9. DISCUSSION

9.1 Iron Age Inveresk

9.1.1 Occupation

While the majority of the archaeological remains in Inveresk relate to the Antonine occupation of the fort, a number of Iron Age features have been identified. At Monktonhall (Hanson 2002: 59–60) three roundhouses of ring-groove construction were identified along with two ring ditches of probable Iron Age date. Attached to each of these ring ditches was a pit indicating possible burial evidence. At Inveresk, segments of two concentric ring-grooves were identified (Neighbour 2002: 45). These have been interpreted as either two phases of a ring-groove house, or a single complex ring-groove house. Evidence of possible Iron Age settlement was also identified at Howe Mire (Cook 2004), where the possible remains of a roundhouse were uncovered.

Aside from the burials, there was no definite evidence of native Iron Age occupation on the Primary Health Care Centre site, although a ring ditch enclosure was identified as pre-dating the Roman-period burials and may be an Iron Age ring-groove house (amongst other possibilities). The 7.5m diameter of this feature places it within the known size range of ring-groove houses, although others within the general area were rather larger. Those at Monktonhall (Hanson 2002) measured 11–13m diameter and the concentric ring-grooves at Inveresk (Neighbour 2002) measured 10m and 13m. Post holes identified at Howe Mire (Cook 2004) have been interpreted as the remains of a roundhouse with a diameter of 6–7m, but this feature is thought to date to the Late Bronze Age or Early Iron Age.

Coarse stone tools within midden-rich Context 003 are of possible Iron Age date (Clarke, Section 7.9), but three sherds of native pottery recovered from the midden (see Section 7.11) appear to have been Grooved Ware of probable Neolithic date.

9.1.2 Burials

The coursed drystone masonry construction technique of the cist at the Primary Health Care Centre site appears to be a reasonably well documented, but by no means common, burial practice in Scotland. Within East Lothian, Wallace's handlist of Iron Age burials in Scotland (Wallace 2011) records six sites with burial cists of this type. These were located at Dunbar Golf Course (Baker 2002), Gullane (Richardson 1902), Lochend, Dunbar (Longworth 1966), North Belton, Dunbar (Crone 1992), Seacliff House (Stuart 1867) and The Knowes, Whitekirk (Haselgrove 2009). The Group C burial excavated by Dalland (1991) at Winton House, Cockenzie and Port Seton, also appears to fall within this category, as does a burial uncovered at Law Road, North Berwick (Suddaby 2005).

A further ten examples are known to the north of Hadrian's Wall (Scotland and Northumberland), with the majority of these being located within the Scottish Borders (Wallace 2011). This burial practice is notably absent from west and south-west Scotland, where very few Iron Age burials have been identified, and within the north of Scotland there is only one recorded example, at Golspie (Woodham & Mackenzie 1957), which may be earlier or later in date (a comparable cist found nearby was covered with a slab bearing five incised Pictish symbols, but another burial from the same group produced a Late Bronze Age radiocarbon date). It is perhaps of note that this method of construction occurred almost exclusively within areas where direct contact with the Romans was at its greatest, and might reflect Roman influence on an earlier cist burial tradition.

In terms of construction, the Primary Health Care Centre cist was very similar to other examples in East Lothian, for example Dunbar Golf Course and Gullane, which both consisted of an oval stone-lined pit with stone capstones. With internal measurements of 0.8 by 0.5 by 0.4m deep, the Dunbar Golf Course cist was rather smaller in size than the 0.92 by 0.86 by 0.6m of the Primary Health Care Centre example, while the Gullane example was broadly of the same dimensions, with internal measurements of *c* 1.0 by 0.75 by 0.9m deep (size extrapolated from the scale plan provided by Richardson 1902). In both these cases the stone lining extended almost to the top of the pit and this may also have been the case with the Primary Health Care Centre example prior to the possible collapse of the upper courses. Other stone-lined cists, however, were rather different in nature, with the very large 'boat-shaped' cist at Lochend, Dunbar having an internal measurement of *c* 2m by 0.55–0.9m. The

Dunbar Golf Course cist contained a single child burial in flexed position while the Gullane example contained three individuals in a tightly crouched position similar to the Primary Health Care example, and the massive cist at Lochend contained at least 21 individuals which appear to have been interred in an advanced stage of decomposition. Radiocarbon dating of the skeletal remains indicates that the Primary Health Care Centre cist was slightly earlier than the Dunbar Golf Course example (50 cal BC–cal AD 90 as opposed to cal AD 70–250 at 95% probability; GU-9150).

A short cist is recorded from Kirk Park, Inveresk (A Sheridan pers comm: NMS ID no. X.ET 64), acquired by the NMS in 1888, and containing a skull from an adult female aged 35–45(?). Bone from the mandible was radiocarbon dated as part of the *Beaker People Project*, providing a date of 2038±32 BP (OxA-V-2167–45), calibrated to 100 BC–AD 10 at 95% probability. This places it within the same broad period as the cist burials from the Primary Health Care Centre. Another short cist at Kirk Park contained a skull and leg bones of a middle-aged adult male; these were presented to the Edinburgh University Anatomy Department in 1890 and are now in the NMS (A Sheridan pers comm; NMS ID no. EUAD IB 208). These latter remains have not been dated, so it is unclear whether they could also be Iron Age. However, the presence of the former cist suggests wider usage of the area for burials during this period.

Parallels for the pit graves are known from the Iron Age cemeteries at Dryburn Bridge (Dunwell 2007), Broxmouth (Hill 1982), Winton House (Dalland 1991), as well as a single example at Fishers Road East, Port Seton (Haselgrove & McCullagh 2000). At Dryburn Bridge (Dunwell 2007), the burial rite appears to have been fairly similar, with the body placed in a crouched position in the base of an unlined pit. Where it does differ, however, is that each of the ten graves at Dryburn Bridge only contained a single individual whereas two of those at the Primary Health Care Centre were double inhumations. It is also of note that the backfill at Dryburn Bridge appears to have been imported material whereas at the Primary Health Care Centre, the graves appear to have been backfilled using the excavated material. The Dryburn Bridge cemetery would also appear to have been considerably earlier, with dates of *c* 770–400 cal BC at 95% probability. Dunwell (2007: 106) has noted that single burials tend to occur in confirmed settlement contexts whereas multiple burials occur in apparently off-site contexts. The Primary Health Care Centre site is rather ambiguous in this respect as it had a combination of single and double burials, although the ring ditch that pre-dates the Roman-period burials might give a tenuous indication that there was earlier settlement on the site.

Iron Age cremation burials are known from a number of sites within East Lothian, including Eweford West, Pencraig Hill and Phantassie (Lelong & MacGregor 2007), and The Knowes, Whitekirk (Haselgrove 2009). However, the majority of these were associated with cists. At Phantassie, Lelong & McGregor (2007) suggested that the rite of cremation was tied in with the agricultural cycle, with cremated remains being dumped on the midden and subsequently spread on the fields. Discrete cremation burials from this period not associated with cists or cairns appear to be very rare in Scotland. A pit with cremation deposits at Hill of Tarvit, Fife (James & Duffy 2001) appears to have been a pyre site.

Cremations have been identified with Roman forts, but the majority of these are contained within Roman-period urns. The exception to this appears to have been Newstead, Scottish Borders, where there were several cremation deposits in shallow pits, one of which contained iron nails and quartz pebbles (Wallace 2011). The paucity of Iron Age cremations combined with the known Roman cremations associated with forts led to the original assumption that the Primary Health Care Centre cremations were Roman. However, the radiocarbon dates would suggest that they are more likely to be Iron Age and if this was also found to be the case with the examples from Newstead, it could provide some tentative evidence for a more widespread Iron Age tradition of un-urned cremation burials in shallow pits.

9.2 The Roman period

9.2.1 Burials

With Sue Anderson

All of the dates obtained for the Roman-period burials were compatible with the Antonine occupation of the Fort. Roman inhumations are

particularly uncommon in Scotland with the only previous known examples being the earlier finds from Inveresk (Gallagher & Clarke 1993) and those excavated at Camelon, Falkirk (Breeze et al 1976). The example from Camelon consisted of a double interment in a cist, which contained weapons along with the remains of the two individuals. Building work carried out at Inveresk to the north of the Primary Health Care Centre site identified five possible graves which were visible as U-shaped cuts within a machine-cut trench (Clarke & Kemp 1985). The remains of a single individual (young (?) adult male, A Sheridan pers comm) were recovered, but the skeletal material had been removed from its context prior to the archaeologists being on site and therefore the form of the burial was not noted. In common with the Primary Health Care Centre site, the previously discovered Roman graves appear to have been cut into the sandy subsoil and the remains of the individuals simply placed directly into the grave with no evidence of any kind of coffin.

As well as adding significantly to the known Roman inhumations within Scotland, the Primary Health Care Centre site is of particular significance as it is the first Scottish site providing evidence for decapitation. Post-mortem decapitation appears to have been a fairly common custom throughout the Roman provinces, with known examples from areas such as Belgium and Scandinavia (Philpott 1991). Of particular note is the large Roman cemetery at 1–3 and 6 Driffield Terrace, York (Mullen 2011). Here, 80 inhumations were discovered, of which 48 were identified as having been decapitated with the skull placed within a variety of locations, including between the knees or feet or beside the torso. With all of the remains apparently relating to males with ages ranging from 19 to 45, there have been a variety of explanations put forward relating to the decapitated individuals, including that they were gladiators, Roman soldiers, executed criminals, or those who had been ritually decapitated.

In common with the Driffield Terrace burials, all of the in situ Roman burials at the Primary Health Care Centre were male. However, one of the skulls recovered from the midden material, potentially from a disturbed grave, was possibly female, and four of the skeletons appear to have been older individuals over the age of 45. The bulk of burials from the Driffield Terrace site were also rather later, dating to the 3rd or 4th century AD, but there was some tentative evidence of decapitation from the earlier phases of the site, possibly pushing the earliest decapitations there back into the early to mid-2nd century.

As is the case for most decapitation burials, the evidence relating to the various theories behind this burial rite is rather ambiguous. With a possible amphitheatre identified at Inveresk (Neighbour 2002) it would be tempting to view the traumatic injuries identified on the skeletons (Section 4.6 above) as the result of gladiatorial combat, but in reality injuries of this nature were probably nothing out of the ordinary for individuals doing hard manual work in a harsh environment. The argument for them being soldiers is a reasonably strong one given the close proximity of the fort, and the injuries sustained may have been the result of battle or training accidents, but this appears coincidental to them being decapitated as it in no way indicates that post-mortem decapitation was reserved exclusively for soldiers.

At Driffield Terrace the suggestion that the individuals may have been executed relates to one of the skeletons having leg shackles, but there was no such evidence relating to the Primary Health Care Centre site. The only slight evidence supporting this theory is the failure of later development on the site to respect the location of some of the burials, with a number of the remains ending up amongst the midden material. It might be that those carrying out the later development had no knowledge of the burials being there, but this would seem surprising given the apparently short duration of the Antonine usage of the fort. A possible explanation would be a new garrison taking over, although it has to be questioned why they should simply dump the remains on the midden once they were uncovered. The final suggestion relating to ritual is perhaps the most plausible, but is a very general explanation and fails to explain whether the rite related to a specific group, or group of beliefs or if it was carried out generally within the wider community.

Evidence from the personal names inscribed on some of the broken dishes suggests that at least two of the individuals living in the fort may have originated in Dacia. This, together with the evidence from the isotopic analysis (Section 4.7 above), suggests that the 'Roman' individuals here

had diverse origins. Where exactly they came from cannot be pinpointed, although the evidence is largely in favour of a Mediterranean or Germanic source. It seems likely, given this diversity, that the practice of decapitation was not one which related to a single ethnic group of men within the fort, and is more likely to be a product of their beliefs than their geographic origins.

9.2.2 The horse burial

Jennifer Thoms

The apparently deliberate burial of an animal in antiquity is of interest, and is a phenomenon which occurs across Britain during all periods, though is especially prevalent in the Iron Age. When the burial is of a 'companion' animal – one of the species such as cats, dogs and horses which in many societies today are not generally eaten and have a different status to the other domesticates – eg being given names, being allowed to share human domestic space, being valued for characteristics beyond their calorific meat value – then the burial is of particular interest. Cross (2011) argues persuasively that a complete horse burial is almost certainly the result of a ritual, if not a sacrificial act. Due to the size of the animal it can safely be assumed that it died, or was killed, near the burial site. There is no evidence present on this horse skeleton of a violent death, or deliberate killing, which would imply a sacrificial burial. However, the highly fragmented state of the skull would have obscured such evidence.

It is possible that this horse's role as a companion animal led to its deliberate burial. The fact that it is close to human burials might imply that it was killed to accompany an elite burial. Cross (2011) summarises some examples of this practice in the archaeological record and the historical literature. The practice is often interpreted as reflecting an elite status of the horse, presumably transferred by the status of its owner. Could that be a reason why this horse was buried while so many others were dumped as (often disarticulated) waste? (See Section 8.)

While we are unlikely ever to uncover the reason why at least one horse at Inveresk was given a purposeful burial while others were not, we can speculate that it may have been because it was distinctive from the others. It was not of a notably different stature to the others (war horse as opposed to beast of burden); nor was it obviously suffering from chronic ill-health, such as arthritis, which would have rendered it economically useless. It might have been associated with a person of high status; or it may have achieved high status itself, through performance, or loyalty, and earned an honourable burial.

9.2.3 The rampart

The surviving archaeological evidence suggests that this structure was a boulder clay rampart set on a river cobble foundation. Clay appears to have been a material commonly used for Roman military rampart construction during the Antonine period. At Inveresk fort itself, the excavators (Leslie & Will 2005) describe the rampart construction as being entirely of clay, while other forts with clay ramparts within southern Scotland included Bothwellhaugh, Cappuck, Cramond and Newstead. The use of a cobbled foundation to the clay rampart appears to be less common, but is paralleled at Newstead, where there was a strip of cobbling beneath the clay.

While the information for the aforementioned sites refers to the main fort ramparts rather than any ancillary structures, a similar rampart base was identified at Newstead enclosing the baths associated with the fort. Curle (1911: 97) describes the rampart base as a foundation of river cobbles 12ft (3.66m) broad, enclosing an area 113ft (34.4m) by 78ft (23.77m). The cobbles had been embedded in clay and, at the eastern end, were covered in a layer of yellow puddled clay measuring 1.5 to 2ft (0.46–0.61m) in depth. Although the rampart at Inveresk was only partially uncovered, it would have enclosed an area of at least 32.3m by over 20m, meaning that it was potentially of very similar dimensions to that excavated at Newstead. Where it does appear to differ markedly from Newstead is at the corners, which at Inveresk appear to have been widened out and squared off, whereas those at Newstead were nicely rounded. This may indicate that there was some kind of additional fortification on the corners at Inveresk, but there was no surviving evidence of this.

This parallel with Newstead raises the question as to whether the rampart at Inveresk could have enclosed a bath house, as a Roman fort such as Inveresk would almost certainly have had this type

of amenity situated close by. There is a known bath house (NT37SW 13) situated fairly close by at Inveresk Gate and although Richmond (1980: 298) has suggested that it may have been an earlier structure associated with a possible Flavian fort (for which there is currently no evidence), its location would suggest that it is more likely to have served the *vicus*. However, beyond the parallel with Newstead and the tentative circumstantial evidence that there would have been a bath house within close proximity to the fort, there was certainly no archaeological evidence for this being a bath house, with all the features uncovered inside the rampart apparently relating to either the field system or the 20th-century wireworks. As previously mentioned, the area uncovered was comparatively small and the disturbance caused by later development was considerable, but this is still unlikely to have completely removed any traces of a substantial bath house and there was no evidence of any of the flue-tiles or *opus signinum* normally associated with Roman baths. It is also of note that Curle (1911: 97) could cite no known parallel of a rampart enclosing a bath house, while Richmond (1980: 296) cites an area close to the south-east corner of the fort, where an abundance of flue-tiles were discovered, as being the most likely location for a bath house.

Whatever the purpose, the parallels with Newstead do suggest that this feature is likely to have been some kind of military installation associated with the fort. Further evidence comes from the fort itself, where a series of excavations carried out between 1991 and 2001 (Leslie & Will 2005) identified the extensive use of clay in the construction of the ramparts. However, the excavators specifically refer to the use of yellow clay for the construction of the ramparts as opposed to a pinky-red variety for ditch lining and a grey variety for foundation deposits. They also note that it was yellow clay that was used for rampart construction at Newstead (Curle 1911: 33), and Bothwellhaugh (Maxwell 1975: 23–4) and even speculate that it may have been chosen deliberately for a combination of reasons such as good coherence quality and possibly even visual impact. The yellowy-grey clay overlying the cobbles is perhaps more reminiscent of that used for foundation deposits within the main fort complex, and Leslie & Will (2005: 35) describe significant structural elements of the fort (notably the west gate) being supported by a foundation constructed from cobbles set with a matrix of grey clay. This might imply that the rampart base was in fact a foundation for a significant stone-built structure, but at 2.5–3m wide it was significantly larger than the 1.5m-wide structural elements of the west gate, indicating that it is more likely to have been the base of a clay rampart.

The use of stone to provide a foundation for a rampart appears to have become quite common practice during the Roman period and Jones (1975: 32, 78) has suggested that it was widely used by the late 1st century AD. However, Leslie & Will (2005: 43) have suggested that this technique was more applicable to turf ramparts, with numerous Antonine forts consisting of ramparts constructed entirely from clay, or clay with an outer face of dressed stone, as appears to have been the case with the main rampart at Inveresk. Nevertheless, they do cite the example of Newstead, which appears to provide the closest parallel to the probable rampart excavated at Inveresk, as they both appear to be examples of a clay rampart constructed on a base of cobbles.

The aforementioned evidence provides a fairly strong argument that this was a rampart base associated with a Roman military installation. However, its exact purpose is speculative, as nothing was found which would suggest its function. While an attractive idea, the suggestion that this may have been the site of the fort baths has no supporting archaeological evidence. An alternative possible function might be something along the lines of a defendable storage or goods area where defence was not the primary function. The case for defence not being the primary function is further strengthened by the lack of an external ditch, which was a common feature on many Roman military installations.

Presumably, this structure would have been demolished after it fell out of use and was levelled prior to the excavation of the field system ditches through its footprint. This would doubtless have been a considerable undertaking as it would have entailed the removal of many tonnes of heavy clay. The lack of any clay deposits on site might indicate that it had been removed and utilised in another structure elsewhere, although it is also possible that it was simply stockpiled within the part of the site that was unexcavated.

9.2.4 The field system

The maximum size of the individual fields or plots at Inveresk is 0.028ha. This small size would perhaps point towards something more along the lines of allotments or paddocks, which may have been associated either with the fort or with the *vicus*. Indeed, the use of ditches is interesting within the context of this area which, with the exception of the clays along the southern boundary of the site, appears to have been very free draining. This would suggest that the purpose of the ditches was primarily as a form of land division, possibly implying differing ownership or tenure. On the face of it, some kind of upstanding boundary such as hedges or fences would perhaps have made more sense given the speed with which these ditches are likely to have filled up, but the use of ditches would perhaps have supplied a degree of flexibility as they could be rapidly backfilled or re-excavated elsewhere if the terms of the tenure changed and a larger or smaller area had to be enclosed.

Soil micromorphology (Ellis, Section 5.3.1) suggests that the lowest deposits of the overlying midden material at the southern end of the area consisted of herbivore dung, possibly suggesting that the field system had been manured, but it could also suggest that this area was being used to corral cattle, or perhaps horses associated with the fort.

Elsewhere, CFA (Mitchell & Anderson 2011) recorded similarly small plots within close proximity to the *vicus* associated with the Burgh II fort, Cumbria, while at Rough Castle, Falkirk (Mate 1995) the plots were also on a rather smaller scale, being described by Breeze (2006: 136) as more appropriate for market gardening activities, so it may be that these were a fairly common feature close to Roman forts, with the larger-scale agricultural land being further out into the hinterland. Within the Inveresk area, larger-scale field systems are known at Lewisvale Park (Leslie 2002b) and Howe Mire (Cook 2002, 2004) and further extensive field systems are likely to have been destroyed by recent agriculture and modern development.

Aside from a general trend towards a west-north-west by east-south-east-aligned field system, much of the layout of the ditches appeared rather random, with plots of irregular shapes and sizes. This was particularly the case towards the southern part of the site, and at the western end within the area that had previously been enclosed by the Roman rampart. These areas contained a maze of interconnected and apparently intercutting ditches. The most obvious explanation for this would be that they represent several different phases of the field system, and indeed a large number of the relationships investigated between the ditches did suggest one ditch cutting another. However, at many of the junctions where this was the case, the ditches still appeared to respect each other, with quite a number of T-junction connections having nicely rounded edges where one ditch flowed seamlessly into another. The implication of this is perhaps that the ditches were broadly contemporary and the impression that one ditch was cutting another may have been created in a number of cases by the need to re-cut the base of the ditches as they filled up rapidly in the sandy soil conditions. This does not imply that all of the ditches were open at the same time but is perhaps an indication of them being of a somewhat transient nature. Indeed, this impression was reinforced during the course of the excavation when during dry and windy conditions, open ditch sections would become backfilled practically overnight by wind-blown sand. Overlying deposits may have provided some degree of stability during the period in which they were under cultivation, but the impression left is one of a constant cycle of recutting and reopening as the ditches became rapidly backfilled.

Ditches associated with the field system had cut Burials 437 and 631 indicating that it post-dated these feature. It was also of note that human remains were found within the midden-rich deposits (C003) possibly indicating further burials which had been disturbed by the field system and simply dumped with the accumulating refuse. However, the field system appeared to respect the location of Roman-period Burials 233, 315, 320 and 326, as they were located within an open area towards the centre of the site. Indeed, the site plan indicates quite a large area immediately to the east of the rampart base, where there had been minimal disturbance aside from the insertion of the burials and the much more modern features associated with the wireworks. This is unlikely to have been a matter of survival as the evidence indicates minimal truncation across the site. If it was left unused in respect of the burials, it is

unclear why this group of burials should be afforded this treatment whereas others were cut by the field system, especially as the radiocarbon dates indicate that they were approximately contemporary. Perhaps a possible explanation is that they were marked in some way whereas the others were not. However, an alternative explanation could be that this open area related to the rampart and might indicate that part of the field system was in use at the same time as the rampart.

9.2.5 The midden-rich deposits

The evidence from the midden deposits suggests that they were Antonine in date and that they built up over the period of occupation of the fort. They overlay the southern extent of the field system as well as part of the rampart base and some of the Roman-period burials.

Within the midden deposits there were a high number of horse harness fittings of probable military origin (Section 7.7), lending weight to the suggestion that a cavalry unit was stationed at Inveresk. Horse remains also represented an unusually high percentage of the animal bones recovered, with at least 14 individual horses being present on the midden and a further six from the remainder of the site (Sections 4.9 and 8.2). Evidence of the use of horses was also identified within midden deposits at Inveresk Gate (Bishop 2004), with finds such as snaffle bits, hipposandal fragments and girth buckles. There was also a high percentage of barley macrofossils, a crop that has been interpreted as being for animal fodder rather than for human consumption. Based on the evidence from Inveresk Gate, Bishop (2004: 184) has suggested that the presence of equine items need represent no more than a cavalry detachment or even simply a few horses ridden by officers within an infantry unit. Whether anything more than this can be interpreted from the Primary Health Care Centre excavations is open to question, but the growing body of evidence for the use of horses does go some way to support Richmond's (1980) suggestion of a possible cavalry unit.

Further parallels with the Inveresk Gate midden come in the form of the number of military items recovered. Indeed, the quantity uncovered at Inveresk Gate has led Bishop (2004: 84) to the conclusion that it was a military midden and that it implied an absence of civil settlement within the immediate vicinity during its period of usage. This midden deposit appears to have been one of the earlier phases at Inveresk Gate and fell out of use as the civil settlement was developed. The excavator (Bishop 2004) has speculated that the location for the midden must have been moved elsewhere and has suggested the southern side of the fort as the most likely location. If this were the case, this programme of works has suggested that the midden was in fact moved to the northern side of the fort, with the southern side maybe being rejected due to the possible location of the bath house. Supporting the case for the Primary Health Care Centre midden post-dating the Inveresk Gate midden is the indication that it came late in the sequence of phasing, whereas the Inveresk Gate midden appears to have been early. However, as already mentioned, the midden materials could have been building up for some time prior to them engulfing parts of other significant phases of activity.

An alternative theory to the assumption that the midden deposits built up gradually over the life of the fort is that they represent one or several large-scale dumping events following the departure of a garrison. The main argument behind this is that articles have been found on middens that might otherwise have been saved and recycled as scrap (Bishop 1985: 12; 2004: 184–5). Also perhaps of note is the sheer quantity of samian ware, as it seems surprising that such a large amount should be broken in day-to-day usage and end up on the rubbish tip. Against this argument however is the need to keep domestic waste, with its associated disease risks, separate from the living quarters, and it is perhaps unlikely that within a well-organised Roman fort, midden material should have been allowed to build up to any great degree. The largely homogeneous nature of the Primary Care Centre midden is also perhaps indicative of a gradual build-up of material rather than several large-scale dumping events which are likely to have left contextual breaks, and a single dumping event is considered unlikely based on the sheer quantity of material and its apparently selective nature.

Bishop (2004: 183) cites the *Schutthügel* (waste tip) (Hartmann 1986: 92) outside the legionary base of Vindonissa (Windisch, Switzerland) as being the

most obvious parallel for Inveresk Gate, and this parallel appears to be even more applicable to the midden uncovered at the site of the Primary Health Care Centre. The *Schutthügel* was linear in form and lay parallel with the defences at Vindonissa at a distance of around 6m (Ettlinger & von Gonzenbach 1951: 40), but was situated on the southern side of the fort rather than the northern side. During the course of the excavation there was some speculation that the Primary Health Care Centre midden may have been altered in form in order to accommodate the wire testing range that was constructed along its summit, but it seems likely that the builders simply took advantage of its existing linear form for the construction of the range. Although running at a slight angle to the fort, the midden was parallel to the break in slope at the base of the ridge on which the fort was situated. At *c* 60m distant from the fort, this midden was considerably further away than the *Schutthügel* was from the fortifications at Vindonissa, but the steep drop down from the ridge on which the fort was situated would have made this a convenient dumping ground. The Inveresk Gate midden was situated at a distance of *c* 170m (Bishop 2004) from the fort, while middens at Echzell and Carnuntum (Grünewald 1983: 8–9) were situated at 64m and 700m respectively.

The *Schutthügel* is believed to have accumulated over a 70-year period and is estimated to have had a volume of 10,000m³ (Bishop 2002b). This was considerably larger than the Primary Health Care Centre midden, where the excavated deposits measured 110m by 20m by a maximum of 2m deep. Based on an average depth of *c* 1m, it would have had an estimated volume of at least 2,200m³ and with each cubic metre of earth weighing in at around 1.5 tonnes, this material would have had a weight in the region of 3,300 tonnes. A large percentage of this would no doubt have been wind-blown sand, but it does nonetheless represent a significant amount of waste material. It is also by no means certain that the excavated area represents the full original extent of the midden; the deposits are likely to have been landscaped to a degree to accommodate the wire testing range, and it is by no means certain how far back into the scheduled area the deposits extended. It is also of note that the area to the west of the development area had been significantly truncated by the wireworks, potentially removing further midden deposits. While any attempts to estimate the original size of the midden – based on its having extended the full length of the northern side of the fort – would be purely speculative, it is probably safe to assume that the excavated deposits do not represent its full extent. All this serves to reflect the vast amount of resources required by a large Roman fort, and potentially indicates that large areas of the hinterland would have been directly under military control.

9.2.6 The post-built structure

The post-in-pit building technique appears to have characterised the second civil period identified by Bishop (2004: 17) (*vicus* period II) at Inveresk Gate and a substantial post-in-pit structure interpreted as a possible amphitheatre was identified at Park Lane (Neighbour 2002). Bishop (2002a: 33) has also noted that post hole buildings are characteristic of the Antonine occupation of Scotland (although not confined to this period). At Inveresk Gate the description of the post holes with their clay and cobble packing appears to be broadly the same as those identified at the Primary Health Care Centre site. However, both at Inveresk Gate and Park Lane, the post holes were predominantly square or rectangular whereas those at the health care centre site were circular. The use of a similar building technique might imply that the post-built structure was broadly contemporary with the second period of the civil settlement although this theory is largely conjectural. The earliest occupation of the *vicus* (*vicus* period I; Bishop 2004: 15) was characterised by post-in-trench construction whereas the later third period (*vicus* period III; Bishop 2004: 18) was characterised by the use of unmortared stone. Assuming the post-built structure was contemporary with the second civil settlement, this is likely to push the rampart back into the first civil settlement period or into the purely military period that pre-dated the civil settlement.

9.3 Conclusions

The excavations at the Primary Health Care Centre site have provided another important piece to the jigsaw of the complex history of Inveresk Roman Fort. This previously unexplored area to the north

of the fort illustrates the degree of change that could take place within the comparatively short space of time of the Antonine occupation of the site. Within this *c* 26-year period, an area previously used for Iron Age burials had seen a substantial rampart constructed and demolished, a Roman burial ground incorporated into a field system, and a massive midden deposit accumulating along the northern side of the fort, most likely gradually swallowing up the previous features occupying the site as it was continually added to.

The reasons why so much change should have taken place are unclear but may be a reflection of the transient nature of the Roman army with one garrison replacing another. Possibly the Roman-period burials relate to the early phases of construction and occupation, and represent a continuation of the Iron Age usage of this area as a burial ground. The rampart also is likely to belong somewhere early on in the occupation of the fort as it appears to have been both constructed and demolished within this comparatively short space of time. Given the quantity of clay that it would have taken to construct this feature, this would have been a considerable undertaking, especially in view of the possibility that it may have been removed from site.

The fact that some of the burials were cut by the field system could indicate that either a new garrison had taken over and was unaware of the burials, or that for some reason the burials were considered unimportant, possibly indicating a socially marginalised group such as criminals or deserters. It might also be a reflection of the economic situation, possibly with the need to produce crops or graze animals overriding the need to maintain the sanctity of the burial ground. The importance of the field system is perhaps also reflected in the quantity of work required in the removal of the rampart. It is perhaps also of note that the field system lay adjacent to the midden, which would have provided a plentiful supply of compost to improve the yield of the plots.

During the initial phases of occupation the midden deposits were presumably fairly small, but as they grew and expanded, gradually engulfing areas of the field system, there may have been the need to extend the plots outwards. Whether or not the field system remained in use until the end of the Antonine occupation of the fort is open to question as the post-built structure of possible Roman date was found to cut the fill of one of the field system ditches. With this post-in-pit construction method being reminiscent of the second civil period (*vicus* period II; Bishop 2004: 17), it might reflect the extension of elements of the civil settlement into what appears to have been a militarised zone. Although conjectural, the possibility of a second civil settlement structure representing the final Roman occupation of the site appears further to condense the time period for the earlier features, especially when considered in light of the fact that there was a third civil period, and might provide some tentative evidence of Roman activity continuing beyond AD 165.