

## 8. DISCUSSION

The 1999, 2008 and 2010 excavations have allowed for important evidence to be recovered which will assist our understanding of the activities of the Roman army in Doune in the latter part of the 1st century AD.

The true extent of the fort can now be extrapolated from a combination of the cropmark evidence, topography and excavated features. The main entrance to the fort was already identified as a cropmark, and now the ditches forming the north-west and north-east side of the fort have been revealed during the excavations. The southern extent of the site is curtailed by a sharp drop in ground level into the valley of the Teith and defines a maximum extent to the fort in this direction (see Illus 2). It would therefore appear that the maximum area of the fort was 2.8–3ha, but it is possible that the area contained within the ramparts was much smaller, perhaps only 1.4ha.

### 8.1 Defences

The fort was provided with three ditches, identified in excavation on the north-west and north-east sides, and visible as cropmarks on air photographs at the north-east corner and main entrance. Although it may seem reasonable to suggest that the fort had three ditches around its entirety, not all forts demonstrate this level of consistency. For example, the Flavian fort at Cargill (Perthshire) appears to have three ditches around part of its perimeter and two ditches elsewhere (RCAHMS 1994: 84–5). In Britain in the 1st century it was common for forts to be protected with double ditches (Jones 1975: 112), although triple ditch systems on at least one side are known from a number of forts in Scotland, including Stracathro (St Joseph 1961: 123). Furthermore, both Cardean (Robertson 1977: 67; Woolliscroft & Hoffmann 2006: 160) and Elginhaugh (Hanson 2007: 124–33) had at least four ditches on one side.

The ditch system appears to have extended less than 18m beyond the rampart, thereby placing it well within the norm for 1st-century forts (Jones 1975: 112). The width of the ditches, between 3m and 4m, is also within the norm, and the depth between 0.8m and 1.6m. The north-west ditches

are shallow on the north-west and, unlike the ditches on the north-east, had no evidence for ankle breakers. Although the natural defence offered by the river valley on this side may have reduced the need for deep ditches on this side, and ditches in multiple systems tend to be slightly smaller (Jones 1975: 112; Johnson 1983: 48), it is equally likely that their depth is due to a considerable degree of later truncation, or that they were not completely excavated in 1999.

The ditches on the north-east side appear to have been deliberately backfilled at a point when the sides had weathered to some extent, but when they would still have posed a serious obstacle. The backfilling would have reduced the depth of the ditches to around 0.8m and was perhaps intended to make them ineffective as defensive works. The presence of turf fragments in the inner ditch at the same level suggests that the rampart was also slighted at this time. From this point onwards the ditches seem to have been left to silt up naturally over an extended period.

There was evidence of a rampart on both the north-west and north-east sides. The only direct evidence indicative of the rampart on the north-west was a spread of soil which sealed the ditches, thought to be the levelled remains of the bank, which may indicate that it had been slighted during the evacuation of the fort. The position of the five ovens here could indicate the location of the inner face of the rampart, as these were frequently built into the lee of the rampart. If it is assumed that the berm between rampart and ditch measured 1.5–2m in width, this could give a rampart width of about 7m. On the north-east side the rampart survived as a 6m-wide upstanding deposit, likely the remnants of a dumped turf-and-earth structure on a surface that had been previously de-turfed. The material forming the rampart base was remarkably stone-free, so if any foundation was provided it must have been of organic material (eg brushwood). Evidence of facing or revetting, either of turf or clay, was seen on both edges of the rampart.

No evidence for gates was recovered during the excavations, but the cropmark evidence showing the uniting of the ditches on the south-east side into a 'parrot's beak' shows the location of the north side of this entrance.

## 8.2 Intervallum structures

Evidence was identified for the *via sagularis* on both the north-west and north-east. No other internal roads were seen. The curve recorded at the southern extent of the *via sagularis* in the north-west may respect a corresponding curve of the defences and therefore indicate the position of the corner of the fort. The position of the ovens and associated working area here appears to have encroached on the width of the *via sagularis* in the area of excavation and seems to have truncated its original width. On the north-east the road is a heavily truncated spread of cobbled and gravel surfaces. A cropmark visible on the south-east side of the fort probably indicates the position of the *via sagularis* on this side.

A row of ovens built into the inner face of the rampart adjacent to the *via sagularis* on the north-west side appears to have been intensively used primarily for bread production, and the identification of large quantities of amphorae together with mortaria here would suggest that this area of the fort was related to food production. The ovens were heated by burning wood, turf or peat inside. When the required temperature was reached the fuel would have been raked out and the dough placed inside. The door would then be sealed until the bread was baked (Johnson 1983: 200).

Similar examples of ovens between the rampart base and *via sagularis* are known from a number of forts, and their location within the intervallum area is common (Jones 2011: 81). At Elginhaugh fort in Midlothian the excavator suggested that up to two ovens may have served each barracks (Hanson 2007: 191–3), a more realistic ratio than the single oven per century as suggested for Fendoch Fort in Perthshire (Richmond & McIntyre 1939: 138) and the fortress at Inchtuthil, Perthshire (Pitts & St Joseph 1985: 200). Ovens of similar construction have been found around the perimeter of forts at Fendoch Fort in Perthshire (Richmond & McIntyre 1939: 138) and in pairs at the rear of the rampart at Inveresk, Midlothian (Leslie 2002: 24). These were associated with spreads of burnt material and could be interpreted as the rake-out of the ovens (Leslie & Will 1999). At Strageath, Perthshire, the rake-out appears to have been piled against the back of the rampart (Frere & Wilkes 1989: 62–3). At Birrens, Dumfriesshire, a well-preserved oven of Antonine

date was excavated which was similar to the Doune examples. The stone wall for the structure survived over half a metre high and, as at Doune, part of the clay dome had collapsed onto the floor (Robertson 1975: 19–20).

On the north-east side pits underlying the road suggest that the area was heavily used prior to the laying of the *via sagularis*. Between the road and the turf rampart here, there was evidence that ferrous metalworking was taking place, in an area which must have afforded some shelter from the wind. This may have taken place in a small building or shelter represented by a foundation trench running alongside the road. This use of the back rampart area can also be seen in the north-west where a metalworking furnace, probably an ironworking shaft furnace, was built into the back edge of the turf rampart and suggests that this area was used for industry. Indeed, the presence of a furnace is noteworthy, and indicates the level of industrial activity that may have taken place within the fort. A possible bowl furnace was proposed at Rough Castle on the Antonine Wall (MacIvor et al 1980), and a putative furnace indicated at nearby Inveravon (Dunwell & Ralston 1995). A bowl furnace was also located at Inchtuthil, and the large *fabrica* contained a smithing hearth (Pitts & St Joseph 1985: 108, 199). If the remains at Doune are those of a shaft furnace, this is the first example from the Roman period in Scotland.

## 8.3 Buildings

All the identified structures were extremely regular and appear to have been of post-trench construction with upright timbers placed at intervals and wattle and daub forming the wall in between. Hanson (2007: 40) has suggested that the normal spacing between posts was 0.6–0.9m, and recent excavations at Carlisle recorded similar dimensions (Zant 2009). The squared post pipes identified in Buildings 1 and 2 both measured 0.13m square, well within the average range for such posts and close to five Roman inches (Hanson 1978: 303). Although no trace of posts could be located in Building 5, the dimensions of the foundation trenches are consistent with post-trench construction found elsewhere. No evidence was recovered for the roofing material, although evidence for turf/peat was recovered from the pits

in Building 5 which may have come from the roof.

With regard to the function of the corridorred Building 1, similar structures have been interpreted as hospitals in the auxiliary forts of Fendoch (Richmond & McIntyre 1939: 132–4), Corbridge (Richmond & Gillam 1952: 241–3), and at Oberstimm and Künzing 1 in Germany (Johnson 1983: 163), and this was the initial interpretation of the building at Doune (Moloney 1999b). However, none of the artefacts recovered during the excavation can support this interpretation. Furthermore, a similar building at Red House, Corbridge, was interpreted as a workshop or *fabrica*, due to its association with industrial activity (Hanson et al 1979: 80–1). Building 1 at Doune is a little larger than the *fabrica* at Red House, but the presence of nails and charcoal fragments in the fill of the trenches, combined with the evidence for a possible furnace, row of ovens and layers of industrial waste in the immediate vicinity, suggests that this building was located within an industrial quarter of the fort and its interpretation as a workshop is more likely.

Several of the other buildings may represent the remains of stores and barracks, aligned north-west to south-east. Building 5 appears to be part of a barracks block fronted by a veranda. Each group of eight soldiers (*contubernium*) would have been housed in a pair of rooms, with parts of three sets of rooms excavated in Building 5. It is interesting to note that the size of the rooms of Building 5 (3.7m length and 2.4m in width) appears to be much smaller than the average barracks block rooms. At Elginhaugh the rooms were on average 4.1 × 3.3m, with similar sizes seen in Building 1 at Doune (4.6 × 3.6m) and at other Flavian-period barracks (Davison 1989: 89, 97; Hanson 2007: fig 5.2). For Building 5, however, the front rooms (*arma*) would have opened onto the veranda and housed the possessions and equipment of the men who slept in the room to the rear (*papilio*). With this arrangement the smaller than average size for these rooms is clearly due to separate sleeping and kit rooms. Two large pits in two of the front rooms of Building 5 could represent internal latrines, possibly lined and covered (Johnson 1983: 171–2).

Building 123 shows the typical layout of a barracks block, comprising a long rectangular building divided into paired rooms (Johnson 1983: 166–76). It appears to be adjoined to another

building to the south-east which may have formed part of the same barracks block. A barracks building which consisted of only five paired rooms (as seen in Building 123) would be unusually small. In theory, an infantry century was typically divided into ten *contuberniae*, each occupying a pair of rooms, while a cavalry barracks housed two *turmae* in at least eight pairs of rooms, although Johnson (1983: 172) notes that the number of barracks rooms in known cavalry barracks blocks in fact varies from six to ten. Taking into account the cropmark evidence (see Illus 1), it is clear that if the adjoining building was the same length as Building 123 it would have reached almost as far as the rampart on the south-east side, with little room for the intervallum road. Alternatively, this unseen building may have formed the officers' quarters, which typically occupied a much shorter block, either adjoining the main barracks, or slightly detached from it.

Building 5 was a different form of barracks block. It was fronted by an open veranda and, although the rooms were identical in width to those of Building 123, the front rooms were only 2.4m deep. The orientation of the two buildings is the same, but they clearly form part of two separate ranges of buildings. The presence of two different types of barracks blocks suggests two different troop types – perhaps Doune accommodated a part-mounted cohort, with infantry occupying buildings such as Building 5, and cavalry the alternative type such as Building 123. Buildings in some forts have been interpreted as cavalry barracks which would have accommodated the soldiers in the room to the rear of the building, and their mounts in the room to the front (Johnson 1983: 176–82). While the front rooms of Building 5 are surely too small to be anything other than store rooms (*arma*), the rooms along the south-west side of Building 123 might have been large enough to function as stables, with the horses facing along the long-axis of the building.

The size of the rooms in Building 123, at 3.8 × 3.2m, is similar to those elsewhere interpreted as stable-barracks (eg Elginhaugh: Hanson 2007; Wallsend: Hodgson 2003). It is assumed that in order to accommodate a cavalry squadron (*turma*) in a stable-barracks, three horses would be stabled together in the front room. Hodgson (2003: 83) has argued for a minimum of 1.2m to be allocated to each horse. The gullies excavated in the floor of

the south-west row of rooms in Building 123, if correctly interpreted as drains, would support this interpretation, as drains, pits or soakaways were commonly provided to collect the horses' urine and keep the floor dry. Pits similar to those seen within Building 123 have been seen on Hadrian's Wall, and elsewhere have been interpreted as urine pits connected with the stabling of horses (eg Hodgson 2003: 71–84). The finding of an ornamented horse harness strap junction (SF007) in the building is convincing evidence for a cavalry unit in the fort, whether or not the horses were kept within the building itself.

The foundation trenches which make up Building 6 are slighter than those recorded elsewhere in the fort, and it was difficult to distinguish the features from the surrounding subsoil. This pale sterile backfill perhaps suggests that the building was only used for a short period, with no cultural material getting into the backfill. Sited next to Building 5, it was located on a slightly different alignment. If both buildings were upstanding at the same time, Building 6 would have blocked access to part of Building 5. Building 6 may therefore represent an earlier phase of use of the fort or a temporary structure possibly erected during the initial construction of the fort.

#### 8.4 Material culture

The Flavian date of the fort, previously attributed by Maxwell, was confirmed through analysis of the pottery. However, as none of this material is

very closely datable, the best date range gained from the pottery for the fort is between AD 65 and 90. While the foundation date of the fort is unknown, conventional analogies would suggest that it was founded in the early 80s AD, although debate currently rages on the dating of the first Roman conquest of this area (Breeze et al 2009). It is particularly frustrating that the as found by the school janitor cannot be dated with any certainty to either AD 86 or 87 – if it dates to AD 86 it fits the general pattern of finds from Flavian forts in Scotland (see 6.3.1.1 'The 2008 coin' above). However, if it dates to AD 87, it is the most northerly find of this date in Scotland and would be a very significant find indeed.

#### 8.5 Conclusion

The excavations in advance of the development of the primary school at Doune have provided supporting evidence for the Flavian date initially given to the fort on its discovery through aerial survey. It has also furthered our understanding of the internal organisation of the fort, including different building forms, the location of an industrial quarter and the main road. The finds recovered through this work have added detail to our understanding of life in this frontier region. The excavations have also shown that within the school grounds, and potentially even below the school buildings, the preservation of the Roman fort at Doune is good.