II

New Archaeological and Palynological Evidence for a Sub-Roman Reoccupation of Hadrian's Wall

K. R. Dark and S. P. Dark

INTRODUCTION

IN 1992 in *Britannia* K. R. Dark (hereafter KRD) suggested that Hadrian's Wall was redefended in the later fifth-sixth century, the forts along its line becoming the hill-fort-like strongholds of sub-Roman British warbands (Dark 1992a). He noted that among forts reoccupied in north Britain as a whole, it is only those with textual evidence of belonging to the Command of the *Dux Britanniarum* (mostly on, or related to, the Wall) which show archaeological evidence of sub-Roman secular use. Consequently, the reoccupation of forts on the Wall may represent a reconstruction of the *Dux*'s command, albeit in a sub-Roman, not Late Roman, form. An ancillary argument was proposed in 1994 in *Civitas to Kingdom* (Dark 1994a, 73–4), where it was suggested that a series of similar reoccupations at forts in northern England indicates that the principal Roman road from York to Corbridge was also kept "open" as a line of communication, so implying a comprehensive sub-Roman redefence of northern Britain consistent with this view.

In archaeological terms alone, this hypothesis differs from the conventional view of the end of the Wall garrisons in two key ways. First, it suggests discontinuity of occupation in the fifth century—that they did not "wither away"—whereas the conventional view relies upon continuity of occupation, with forts being occupied by "residual" populations transforming into farming settlements after the end of the Roman period, on the analogy of the Danubian provinces (for instance, Frere 1987, 417). Second, in the conventional view each site would be expected to develop somewhat independently in the fifth century and later, while the "Redefence Hypothesis" emphasizes the similarities between the archaeological evidence from these reoccupied forts and stresses (in the context of widespread disuse of fourth-century forts elsewhere in Britain) that they form a unique regional group.

Shortly after KRD's *Britannia* paper was published, another interpretation was proposed by Casey (1993). This interpretation, given in a paper in *The Later Roman Empire Today*, sets out a somewhat different view to the conventional hypothesis, while retaining a continuity-based model. Like KRD, Casey summarized the evidence, as he saw it, for fifth- (and possibly sixth-) century activity on Hadrian's Wall and at forts elsewhere in northern Britain, much of which is similar to that identified by KRD, although he does not concern himself with the town sites included in KRD's analysis: York, Carlisle, Catterick, Corbridge and Malton. Casey argues not for disuse and subsequent reoccupation by warbands, however, but for continuity of devolved Roman garrisons based on local communities derived from the Late Roman past. These he sees as surviving through the fifth century, eventually to merge with communities formed by Anglo-Saxon settlers.

In support of his view Casey (1993, 72) produces one apparently strong piece of information: environmental evidence interpreted as indicating continuity in agricultural activity for about one century after the late fourth century. This, it might be supposed, makes it far more likely that this, or the conventional view, is correct, and that KRD's interpretation of discontinuity was erroneous.

The present paper results from an independent study by SPD, begun in 1991, involv-

ing the re-examination of existing pollen sequences covering the period 400–800 in Britain (S. P. Dark in press). It combines this new evidence with new discoveries and reinterpretations of archaeological information by KRD which further elucidate the character of fifth- to sixth-century activity in the north of Roman Britain and on the Wall.

THE ARCHAEOLOGICAL EVIDENCE (FIG. 1)

As already pointed out, KRD and Casey (hereafter PJC) agree about which sites on Hadrian's Wall show sub-Roman continuity. These consist of a linear group on the Wall, and a few sites to the south. But since the publication of both of these papers, and of *Civitas to Kingdom*, new evidence has been forthcoming which strengthens the case that several sites along the line of the Wall and in the north of Roman Britain were used for domestic settlements in the fifth and sixth centuries, and clarifies the character of this (re-)occupation. There are four new categories of evidence to which special attention may be directed here.

1. *Long-cist burials.* There is now strong evidence, especially following Philpott's useful survey of Romano-British (and possibly Romano-British) burials, that "long-cists" were not found inside the forts of Hadrian's Wall—or in the other sites discussed by KRD in 1992—but occur close to some of these settlements and forts (Philpott 1991). As long-cists seem, in general, to be a Late Roman and, especially, post-Roman burial type in north Britain (ibid. 61–6, 226; Alcock 1992), this pattern is arguably very significant in two respects. First, all known sub-Roman religious sites in north Britain and Wales have burials, and mostly these include at least some long-cists (Dark 1994b, 41–50, 139–40; Edwards and Lane 1992). Unlike many types of sub-Roman structures, features and finds, long-cists are easily recognizable, and have been since the nineteenth century at latest (for long-cists and the long history of their antiquarian and archaeological recognition, see Thomas 1971; Edwards and Lane 1992). So, if long-cists had been present within the sites with which we are concerned here—and they might be expected if these sites were religious in character—they would almost certainly feature among our records. Their absence, then, may be more significant than that doubtful relevance usually accorded to the term "negative evidence": it may represent a genuine and probably significant absence at extensively (if sometimes poorly) excavated sites.

Burial evidence has also contributed more positive data than was known to KRD in 1992. At Vindolanda there are long-cist extramural burials to add to the burials known from South Shields (Philpott 1991, 298, 434–5 fig. 20). These burials are likely to belong to the period from the fourth to the seventh centuries, with the clear possibility that they are sub-Roman rather than Late Roman in date.

Two further sites with long-cist burials lie adjacent to the Wall, on the southern side, and consist of no more than individual long-cists noted in passing in minor work (Crow 1995, 96). These suggest an interest in burial close to the Wall, an unlikely setting perhaps for burials simply placed to assert the *romanitas* of the communities with which they were associated. Their placement close to the Wall may recall the post-Roman Welsh literary topos of the burial of leaders close to frontiers or in the extremities of the kingdom to ensure its future safety, a theme recently discussed in a paper by Koch (1987). In historical and anthropological terms there is a strong argument that the sub-Roman Britons also saw peripheral burial near boundaries as politically symbolic and desirable (Dark 1994a, 116–17). Thus, one may interpret these burials in this context as evidence that Hadrian's Wall was still a boundary line when they were put in place.

Finally, on the subject of long-cists, there are other burials of this type from the Wall and the fourth-century forts to its south, which may or may not be sub-Roman, rather than Late Roman, in date. Before leaving the subject of burial in general, one must note the undated, but probably Late, or post-, Roman evidence of thirty-three human skeletons

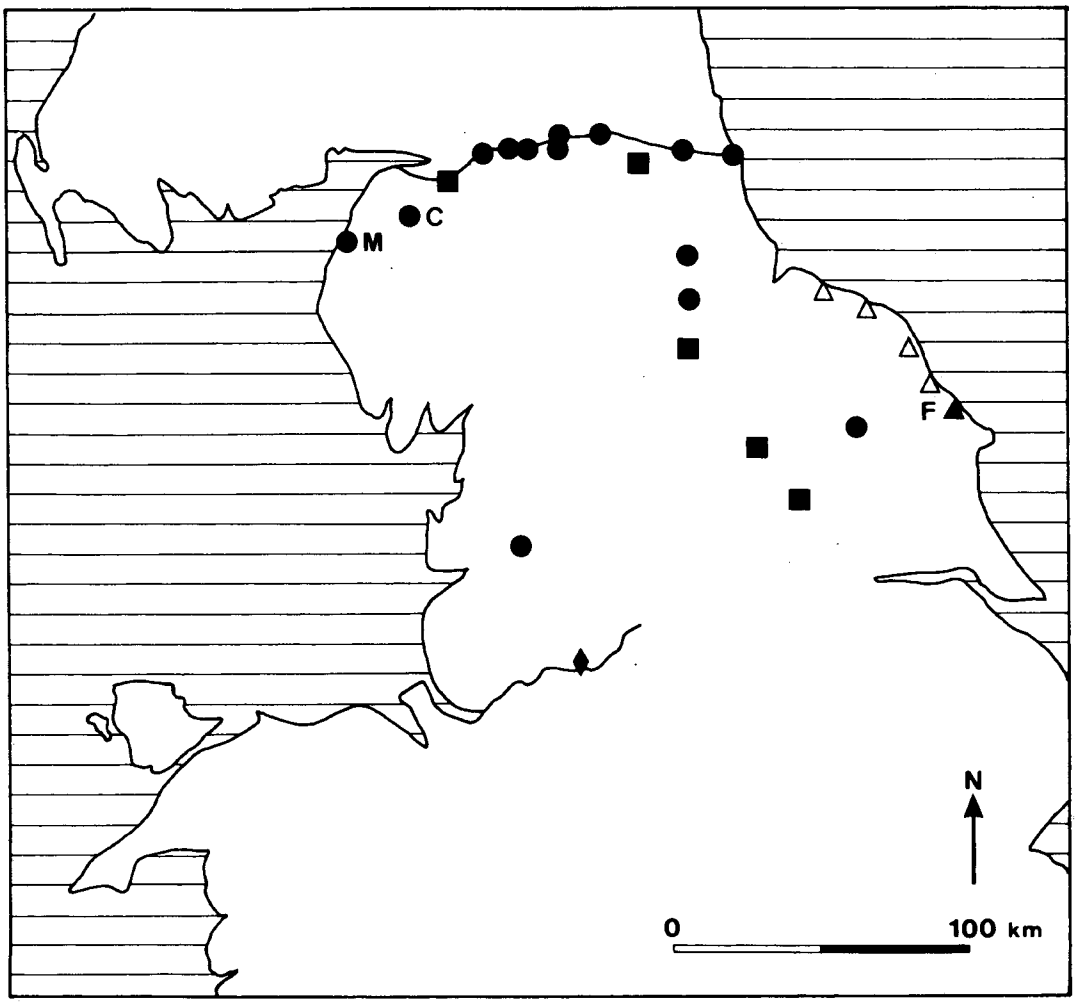

Fig. 1 Roman fort and town sites north of the Mersey and Humber with evidence of sub-Roman activity indicating high-status secular use.
Circles = Forts with possible/probable sub-Roman activity known to have been part of the Command of the Dux Britanniarum in the fourth century
Squares = Fourth-century towns with probable sub-Roman activity
Open triangles = Fourth-century signal stations
Filled triangle = Fourth-century signal station with possible fifth-sixth century evidence
Diamond = Fourth-century fort with possible/probable fifth-sixth century evidence but not known to have been in the Command of the Dux Britanniarum
C = Old Carlisle, M = Maryport, F = Filey

found within the bath house close to Chesters fort (Birley 1960, 30). These might well represent sub-Roman inhumations within a disused structure, as occasionally found at Romano-British villa sites further south (Dark 1993, 22–3). These potential cases of sub-Roman burial can, however, only be adduced in support of other, more convincingly dated, evidence of fifth-sixth century use.

Consequently, burial evidence adds several

new aspects to our evidence for this phase of activity on the Wall. It suggests that the secular interpretation of the sub-Roman evidence so far collected is correct. If it is not, then long-cists at least, if not other less easily recognizable features, would be expected. Second, it suggests that communities were living at, or close to, at least three of the sites proposed as having sub-Roman activity, at a period in which long-cists were in use for burial. This could be the fourth century, but might more plausibly be seen as the fifth, sixth or seventh centuries (see the analogous arguments regarding the dating of long-cists and distribution-maps of reported long-cist burials: Dark 1994b; James 1987, 1992; Preston-Jones 1984, 1992). Finally, it suggests that the Wall was still a boundary line at the same period, if the two long-cists along its line are correctly interpreted as asserting ownership and possibly as symbols of royal protection.

Before leaving the question of long-cists, however, one alleged long-cist must be discussed. This is the empty slab rectangle in a Roman-period water cistern at Housesteads, which Crow has suggested was a sub-Roman burial (Crow 1995, 96). This seems only one of several possible interpretations, and not the most likely. The structure might indeed be a burial cist, but long-cists were also constructed in the fourth century, as already noted, so it could be Late Roman in date. Alternatively it might be a smaller version of the slab-built tank in which it was situated, the paving around it being to consolidate the surrounding working surface. Or, it might be a storage container, like the storage cists found on "Highland Zone" sites elsewhere in Britain. Interpreted as a tank or container the feature might be of almost any post- (or even Late-) Roman date. Consequently, it is very much a matter of personal opinion to regard it as a sub-Roman burial. Superficially, the most compelling aspect of its context which might support an interpretation as a sub-Roman mortuary structure is the apsidal mortared stone building adjacent to it (Crow 1995, 96). This could be a church, but if so it is highly unlikely to be a sub-Roman one because it was made of mortared stone rather than timber or drystone (Thomas 1986) and, at 10 metres or more long, the Housesteads structure would be rather large for a sub-Roman church. Alternatively, it could be a Roman-period domestic structure, or part of a Roman-period building. These were, of course, sometimes made of mortared stone and apsidal (see for example, Johnson 1989, 93 fig. 66 "H", 95 fig. 69). So, again, if it is a pre-medieval feature it is far more likely to be Late, rather than sub-, Roman in date. On these grounds one must dismiss this interesting suggestion; another possibility, that the apsed feature represents a Late Roman church (as suggested alternatively, and more plausibly, by Crow), accompanied by a (late?) fourth-century burial, would be far more credible and renders these structures especially worthy of further investigation. The importance of Crow's reinterpretation of this data must, therefore, not be underestimated but it is not likely to represent a fifth- or sixth-century church and burial.

2. *Inscriptions.* Another aspect of burial evidence may also add to our picture (fig. 2). This is provided by the reinterpretation of what have usually been seen as "Late Roman" inscriptions found in north-west England. These are the stones from Brougham (RIB 786) and Old Carlisle (RIB 908) and those from Maryport (RIB 862 and 863) (Collingwood and Wright 1965). These inscriptions are unusual—even in the context of local Roman-period tombstones—but resemble the Class 1 inscriptions of Wales, and the cognate series in Cornwall and north Britain which are of sub-Roman and later origin (Nash-Williams 1950; Okasha 1993; Thomas 1993). This raises the question of whether these north-western stones, too, could be fifth or sixth century in date (and analogous to Nash-Williams' Class 1) rather than fourth century, as often claimed. The extreme rarity of other third- and fourth-century tombstones in Britain has often been noted—these would be our only non-urban examples—and the well-known Continental types are absent from the Diocese (Knight 1981, 1992). There is nothing internally to date

Fig. 2 Possible sub-Roman inscriptions discussed in the text. RIB numbers shown next to stones. Based on Collingwood and Wright (1965).

these inscriptions, and their proximity to Roman fort sites is paralleled in the Wall area by the "Brigomaglos" stone (RIB 1722), adjacent to Vindolanda (Okasha 1985 and Jackson 1982 are still the most useful discussions of this and its context). The lettering of all of these stones might as easily be sub-, as Late, Roman as it is comprised of crudely carved capitals.

In support of a sub-Roman date, all the characteristic aspects of the Class 1 stones, albeit mainly relating to their simplicity and "informality", are present: the unshaped or roughly-shaped stone used for inscription, irregular layout of a brief Latin text giving the names of those commemorated with scant additional information, the use of poorly-executed lettering straggling from the horizontal, and the absence of pagan or Roman military formulae (see Nash-Williams 1950; Dark 1987, 1992b, 1994a, 267–9). Interestingly, two of these inscriptions include names ending in the element *-rix*, which is otherwise absent from Roman-period tombstones in Britain (to judge from Birley 1979, 164–212, 217–24, Goodburn and Waugh 1983, and Bowman 1994), although the form *-rigis* is reported in the antiquarian record of a single stone, now lost, also found at Maryport (RIB 861). The element *-rix* and the form *-rigis* are, however, often found among the nomenclature of Class 1 inscriptions (Nash-Williams 1950, 256–8), thus strengthening the case that the Class 1 series is related to these inscriptions. Unlike all the other known complete, and near-complete, tombstones from Maryport they lack the pagan formula "DM" (found on RIB 857, 858, 859, 860, 861, 865, 866 and 867) and the lengthy epitaph of RIB 864 stands out from the curt inscription of the two, possibly sub-Roman, stones. At Old Carlisle "DM" also occurs where the start of the text is preserved on all complete, and near-complete, epitaphs except for that reinterpreted here (RIB 906, 907, 910, 911) and all of the remaining tombstones of probable Roman date from the site are much more orderly in the disposition of the script and accomplished in the carving of the inscription than RIB 908. In the case of Brougham, the lettering of RIB 786 is strikingly dissimilar to the other tombstones from the site, not least because it uses an unusually small "o", placed above the line, a feature also found in sub-Roman epigraphy (Dark 1992b, 58 fig. 7.2. In addition, the Roman-period tombstones from the site either include sculpture (RIB 784) or start with "DM" (RIB 785 and probably the enigmatic 787).

From Maryport there is also a chi-rho symbol carved in stone (RIB 856), for which the closest parallels are two carved chi-rhos from Cornwall, conventionally dated to the sub-Roman period (Okasha 1993, 12, 16–17, 56). Perhaps a later date for this carving, too, might seem more credible, given the complete lack of other Romano-British examples, although alternatively all could be Late Roman. Class 1 stones are known from nearby sites, most famously at Whithorn and the Brigomaglos stone itself. These have been discussed recently by Thomas, but it seems somewhat unlikely that, as he claims, the latter inscription represents no more than the "burial of an isolated Christian, not some contemporary, though isolated, Christian community" (Thomas 1993, 8). Did such people usually have elaborate tombstones erected for them by the, presumably, pagan "locals"?

So, it seems possible to suggest that we ought to take this small group of inscriptions not as anomalous Romano-British civilian tombstones of the fourth century, but as typical Class 1 inscriptions of the fifth or sixth centuries. Such a view undoubtedly has much more to commend it than the conventional interpretation.

If one works on the basis that these are sub-Roman inscribed stones, then their distribution conveniently "fills in" the otherwise puzzling geographical gap between the "Whithorn group" of such inscriptions in the west and Vindolanda in the east. At present only the problematical Castlesteads stone (which is uncertain, but not nearly so certainly discredited as Thomas (1993) suggests) might be adduced to fill this geographical gap. This stone may, or may not, be a Class 1 inscription (for a recent, but suitably non-committal, statement of the *possibility* that this could

belong to the Class 1 series: Dark 1992a, 112) and it is, perhaps, unwise too hastily to dismiss it as such an inscription on the unevidenced and unreferenced grounds that a seemingly distinctive letter form is "probably a much older aberration" (Thomas 1993, 10). The letter-form in question (a distinctive form of the letter B) is well-evidenced on Class 1 stones, but not extensively—if at all—evidenced in Britain prior to the fifth century (for instance, compare the forms of "B" in Collingwood and Wright (1965) with Nash-Williams (1950), also note Dark (1992b, 58 fig. 7.2)).

However, by including this new group of four (possibly five) monuments as Class 1 inscriptions it is possible to observe a north-west British regional group analogous to those regional groups found in Wales and the south-west, whether one chooses to include the Castlesteads stone or not. This group would include the stones already mentioned to the south of the Wall, the Whithorn group to its north-west, and the linear group of stones running north-south from the Wall into southern Scotland.

Here, however, their importance in relation to Hadrian's Wall is of special interest. If the inscribed stones at Brougham, Old Carlisle and Maryport belong to the sub-Roman phase of stone-carving in northern Britain, then they bear a direct relevance to the issue of sub-Roman activity on the Wall. Of the three sites, Maryport and Old Carlisle were in the Command of the *Dux Britanniarum* (Frere 1987, 220–1), whilst the stone from Brougham was not found adjacent to the fort, but alongside the Roman road close to it—a type of location often used for Welsh Class 1 stones.

3. *Signal Stations.* To the south of the Wall an important discovery has been made regarding one, perhaps all, of the Yorkshire signal stations. Recent excavations at Filey (Ottaway 1995) have revealed what the excavator calls a "sub-Roman ditch" defending the "signal station", which argues against suggestions that all of the Yorkshire signal stations were burnt down by raiders in the early fifth century, as often supposed. Plainly, such a discovery may suggest that the sub-Roman occupation of Malton was connected with the maintenance of the signal systems into the sub-Roman period, although it does not necessitate this view.

4. *New evidence.* This comprises discoveries made after 1992 together with the recognition of previously undiscussed earlier finds—of possible importance to the question of fifth- and sixth-century occupation—at fourth-century fort sites already brought into the discussion in KRD's earlier works. These include a *francisca* from Binchester (Fasham 1988, 20), and more excavated stratigraphical data from both Birdoswald and Piercebridge (Casey 1993, 70–2). The relevance of the three unstratified "Irish" pins published by Kilbride-Jones (1980, 7–11) from Chesters is far more difficult to assess. These were not included in earlier discussions of the end of Roman Chesters, but might belong to the fifth-sixth centuries rather than the fourth, and are not a type of artefact found in Anglo-Saxon graves (White 1988). Finally, an important development has been Margaret Snape's (1992) recognition of a category (D7) of sub-Roman brooches from sites on the Wall. This is especially valuable here as it includes new sub-Roman metalwork from Birdoswald and South Shields.

Not only does this data enhance the patterns presented in 1992 but it underlines the similarity of evidence from different sites. To the eight probable or potential examples listed earlier (Dark 1992a) it is possible to add two probable sites—Maryport and Old Carlisle—and, perhaps, also Chesters. This supports the pattern suggested in 1992, as these sites were attributed to the *Dux* in the *Notitia Dignitatum.*

The Reoccupation view is also corroborated by another aspect of the new material. It is now clear that the activity at several sites was very similar—a point hinted at by Casey (1993, 70–2). At many sites there were both British objects (e.g. penannular brooches, inscribed

stones) and Anglo-Saxon artefacts, for example weapons and brooches (Dark 1992a). The Anglo-Saxon material seems to indicate cemeteries outside the forts contemporary with the British finds from within them, but the division is not absolute—British cemeteries are evidenced, as at Vindolanda, and Anglo-Saxon finds occur within some forts, not necessarily from burials, as at Corbridge (Dark 1992a). The British aspects of these sites also have a characteristic set of attributes, not attributable to cultural norms found elsewhere in the west or north of Britain alone (Dark 1994a, 178–81, 191–200). At Birdoswald, Vindolanda, and Housesteads the Roman-period fortifications were refurbished by the addition of earthen banks piled against the rear of the fort walls. At both South Shields and Malton ditches cut the main entrance roads, and cemeteries were probably established outside forts at Vindolanda, Birdoswald and South Shields. At York sub-Roman occupation reused Roman-period buildings (James 1995, 9–10; Carver 1995, 187–91 and 195) as it did in Birdoswald and possibly Binchester; and in both York and Catterick there were timber-framed structures.

These new categories of evidence strengthen the view that communities were resident in the forts of Hadrian's Wall in the fifth and sixth centuries. They also strengthen the view that these communities were secular, included both men and women, and that they shared aspects of their material culture and settlement forms. Those aspects which they had in common include some that are usually claimed to indicate "high-status" occupation in areas further south, including Wales, where recent studies have tended to bear out this interpretation (Edwards and Lane 1988; Dark 1994b).

So, archaeology seems able to tell us that the forts on Hadrian's Wall were used in the fifth and sixth centuries for a string of high-status secular sites, some (perhaps all) of which were defended in a way reminiscent of western British hill-forts of the same date. To the south of this line a series of similar communities existed at other northern British fort sites, and probably at what had been "strategic towns"—York, Malton, Corbridge and Catterick. The pattern of these (re-)occupations is that of a line along the road from York to Corbridge, and a group of sites in the area which is now Cumbria. Unsurprisingly, perhaps, Anglo-Saxon material is absent from this westerly group of sites, but its occurrence at the other forts suggests mixed communities or British communities with Anglo-Saxon mercenaries. The latter may be suggested by the elite character of the British artefacts compared to the relatively low-status character of the majority of the Anglo-Saxon finds. This coincides with the general interpretation placed on such sites elsewhere in Britain: that of Anglo-Saxon mercenaries attached to British centres in the fifth century. The military function of these sites, which this interpretation implies, is perhaps also evidenced by the known character of British secular elites during this period (Dark 1994b; Alcock 1988) and by the defences afforded to at least some of these sites.

Thus, we seem to have evidence of communities which are not merely secular, not merely mixed, but can be argued to consist of British warrior aristocrats and Anglo-Saxon mercenaries. Such a view would explain the linear distribution of sites between York and Corbridge as a line of hill-fort-like elite settlements securing communications along a still-used Roman road between York and the Wall. This interpretation fits very well with the suggestion that this is a sub-Roman version of the command of the *Dux*. The lack of similar evidence from fourth-century sites not in the *Dux*'s Command and the "high-status" character of these communities (evidenced by inscribed stones and "hill-forts", for instance), when seen in the context of the archaeology of the British further south, or of the peoples to the north of the Wall, makes it highly unlikely that this evidence is the residue of continued occupation by local peasants or the farming descendents of local soldiery (for lower status sub-Roman sites see Dark 1994b chapter 3; K. R. Dark in press). If that were so, the presence of fifth-to-sixth-century Anglo-Saxon

objects, rare in the north, would be hard to explain.

This new data, therefore, not only increases the case for rejecting the conventional hypothesis, but also undermines that suggested by PJC on archaeological grounds. Both the conventional view and PJC's rest upon a continuity hypothesis concerning the latest Roman population on the Wall. In order for the continuity hypothesis to work there must be evidence of landscape continuity, and especially of the continued production of agricultural surplus sufficient to support a society with so many "chiefs" and so few other Britons. These views also do not explain why forts of the *Dux* were occupied in the sub-Roman period, but other fourth-century forts were not. If PJC is correct, however, the pollen evidence should show continuity of landscape use from the Roman period into the fifth and sixth centuries. It should demonstrate that farming persisted after the withdrawal of Roman rule, and possibly may have intensified as communities found their own food.

If, however, one assumes that the sites were reoccupied by only a few warrior aristocrats and Anglo-Saxon mercenaries, led by their own warleader (so comprising a British warband) then one need not assume landscape continuity. Plainly the food-needs of such groups would be much less than those of formal garrisons or large village-communities. They might be very small—in early Christian Ireland the king was attended by a mere handful of warriors, and the thirteenth-century Welsh laws give extremely low figures for the warbands of its own time (Dark 1994a, 180–1, 197; Sawyer 1978, 72). On "active service" these might not live close to dependents and clients, nor need they have had large numbers of servants accompanying them and their immediate families: each site could have contained—at most—scores, rather than hundreds, of people. The known or potential sub-Roman cemeteries from these sites would not contradict such an interpretation.

These differences in the need for agricultural surplus to be produced in the immediate area involved in the "Continuity" view and the "Reoccupation" hypothesis have important implications for the nature of the landscapes which they would require to sustain them. Whereas in the conventional, or PJC's, "continuity"-based interpretation, the area must remain agriculturally productive and landscape continuity must be demonstrated, in the type of discontinuity suggested by KRD a potential decline in productivity may be supposed. If local production was geared to the needs of the Roman forces during the centuries of Imperial control, the retreat from Britain would possibly cause large-scale agricultural collapse as markets were removed. The environmental record can, therefore, test these views. It can tell us whether a hypothesis based on continuity is correct or whether one based on reoccupation can best explain the archaeological pattern of sub-Roman settlement.

THE ENVIRONMENTAL RECORD

It is fortunate that the Hadrian's Wall area has the densest concentration of pollen sequences covering the Roman/post-Roman period from any part of the British Isles, providing ample scope for reconstructing vegetation changes associated with both the Roman occupation of, and withdrawal from, the area (fig. 3). The first synthesis of the pollen evidence from north-east England was provided by Turner (1979), who interpreted the data from the nine radiocarbon-dated pollen diagrams then available to suggest that much of the area was substantially cleared of woodland in the Late Iron Age and Roman periods. Furthermore, she argued that at four of the sites (Stewart Shield Meadow, Fellend Moss, Steng Moss and Hallowell Moss) this open landscape persisted well into the sub-Roman period, before woodland regeneration began towards the end of the sixth century.

Turner's suggestion of an initial continuity phase has been taken up by several scholars, notably Casey (1993) and Higham (1986), in support of their own hypotheses about the end of Roman military occupation in northern

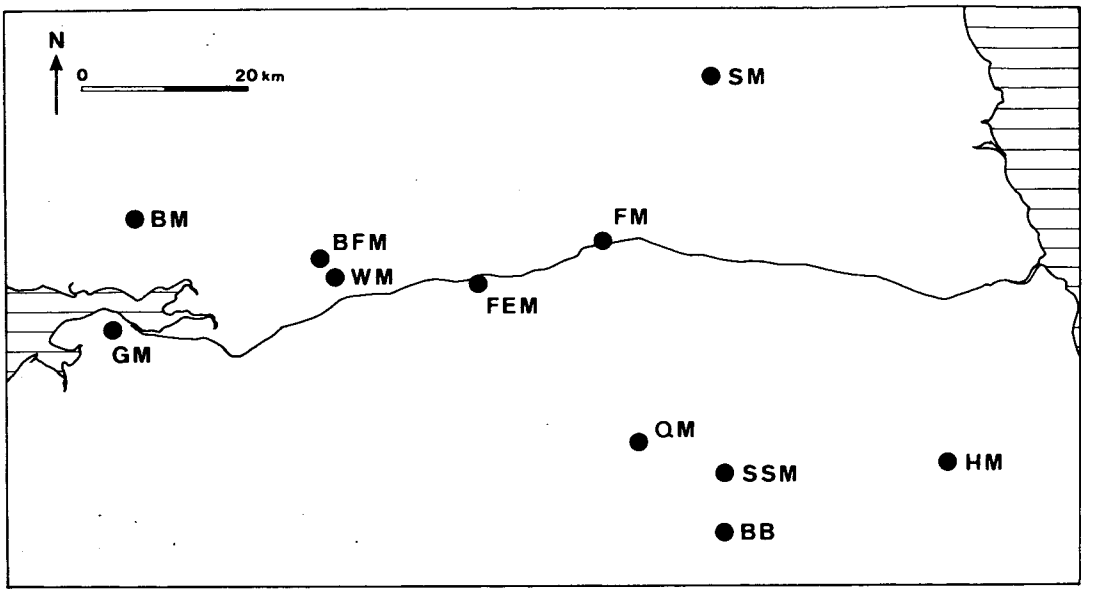

Fig. 3 Location of pollen sequences providing evidence for the sub-Roman environment.
BB = Bollihope Bog, BFM = Bolton Fell Moss, BM = Burnfoothill Moss, FEM = Fellend Moss, FM = Fozy Moss, GM = Glasson Moss, HW = Hallowell Moss, QM = Quick Moss, SM = Steng Moss, SSM = Stewart Shield Meadow, WM = Walton Moss.

England. Casey is somewhat over-optimistic in his use of Turner's evidence, stating, for example, that at Fellend Moss "re-afforestation took place during the 520s" (Casey 1993, 72). It is simply not possible to place such a close date on this sequence, particularly given the existence of a radiocarbon plateau from cal. A.D. 450 to 530, equivalent to a radiocarbon date centred on 1580 B.P. (Stuiver and Pearson 1993). In any comparison of radiocarbon-dated pollen sequences with historically dated events it is critical to remember that radiocarbon dating provides an age range for a sample rather than a single date, and calibration may further increase the spread of a radiocarbon "date" (Dumayne et al. 1995). In consideration of Turner's sequences it must also be remembered that the calibration data available to her (McKerrell 1975) would have produced somewhat different results from the latest calibration curve of Stuiver and Pearson (1993) which is used here.

Returning to the Fellend Moss pollen sequence, the authors originally suggested continuity until the level radiocarbon dated to 1330 ±40 B.P. (SRR-875), which was then calibrated to A.D. 635 (Davies and Turner 1979), but there is some woodland regeneration before this. This earlier regeneration phase is not itself dated, but interpolation between the dates of 1330±40 B.P. and 1948 ± 45 B.P. (SRR-876) suggests that it occurred close to A.D. 400. This was followed by a possible increase in the extent of open land before the regeneration phase discussed by Turner, the date for which, by modern calibration, can be seen to centre on *c.* A.D. 675.

Examination of the other pollen sequences argued by Turner (1979) to show continuity reveals further problems. Turner (ibid, 289) stated that "at Stewart Shield Meadow the

rise in tree pollen has been dated to a.d. 1110 ± 100 (A.D. 1110–1200)". In fact, woodland regeneration began well before this, at some time in the sub-Roman period, although it is impossible to be certain about a precise date due to the large errors attached to the radiocarbon dates for this sequence (840 ± 100 B.P. and 2060 ± 120 B.P.) and the wide interval (approximately 300 years) between the pollen samples (Roberts, Turner and Ward 1973).

Similarly, at Steng Moss Turner argued for woodland regeneration at a level dated to 1490 ± 60 B.P. (Q-1519), then calibrated to A.D. 480–520, but now known to centre on cal. A.D. 600. Again, however, the regeneration clearly began substantially before this, interpolation between the above date and a lower date of 1970 ± 60 B.P. (Q-1520) suggesting that it occurred shortly after A.D. 400.

At Hallowell Moss the first post-Roman woodland regeneration phase occurs immediately above a level dated 1355 ± 50 B.P. (SRR-413), centred on cal. A.D. 670 (Donaldson and Turner 1977). Unfortunately, however, a date from just 2 cm higher up the profile produced an older date of 1522 ± 65 B.P. (SRR-412), centred on cal. A.D. 550. The precise chronology of regeneration at this site is thus uncertain, although it is probably safe to say that the regeneration did occur in the sub-Roman period.

The re-examination of these sites, therefore, makes it clear that arguments for post-Roman landscape continuity in this area have been based on an insufficiently close analysis of the evidence. Several of the sites discussed by Turner (1979) do seem to indicate woodland regeneration directly connected with Roman military withdrawal from the north.

During the 1980s and '90s further pollen sequences have been produced from the vicinity of Hadrian's Wall, providing the opportunity to examine the continuity issue with the benefit of a greater coverage of sites. Particularly notable is the recent research into the effects of Roman occupation in the vicinity of both Hadrian's Wall and the Antonine Wall by Dumayne (1993). On the basis of three radiocarbon-dated sites close to Hadrian's Wall (Fozy Moss, Walton Moss and Glasson Moss), Dumayne and Barber (1994) argued that the Roman occupation resulted in a massive increase of clearance, followed by regeneration at two of the sites (Fozy Moss and Glasson Moss) in the fourth century, and a slowing of clearance at Walton Moss. Dumayne and Barber follow Turner (1979), however, in arguing that such regeneration does not occur in other diagrams from the region.

In view of the considerable interest attached to pollen sequences from the Hadrian's Wall area, and perpetuation in contemporary scholarly literature of the local continuity argument, it seems appropriate to re-examine the complete set of radiocarbon-dated pollen sequences available. As mentioned earlier, this work has stemmed from a recent review of the question of post-Roman landscape continuity in Britain as a whole which presented the evidence from all well-dated pollen sequences covering the period A.D. 400–800 (S. P. Dark in press). In the original study particular care was taken to include only those sites with both an adequate sampling resolution and chronological control to illustrate whether or not any changes in the extent of open land and woodland occurred in this period. Not all of the sites employed have radiocarbon dates falling within this period, in which case the relevant part of the sequence has been identified by interpolation between earlier and later radiocarbon dates, assuming a constant rate of sediment accumulation between the dated levels. The dating of the sequences is thus far from precise, and the overall picture shown by clusters of sites is obviously more reliable than that from individual localities.

The original study identified 51 sites with pollen sequences covering the sub-Roman period, of which 14 showed continuity, 13 showed increased activity, and 23 showed reduced activity; at one site peat began to form in this period, so no comparison could be made with Roman-period vegetation. Eleven of the sites were in the vicinity of Hadrian's Wall, and the details of the vegetational

changes shown by these pollen sequences are described here in the appendix. The selection criteria adopted meant excluding some sequences in the Wall area which have previously been used in discussions of the Roman and sub-Roman periods, such as Thorpe Bulmer and Neasham Fen (Bartley, Chambers and Hart-Jones 1976), due to particularly poor temporal resolution and problems with the radiocarbon dates.

Strikingly, all eleven of the sites in the database show evidence for reduced land-use, of which one, Fozy Moss, provides indications of an increase in activity following an initial decline. The chronological control for most of the sequences is insufficient to identify any short initial period of continuity, but it is notable that the most detailed site, Fozy Moss, clearly does not provide evidence for such continuity. Current analyses of the sediments from two lakes adjacent to Hadrian's Wall by SPD seem, provisionally, to provide similar indications of post-Roman land abandonment.

The pollen evidence, therefore, provides strong evidence for general abandonment of land in the vicinity of Hadrian's Wall in the sub-Roman period. That this pattern is not reflected at the majority of contemporary sites in Britain indicates that it specifically reflects events associated with the Wall area. Higham's statement (1986, 243) that the "political upheavals of the late Roman and sub-Roman periods were insufficient to leave traces in the palaeobotanical record" can be seen to be a complete inversion of the real situation on Hadrian's Wall and in its hinterland. Here, the end of Roman Britain was marked by massive ecological transformation resulting from a reduction in agricultural land-use throughout the region, and consequent widespread reversion to woodland.

CONCLUSION

The results of this palynological study contradict both the conventional interpretation of the end of the Roman period in the Wall zone and the "Continuity" hypothesis of the fate of the Wall communities of the later fourth century. It is extremely unlikely that the maintenance of local farming regimes could account for this pattern. It is probable that it indicates an abrupt and distinct "end" to the Roman landscape in this area in the fifth, probably even the early fifth, century. The most plausible mechanism for this would be the withdrawal of the Roman army and consequent alterations in the relationship between production and consumption in the agricultural economy of north Britain. As Casey (1993) has shown, coin-evidence suggests that this withdrawal did not occur until the very end of the Roman occupation of Britain, probably in the very early fifth century.

If one adopts the interpretation that the Wall forts were reused in the later fifth–early sixth century for a series of sub-Roman secular elite settlements, then the associated problems involved in explaining this new evidence of occupation at that time disappear. The scale of activity and the character of the settlements involved could require no maintenance of the Roman-period agricultural system. Their food requirements might well have been slight compared to Late Roman garrisons and their attendant populations, and the numbers of people involved could be fewer than a hundred at each site. These communities may also have been far more dependent on pastoral and woodland resources than on arable for food and other needs than was the Late Roman army. Consequently, the regeneration of woodland and reduction in extent of arable land and pasture would not necessarily have presented problems for their existence.

So, the interpretation that the Wall became a series of secular elite settlements, discontinuous from the Late Roman activity at the forts within which they were sited, is compatible with the evidence of pollen analysis, while the alternative interpretations are both rendered highly unlikely by it. This does not, of course, make the suggestion that this reoccupation represents the sub-Roman reconstruction of the Command of the *Dux Britanniarum* any more likely, but the pattern on which that

interpretation is based has been strengthened, rather than weakened, by the new archaeological data, whilst the evidence also hints at a similar reoccupation with regard to the signal stations of the Yorkshire coast and their headquarters at Malton.

Perhaps, then, at last one is able to see answers to many of the most pressing questions regarding what happened in north Britain, and more specifically on Hadrian's wall, in the fifth and sixth centuries. These questions include why this area saw so little Anglo-Saxon settlement (outside these British contexts), why hill-forts analogous to those of western Britain and southern Scotland have not been found in the north-west of what is now England, why the British North fell so rapidly to the Northumbrians in the later sixth and seventh century, and why later British poetry recalled the "men of the North" as offering such fierce resistance to their barbarian foes to the north and the east (Dark 1994a, 71–4, 104, 128–9 and 218; L. Alcock 1987, 234–54).

The answer to all of these questions may lie in the rise and fall of a reconstructed Late Roman military command, unique in Britain, which was organized in a sub-Roman fashion reliant upon the loyal warbands of warrior aristocrats (and Anglo-Saxon mercenaries) rather than paid regular soldiers. The organizing authority of this system, probably the king of the sub-Roman Brigantes, assigned a politico-military role to the defended homesteads of these elites, and (as in the location of churches at disused forts, through land-grants?) positioned these at what had been Roman fort sites, but which were (at least substantially) deserted by the time when they were reused in this way. Thus, the "Late Roman" Wall communities dispersed during the first half of the fifth century, but the Wall—and perhaps the north generally—was redefended in the later fifth and early-mid sixth century on very different lines, yet not completely without regard for the Late Roman past.

APPENDIX

Vegetational changes at around A.D. 400 shown in pollen sequences from sites close to Hadrian's Wall

Bollihope Bog (NY 980358)

Roberts, Turner and Ward 1973

Late Roman or early post-Roman expansion of open land indicated by an increase of heather (*Calluna vulgaris*), grasses and plantain (*Plantago*), followed by woodland regeneration, predominantly of hazel (*Corylus avellana*).

Bolton Fell Moss (NY 488692)

Barber 1981

Woodland regeneration indicated by an increase of birch (*Betula*) and ash (*Fraxinus excelsior*) and a decline of ribwort plantain (*Plantago lanceolata*), sorrel (*Rumex*) and bracken (*Pteridium aquilinum*).

Burnfoothill Moss (NY 263737)

Tipping 1995 a and b

Woodland regeneration indicated by an increase of birch, followed by alder (*Alnus*) and oak (*Quercus*), and a decline of grasses and ribwort plantain.

Fellend Moss (NY 679658) (100 m from vallum of Hadrian's Wall)

Davies and Turner 1979

Woodland regeneration indicated by a decline of grasses, ribwort plantain, and bracken. A possible later increase of open land, suggested by increasing grass frequencies, is followed by further regeneration at the level dated 1330 ± 40 B.P. (SRR-875) which centres on cal. A.D. 675.

Fozy Moss (NY 830714)

Dumayne and Barber 1994

Abandonment of land and woodland regeneration indicated by an increase of hazel, oak and heather, and a decline of grasses, at *c.* cal. A.D. 400 (interpolated), but at *c.* cal.

A.D. 600 the trend is reversed and arable agriculture seems to have increased, as pollen of rye (*Secale cereale*) and "*Avena-Triticum* type" (oat/wheat) appear.

Glasson Moss (NY 238603)

Dumayne and Barber 1994
Increases of hazel and heather and a decline of grasses suggest abandonment of agricultural land. "*Avena-Triticum* type" (oat/wheat) and "*Cannabis* type", probably hemp, pollen occur from *c.* cal. A.D. 600 (interpolated).

Hallowell Moss (NY 251439)

Donaldson and Turner 1977
Woodland regeneration indicated by an increase of trees and shrubs and a decline of grasses, ribwort plantain, and bracken. Cereal pollen ceases to occur. Precise chronology uncertain due to inversion of dates.

Quick Moss (NY 878467*)

Rowell and Turner 1985
Woodland regeneration indicated by an increase of hazel and decline of plantain, grasses, heather and bracken.
* This differs from the grid reference quoted by the authors, which can be seen to be incorrect by reference to their location map.

Steng Moss (NY 965913)

Davies and Turner 1979
Woodland regeneration indicated by an increase of trees and shrubs and decline of grasses, ribwort plantain, heather and bracken. Cereal pollen ceases to occur.

Stewart Shield Meadow (NY 980428)

Roberts, Turner and Ward 1973
Woodland regeneration indicated by an increase of hazel, willow (*Salix*) and oak, and decline of ribwort plantain and heather. There is some uncertainty over the chronology as the dates have large error terms and the pollen samples are widely spaced.

Walton Moss (NY 504667)

Dumayne and Barber 1994
Woodland regeneration indicated by an increase of alder and hazel, and decline of grasses. "*Cannabis* type" pollen, probably from hemp, occurs sporadically for the first time.

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