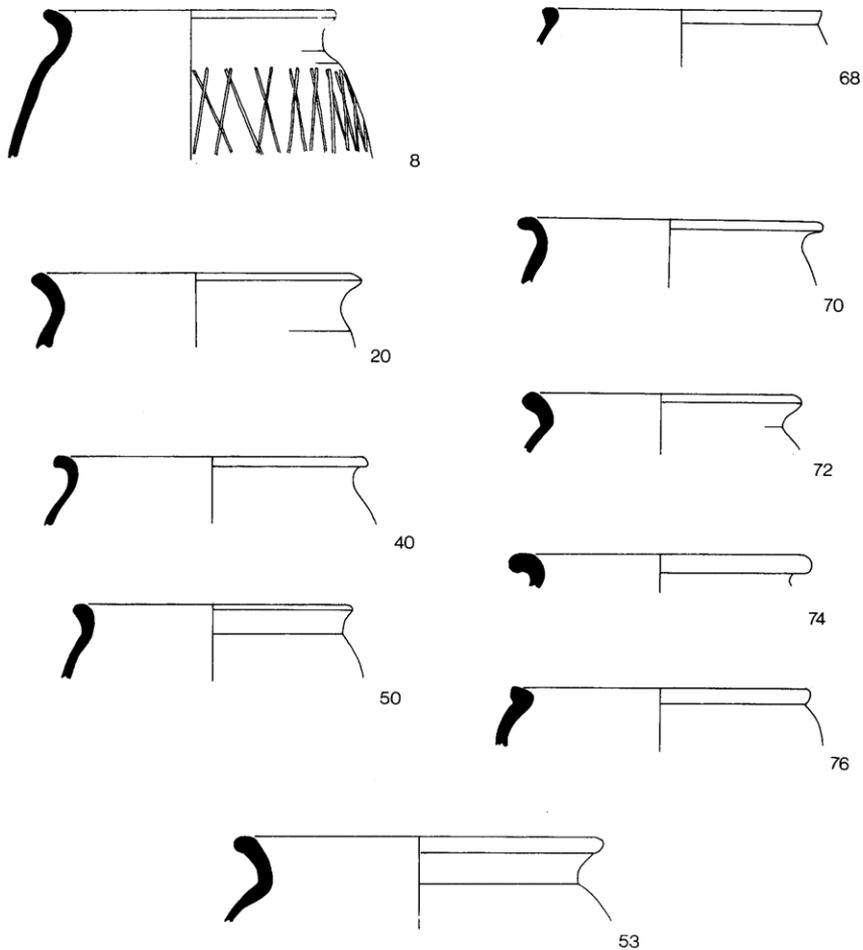


FIG 12. The pottery: jars. Scale 1:3. Numbers refer to Featured Vessels.

mid grey, wet-hand-slipped surface; inclusions: sparse, rounded quartz T3; D12 10%

Context: 229 SF no: 884 Total sherds: 15

No Featured Vessels:

1 wall sherd & 1 base sherd grey ware jar

Context: 262 SF no: 950 Total sherds: 1

Featured Vessels:

(76, Jar)

mid grey brown; inclusions: sparse, rounded quartz T2 (max T4), occasional limestone T3 and fine grained rock fragments T5; D12 7%

MILEFORTLET 21 IN THE COASTAL SYSTEM

The excavation of Milefortlet 21 has established that the site had only a single period of construction and occupation. It seems overwhelmingly probable that this single phase should be dated to the Hadrianic period and to the activity and planning associated with the earliest period of Hadrian's Wall (Wall Period 1a): the evidence for the date of the milefortlet which is provided by pottery and by coins is entirely consistent with such a Hadrianic attribution. The duration of the occupation is not certain, but the rather limited occupation deposits which were identified and the general lack of evidence for substantial repair or maintenance of the structures suggest that it was short. Generally, the chronology suggested by Potter for Milefortlet 1 (Biglands) seems quite appropriate here: construction as part of the general fortification of the Hadrianic frontier in *circa* 125, and abandonment around 140 as part of a larger reduction of garrisons in the north-west (Potter, 1979, 358-60). There is, however, no evidence at all for subsequent second-century reoccupation of the site. It is tempting to see the abandonment of Milefortlet 21 in the context of the reduction of the garrison of the Maryport fort (from which its troops may be supposed to have been allocated) from milliary to quingenary strength (Jarrett, 1976). It is, however, very unlikely that a single milefortlet should have been decommissioned in isolation, and the dating of Milefortlet 21 therefore has implications for the history of the Roman defences along a much longer section of the Cumberland coast.

The fact is inescapable that both of the milefortlets north of Moricambe which have been substantially investigated – Biglands (Potter, 1977) and Cardurnock (Simpson and Hodgson, 1948) – exhibit three periods of second-century construction and use. It is clear, however, that the nature of the coast, and presumably of any perceived military threat, changes substantially at the mouth of the Wampool, above which the narrow mouth of the estuary, relatively easily forded, appears much more vulnerable than the increasingly widening Solway further south. This raises the suggestion that sites on the Cardurnock peninsula were reoccupied in the Antonine period, while those along the more open coast further south were recognised as superfluous and kept out of commission.

This raises the problem of whether other milefortlet sites south of Moricambe have unambiguous evidence for three second-century periods. The main source of information on this point is Bellhouse, whose Schedule (Bellhouse, 1989) suggests that the sequence seen at Biglands is indeed to be seen on sites further south. The basis for this, however, should be examined: it appears to be a result of Bellhouse's investigation of Milefortlet 20 (Low Mire) where his trenches disclosed three distinct types of turf, which he dated to the three constructional periods of Biglands, despite the notable lack of direct evidence for dating at Milefortlet 20 (Bellhouse, 1981). He then reconsidered the evidence from other sites which he had already sampled by the spade, and identified the periods of building by the presence or absence of each of the three types of turf. Thus, for example, he lists (Bellhouse, 1989, 48) three periods at Milefortlet 22, although only one period of construction is mentioned in the report of the original excavation (Bellhouse, 1963), and the pottery report (by Eric Birley) had stated that "there was nothing that one would wish to date any later than A.D. 140": after reinvestigating the site some years later

(Bellhouse, 1970) the excavator was still able to say “It is certain that only one occupation level exists”. The weight to be accorded to the presence of different turf types seems rather slight to carry over such a fundamental reappraisal. In fact, none of the milefortlets south of Cardurnock has clear evidence for the threefold sequence seen there and at Biglands: there is little or no stratified pottery of a date later than that of Hadrian, and no chronological framework for such episodes of repair and rebuilding as do seem to have occurred. Dating evidence from the towers is even more scarce, though at least at Rise How “there is nothing to suggest re-use of the tower after A.D. 140” (Bellhouse, 1984). The single period of Milefortlet 21 is, therefore, best seen not in isolation, but as consistent with the evidence from other Solway sites and indicative of the permanent removal from commission of the sites in this sector after reappraisal of the military need at the time of the first reoccupation of the Tyne-Solway frontier.

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