Proc Soc Antiq Scot, 129 (1999), 577–596

The abandonment of souterrains: evolution, catastrophe or dislocation?

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ABSTRACT

This paper† considers the evidence for the abandonment of souterrains in that part of east central Scotland characterized by Wainwright as 'southern Pictland'. The evidence suggests that most souterrains here were deliberately destroyed, or at least infilled, and that none seems to have outlasted the early third century AD. *The process of destruction seems to have been associated with a significant degree of ritual activity not previously noted. It is postulated that the evidence would allow for a single episode of abandonment (a 'souterrain abandonment horizon'), in the late second or early third century* AD, *which might be related to a major reorientation of social and political structures, perhaps associated with changes in Roman frontier policy.*

THE SOUTERRAINS OF 'SOUTHERN PICTLAND'

Souterrains, albeit under a variety of epithets, have been recognized since the first stirrings of antiquarian interest in Scotland. As early as the 18th century, souterrains were being discovered, explored, and speculated upon, while the arable intensification of the Improvements brought a steady flow of new discoveries during the 19th century. This gave rise to numerous antiquarian records of enormously variable quality.

F T Wainwright, the founder of modern studies of souterrains, recognized the immense variety in the form, and probably also in the date and function, of structures which had been classed as souterrains throughout Scotland (Wainwright 1953a). Indeed many shared little more than their subterranean setting. In order to facilitate meaningful analysis, therefore, he took the important step of isolating a distinctive group of large, generally stone-lined, curving, passage-like souterrains overwhelmingly concentrated in Angus and neighbouring Perthshire (Wainwright 1963). Where dating evidence was available (almost exclusively in the form of Roman objects), it appeared that this group could be placed broadly in the period from around AD 50–250 (ibid, 116). Despite the great increase in the numbers of known souterrains over the past two decades, this 'southern Pictland' group retains its geographical integrity (illus 1).

In broad terms the 'southern Pictland' group can be seen to be concentrated in Angus and lowland Perthshire, extending into northern Fife and south Kincardineshire. Important outliers are scattered south of the Forth in Midlothian and around the northern fringes of the

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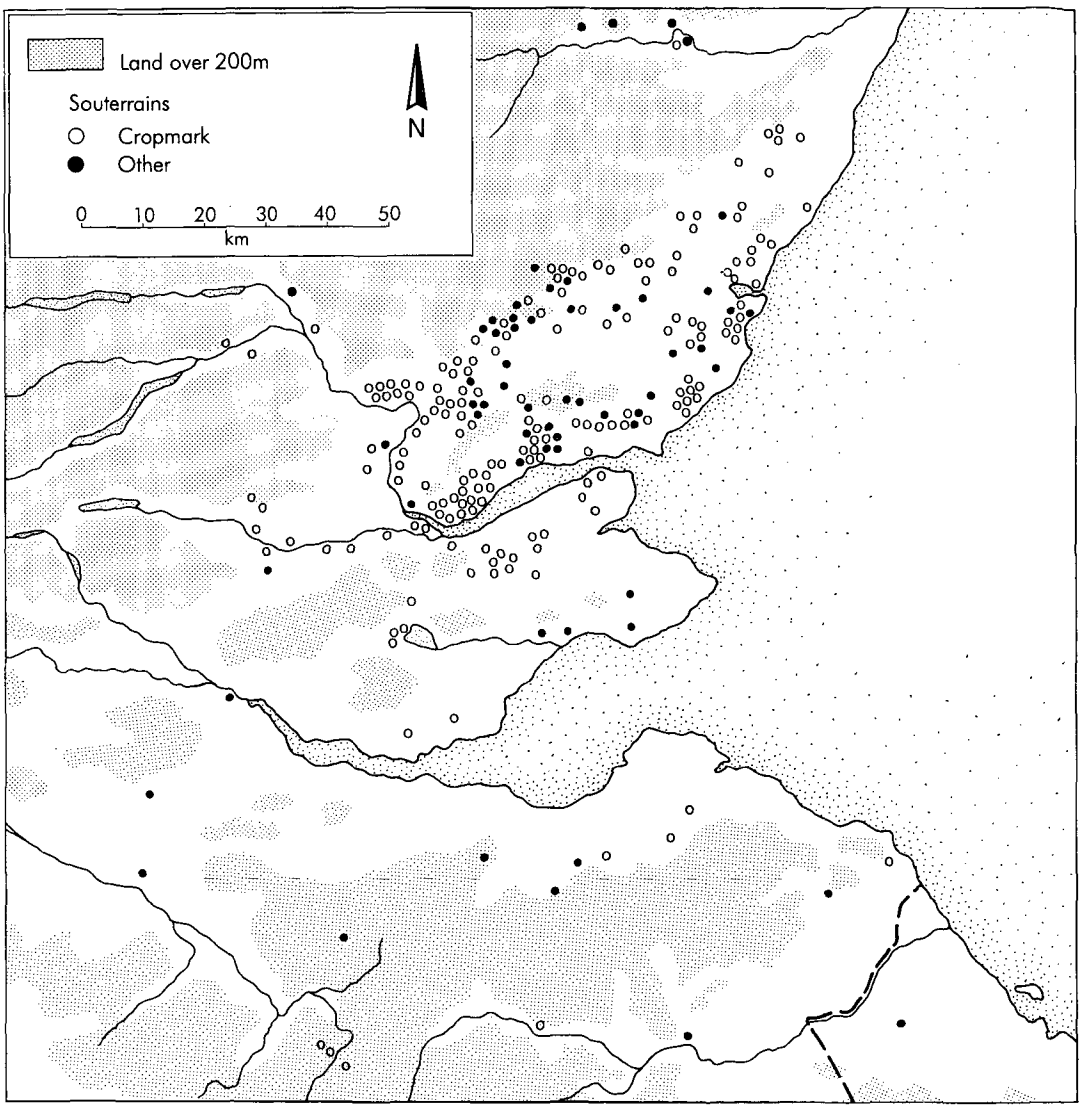
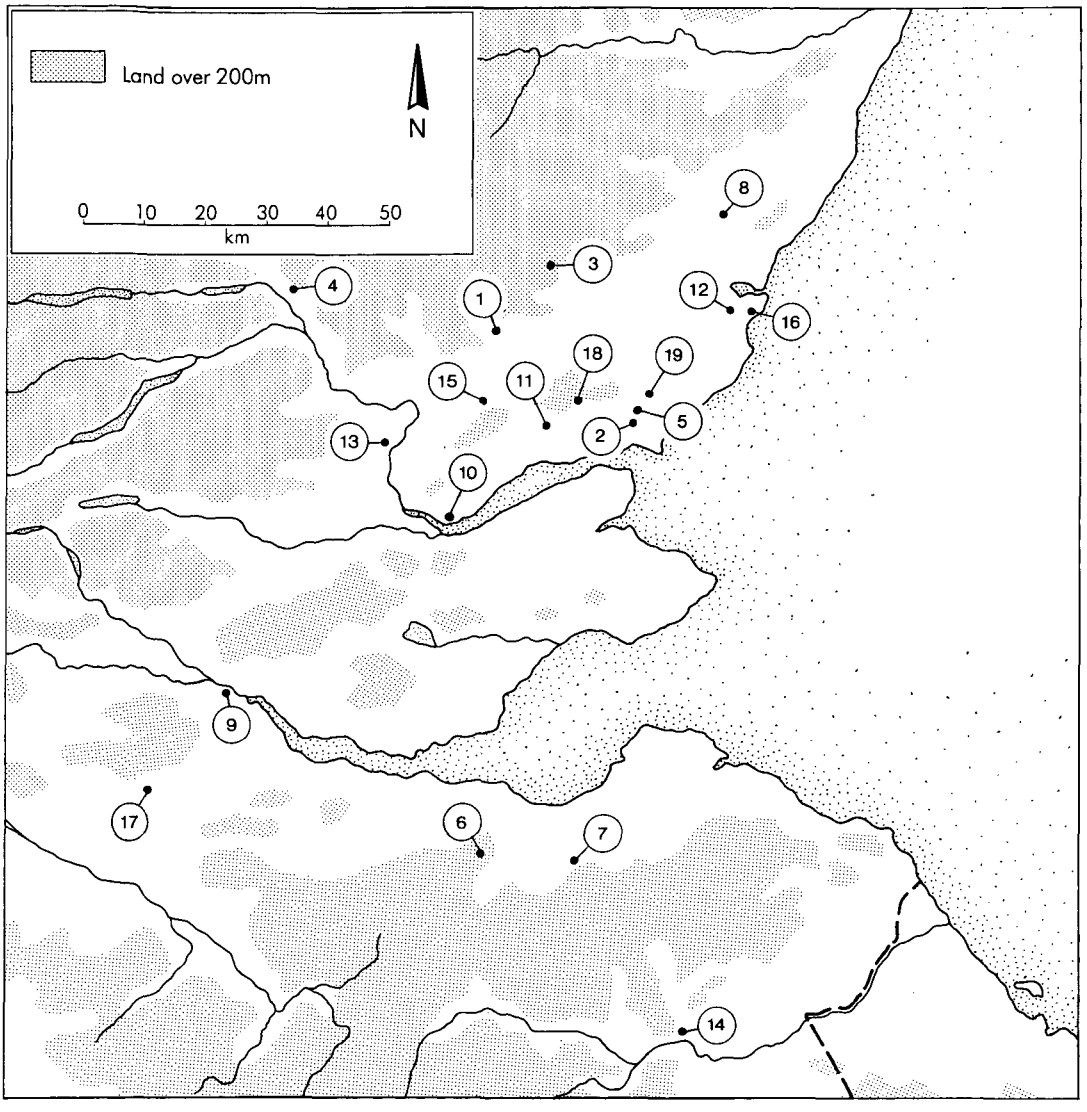
† This paper was awarded the Chalmers-Jervise prize.



ILLUS 1 The distribution of souterrains in eastern and southern Scotland (after RCAHMS 1994, with amendments)

Lammermuirs: the virtual absence of souterrains from the dense distributions of cropmarks in the East Lothian lowlands, however, is quite remarkable. One of the few sites even tentatively identified as a souterrain complex in this area (at Catcraig south of Dunbar) was recently disproved by excavation (AOC Scotland Ltd 1996).

The correspondence in size, shape and construction, as well as geographical integrity, of the 'southern Pictland' group are such that this remains a useful, albeit loose, typological construct. For the purposes of this paper, therefore, souterrains outside Wainwright's 'southern Pictland' will be largely ignored, with the exception of those few located south of the Forth which figure in the later stages of the argument.



ILLUS 2 Principal sites mentioned in the text: 1 Airlie; 2 Ardestie; 3 Auchlishie; 4 Balnadrum; 5 Carlungie; 6 Castlelaw; 7 Crichton; 8 Dalladies; 9 Easter Moss; 10 Glencarse; 11 Hurly Hawkin; 12 Ironshill East; 13 Newmill; 14 Newstead; 15 Pitcur; 16 Redcastle; 17 Shirva; 18 Tealing; 19 West Grange of Conon

A BRIEF HISTORY OF RESEARCH

The first modern excavations of souterrains in 'southern Pictland' were carried out by Wainwright himself, in 1949 and 1950, at Ardestie and Carlungie 1 (illus 2), and shortly thereafter at Carlungie 2 (Wainwright 1953b) and Longforgan (Wainwright 1956). An initial review of the problems associated with Scottish souterrains in general was also published by Wainwright (1953a). However, it was with the publication of Ardestie and Carlungie 1, accompanied by a thorough review of the antiquarian literature on the subject, that serious modern study of the Scottish souterrains began (Wainwright 1963).

ILLUS 3 Glencarse, Perthshire: this site is one of many in east central Scotland revealed by aerial photography. The stone walls of the principal souterrain are visible as narrow white bands, while the interior is much darker. The dark circular cropmark which overlaps its wider end appears to represent the remains of a roundhouse. A second souterrain can be discerned in the lower part of the photograph, as a faint dark cropmark within a lighter part of the field (*Royal Commission on the Ancient and Historical Monuments of Scotland © Crown copyright*)

Subsequent work, however, failed initially to capitalize on Wainwright's pioneering efforts. Indeed, it was not until the early 1970s that the next major series of excavations was carried out, at Northwaterbridge (Small *et al* 1974) and Dalladies (Watkins 1980a), both on the border between Angus and Kincardineshire. The most significant step forward, however, came with the rescue excavation of the well-preserved souterrain at Newmill in Perthshire (Watkins 1980b), the accompanying reassessment of the whole 'southern Pictland' group (Barclay 1980) and their socio-economic implications (Watkins 1984). The souterrain associated with an earlier fort and southern broch at Hurly Hawkin was also published around this time (Taylor 1982), although it had been excavated rather earlier, between 1958 and 1967.

Since the early 1980s, however, there has been little published work, although the database of known sites has been enormously expanded, primarily by the evidence derived from systematic aerial survey (illus 3). Indeed, the first 10 years of aerial survey more than trebled the number of known souterrains in east central Scotland (cf Maxwell 1987), and new sites continue to be found

at a dramatic pace. Although far from fully assimilated, an important summary of much of this material has been published focusing on the area of south-east Perthshire (RCAHMS 1994).

Only very recently has fresh fieldwork begun to yield important new results, much of it building on the evidence of aerial photography. Excavations have been carried out during 1998 at Redcastle (Alexander 1998) and Ironshill East (McGill 1998) in the Lunan Valley, Castlepark near Brechin (D Alexander & K Cameron, pers comm); Easter Moss, Stirling (R Strachan, pers comm), and work has also progressed on the site of an antiquarian find at Auchlishie near Kirriemuir (Dick 1996; 1997).

One important result of this very recent work is that it has shown how even the vastly expanded database of known or suspected souterrains revealed by aerial photography may be only a minimal reflection of their original numbers. For at both Ironshill East and Redcastle, souterrains unrecognized by aerial photography have been identified by excavation, even though both were located on sites where other, well-defined cropmarks survived. Clearly the souterrains of 'southern Pictland' were even more densely distributed than the reassessment prompted by the aerial photographic evidence has allowed.

CHARACTERIZING THE 'SOUTHERN PICTLAND' SOUTERRAINS

Gordon Barclay's paper (1980) includes a comprehensive analysis of the form, dimensions and other aspects of the 'southern Pictland' souterrains, and no attempt will be made here to repeat his classificatory work. It is useful, however, to summarize his principal conclusions and to add one or two observations from more recent work.

The 'southern Pictland' souterrains generally take the form of a tightly curving passage, which often widens slightly from the narrow principal entrance (usually placed at one end and known as the 'axial' entrance) to the terminal. They vary in length between 12 m and 40 m, and may have attached side passages linked to the main chamber through narrow subsidiary entrances. Recorded passage widths vary between 1.2 m and 3.6 m. Where roofs survive, souterrains are always sufficiently high to allow unhindered passage for an adult, even if their entrances might be low and cramped.

It is generally accepted that souterrains would have been associated with surface structures, even though these have been positively identified only at Carlungie 1 (Wainwright 1963) and Newmill (Watkins 1980b). Elsewhere they have simply not been looked for, eg Pitcur and Airlie, recorded but not recognized as traces of contemporary buildings, eg Tealing 3 (Jervise 1873) and West Grange of Conon (Jervise 1862), or else have been removed by ploughing, eg Redcastle (Alexander 1998). Where identified, the above-ground structures appear to have had direct access to the souterrains via either the 'main' or side entrance. It seems probable, following Watkins (1984), that the surface structures at Carlungie 1 and Ardestie represent ancillary buildings rather than the principal above-ground buildings of these settlements.

One area in which perceptions have changed recently is in the variety of materials used to build souterrains. All of the antiquarian discoveries, and those recorded by Wainwright, were built of stone, characteristically with boulder foundations, coursed lower walls, and partly corbelled upper walls capped by massive stone lintels. It should be borne in mind, however, that the nature of the early discoveries (generally random finds during ploughing) was such that only stone-built souterrains would have been found. The more fugitive traces of timber-built structures would not easily have been identified prior to the development of modern fieldwork techniques.

By 1980, however, Barclay (1980, 205) was able to indicate a range of evidence for the presence of stone-walled souterrains which had originally been roofed in timber, most notably

Newmill itself. Indeed, as Barclay suggests, even Wainwright's own excavations at Ardestie and Carlungie (1963) produced little evidence for stone lintels and these structures too were most probably roofed in timber (perhaps also with timber or turf upper walls). Hints of possible timber-walled souterrains, or souterrain-like buildings had also been excavated at Dalladies (Watkins 1980a), and as early as 1870 a partially timber-walled souterrain had apparently been discovered at Fithie, although this interpretation was summarily dismissed by Wainwright (1963, 186).

More recent excavations at Redcastle (Alexander 1998), Ironshill East (McGill 1998), and Castlepark, Brechin (D Alexander & K Cameron, pers comm), have revealed unambiguous evidence for the existence of entirely timber-built souterrains, with walls as well as roofs of timber (the souterrain at Auchlishie is probably also of this form although larger (Dick 1996; 1997)). As we shall see below, however, there does not appear at present to be any significant chronological distinction between the two forms.

FUNCTION AND SOCIAL SIGNIFICANCE

The manifest variation among souterrain forms and sizes across Scotland from, say, Gress Lodge in Lewis (MacRitchie 1916) to Pitcur in Angus (MacRitchie 1900; RCAHMS 1994, 63) renders any suggestion of common function highly dubious. Nonetheless, the profound similarities of shape, scale and detailed methods of construction do argue for a large degree of homogeneity of function amongst the 'southern Pictland' group.

As might be expected, numerous theories have been expounded over the years to explain the function of souterrains. Defence, a popular antiquarian interpretation, can be discounted for a range of reasons rehearsed by Wainwright (1963, 14) and Barclay (1980, 206): essentially the structures would have been highly visible from the surface and impossible to defend from inside. Richard Warner has argued the opposite viewpoint for the Irish souterrains (eg 1979; 1980; 1986; but see Buckley 1986 for an opposing view) but, whatever the merits of his case in that particular context, the Irish souterrains themselves are entirely different in design, conception and chronology to the 'southern Pictland' examples, and will not be discussed further here.

Wainwright's favoured theory, which saw the souterrains as animal shelters, however, has also been convincingly dismissed by Barclay (ibid, 206) on the basis of the constricted form and inappropriate access to the structures. Recent evidence from Redcastle, where entering the souterrain involved negotiating a sharp step (Alexander 1998), adds further weight against the animal shelter theory (although the apparent support for this interpretation derived from Wainwright's soil analysis at Carlungie (1963, 125–8) remains to be adequately explained by the various alternative hypotheses).

Barclay (1980) and Watkins (1980b) both favour the theory that the souterrains of 'southern Pictland' were intended primarily for storage. Although Barclay suggests that their cool, stable conditions would imply that dairy produce and meat were the main stored commodities, Watkins appears convinced that grain was the product for which souterrains were principally intended (see, in particular, Watkins 1984, 73). Although it might be argued that the conditions within souterrains may have been too damp for grain, there is little to suggest that they were not originally rendered watertight. They would presumably have been easier to keep free from vermin than comparable above-ground stores. As Lucas (1973) has noted in an Irish context, the stone-roofed versions at least would have had the important additional advantage of being fire-proof; no small consideration for inhabitants of timber-walled, thatched-roofed roundhouses.

The enormous storage capacity and high density of apparently contemporary souterrains does not seem intuitively to accord with the needs of a pastoral society; the type of society in which meat and dairy produce would have been the main stored commodities. Instead, the location of most souterrains on or near prime arable land is more suggestive of communities engaged primarily in arable production. On present evidence, then, it seems most likely that souterrains were intended for the storage of grain, probably along with other farm produce. It can also be argued that their appearance relates to an intensification of agriculture, perhaps in the pre-Roman Iron Age (Armit 1997, 75), which may be paralleled by a similar agricultural expansion in south-east Scotland (Armit 1999). It seems unlikely that further progress can be made in deciding between the various options, however, without some programme of archaeological experiment.

As Barclay (1980, 206) has noted, however, certain souterrains, generally strictly outside the 'southern Pictland' group, in Fife and Aberdeenshire, seem less well suited to storage and may have had a stronger ritual dimension. Indeed, a possible ritual dimension for souterrains has long been suspected, most recently by Hingley (1992, 29) who drew attention to the possible symbolic significance of cup-marked stones in the walls of many of the structures, eg Tealing 3, Pitcur 2 and Newmill, and reused Roman masonry in others, eg Shirva and Crichton.

Recent perspectives on the British Iron Age stress the lack of division between the sacred and the profane (cf various papers in Hill & Cumberpatch 1995, and Gwilt & Haselgrove 1997), and it is likely that nothing within Iron Age society was entirely devoid of a ritual or symbolic dimension. In view of the scale of these buildings, their apparent links with the cycles of food production and storage, and the time and labour expended on their construction, it would be surprising if their construction and use did not incorporate a series of ritual practices and symbolic acts.

Given their sheer density, however, it seems intuitively improbable that souterrains were exclusively or even primarily ritual or symbolic structures. Indeed their probable function as storage structures suggests analogies with grain storage pits elsewhere in Iron Age Britain where elaborate ritual practices formed an intrinsic part of the use of the structures (cf Cunliffe 1991; Hill 1989; 1995). The indications of ritual practice incorporated in the demolition of souterrains are especially suggestive in this respect (see below).

Whatever their precise function, there can be little doubt as to the social significance of souterrains. The construction of one of the great stone-built souterrains was a massive, labour-intensive undertaking. It would have involved a great many people in the quarrying, transport and emplacement of the huge boulders and slabs used for walls, roofs and paving. It would have involved considerable expertise in drystone building; skills perhaps drawn from outside the immediate community.

Souterrains were seemingly to be found on many, if not most or all, farming settlements throughout the fertile eastern lowlands, where they occupied a central place, as great storehouses of the community's produce; essential to their survival and prosperity. Their overwhelming concentration in 'southern Pictland' is highly suggestive, too, that they may in some way have been associated with affiliation to a cultural, ethnic or political group distinct from neighbours to the north, west and south. This aspect will be discussed further below.

SOUTERRAIN ABANDONMENT: THE MECHANICS OF DESTRUCTION

Wainwright (1963) was the first to recognize that souterrains seemed characteristically to have been dismantled deliberately, rather than simply left to decay. This observation was based

primarily on his own excavations at Ardestie and Carlungie 1, both of which had clearly been partly demolished and infilled, although the settlements of which they were a part continued in occupation (ibid). Wainwright attributed this phenomenon to the problems of drainage encountered by the builders of Ardestie, but was unable to arrive at a satisfactory explanation for the demolition of the apparently successful souterrain at Carlungie 1. Subsequent work, and a reassessment of Wainwright's own excavations, however, suggest that the reasons for the abandonment and destruction of souterrains need not be related to site-specific factors, but might relate instead to the wider socio-political scene.

The best documented evidence for deliberate abandonment and dismantling of a souterrain comes from Newmill in Perthshire, where careful excavation revealed a complex sequence of activity (Watkins 1980b). First, it appears that the souterrain's timber roof was removed, and the limited above-ground elements of walling were thrown down into the main chamber. Following removal of the wooden doors from both entrances, the stone door jambs of the main axial entrance were broken off at ground level (although the wooden doors were then apparently replaced before the chamber was infilled). Once reduced to ground level the souterrain was infilled with a huge quantity of subsoil and topsoil, incorporating a good deal of charcoal. The lack of any primary silting, coupled with the distinctive nature of the fills proved beyond reasonable doubt that the structure had been filled deliberately and speedily, and had not stood open for any significant length of time (ibid, 177).

The excavator suggested that this infill material probably came from outside the settlement (ibid), partly because of the lack of obvious domestic debris (although a good deal of charcoal was present), and partly because of the practical difficulties of removing such a mass of earth without creating as large and problematic a hole as the one to be infilled. While not unreasonable as a hypothesis, this interpretation begs the question of what happened to the material originally excavated from the souterrain during construction: if built up around the wallhead, or otherwise curated (as at Ardestie and Carlungie 1 where the 'upcast' was spread around the wallhead), it might in large measure have formed the subsequent infilling.

During this infilling procedure a hollow was dug in the accumulating fill within which a large bonfire was lit. Finally it appears that the two entrance passages were left to silt up naturally, but not before a broken quernstone was laid on the threshold at the main axial entrance. While the excavator interpreted this find as the casual disposal of a defunct object, it may perhaps be better considered as a deliberate deposit relating to the final closure of the souterrain. Further quern fragments in the souterrain fill may represent casual incorporation of broken stones, although the possibility of further deliberate inclusions should be borne in mind. The report also mentions part of a cranium and attached horncore (species not given) found at the base of the fill in the chamber (Watkins 1980b, 189), which may also have been a deliberate deposit.

The destruction of the Newmill souterrain seems to have been a highly significant act, and one not motivated by obvious practical concerns. Prior to destruction the souterrain was structurally sound, scrupulously clean, and free from any build-up of debris. The act of destruction was elaborate and highly labour-intensive, seemingly involving the movement of huge volumes of material. The process of destruction itself involved seemingly ritual or symbolic acts: the lighting of a bonfire over the part-filled chamber, the smashing of the door jambs, the replacing of the doors (or some other form of timber shuttering as the excavator suggests) to seal off the chamber prior to infilling, and the laying of a broken quernstone on the threshold, seem to be the principal archaeologically discernible remnants of a potentially complex range of activity centred on the closure of the souterrain.

A radiocarbon date from the bonfire within the chamber would appear to date the destruction of the souterrain to the second or third centuries AD (Watkins 1980b, GU-1019 1755 ± 55 BP). Significantly perhaps, as at Ardestie and Carlungie 1, the settlement at Newmill seems to have continued in occupation after the demolition of the souterrain, as domestic debris continued to form within the axial entrance passage (ibid).

Interesting parallels for the demolition of Newmill souterrain may be derived from a reinterpretation of Wainwright's earlier excavations. At Carlungie 1, as at Newmill, the souterrain was demolished to ground level, the process showing detailed similarities between the two sites. For example, at Carlungie the door jambs of the Hut 1, adjoining the souterrain, were broken off (Wainwright 1963) as were those forming the entrance to the souterrain at Newmill. At Carlungie 1 the main axial entrance was closed from outside by the construction of a drystone wall immediately prior to infilling, while at Newmill the equivalent entrance was blocked with timber. The deliberate breakage of sound and substantial structural slabs at both sites, on settlements which were intended for continued occupation, is again suggestive of a ritual component in the process of destruction. The finds from the infill at Carlungie, which included a cup-and-ring-marked stone, broken querns, a stone mould, and a 'fire-making' stone, are likewise suggestive of a deliberate selection of material, although it cannot be proved that they did not represent debris from around the settlement.

At Ardestie, too, there are signs of deliberate and potentially ritualistic infilling. Wainwright (1963, 78–9) identified a series of features overlying the upper fill of this structure as evidence of post-souterrain settlement. This particular concentration of material, however, was confined to the area defined by the upper walls of the infilled souterrain and comprised the remains of a fire, a pit full of shell, and a scatter of cattle teeth and bone. Conceivably, this material may represent a stray survival from a wider area of settlement, preserved here by the slumping and compression of underlying material into the souterrain. If this were the case we might expect that this slumping would have produced an uneven surface to these deposits (if the material below decayed at an uneven rate) or else a reasonably flat surface (if the material below degraded in a regular fashion. However, in the drawn sections of the Ardestie report (Wainwright 1963, figs 14 & 16) it is clear that, although this later 'occupation' material was generally flat, it clearly lapped up against the upper walls of the souterrain, suggesting that it was deposited while the wall-tops were still exposed. It is also significant that these deposits extended *underneath* the corbelled sections of these upper walls (ibid). This would appear to confirm that these deposits formed while the upper walls of the souterrain were still extant, and that the material was confined to the interior of the souterrain. It is extremely tempting, therefore, to see both this material, and the bonfire at Newmill, perhaps as debris from some form of ritual meal prepared and consumed during or following the demolition of the souterrain, or at least as related in some way to the formal closure of the structure.

Wherever souterrains of the 'southern Pictland' group have been excavated by modern techniques, similar evidence of deliberate destruction has been found. For example, although as yet unpublished, the timber souterrain at Redcastle in Angus (Alexander 1998) was also deliberately infilled. There the vertical-sided profile of the souterrain chamber remained intact despite the soft sand and gravel into which it had been cut. The near-instant erosion of this material once exposed to the elements during excavation proved beyond reasonable doubt that the souterrain had never previously been left exposed (D Alexander, pers comm). A fragment of a rolled rim from a Roman glass bowl found in this structure dates its abandonment to the second century AD or later (A Dunwell, pers comm).

At Dalladies, too, Watkins (1980a) found evidence for deliberate infilling of souterrains which formed a cluster within a settlement, although there the dating evidence suggests destruction several centuries before the Roman period.

Indeed, among excavated examples, only at Hurly Hawkin has apparent evidence been found that a souterrain of the 'southern Pictland' group stood empty after its initial disuse (Taylor 1982). This interpretation is hampered, however, by both the earlier disturbance and the limited degree of excavation carried out on the site, while its association with a 'southern broch', and the potentially ritual character of the deposition (cf Hunter 1997, 115–16), suggests that the site is potentially atypical.

Many of the antiquarian excavations, too, appear to have identified signs of deliberate infilling, although the reports are generally ambiguous. Wainwright (1963, 180), following the excavator Jervise, noted that the capstones at West Grange of Conon appeared to have been carefully removed, so as to avoid damaging the wallhead, presumably in a manner analogous to Newmill, Ardestie and Carlungie 1.

The antiquarian reports repeatedly allude to souterrains as being full of 'rich mould' or similar distinct deposits which seem unlikely to represent natural silting. Balloch (or Hill of Loyal) near Alyth, for example, although roofed, was found to be 'full of ashes' suggesting deliberate infilling (OSA account, quoted in Wainwright 1963, 170). The souterrain at Bullionfield, destroyed by the Dundee Kingsway, also seems to have been largely full of 'black ash' although still roofed in stone (Wainwright 1963, 174). That at Camperdown, again apparently with a stone roof remaining in place, was also 'filled with a rich black mould' (OSA account quoted in Wainwright 1963, 176).

Wainwright (1963, 176) was clearly of the opinion that the rich dark fillings of so many still-roofed souterrains had formed through the percolation of soil between the capstones. Yet sites such as Airlie, open since 1794, and Pitcur, since the last decade of the 19th century, have seen little appreciable build-up of deposits on their floors, despite the enthusiastic pursuit of intensive arable agriculture on the soils above their roofs. Indeed, it seems to have been the impact of the expansion of arable agriculture, and increased soil disturbance, that led to their discovery. Given that for many of the centuries when they lay buried, these souterrains were probably covered by rather more consolidated soils, or unbroken grassland, it seems most unlikely that up to 2 m of rich dark earth could have accumulated naturally. Indeed the frequent mention of finds within the fills, rather than at their base, in the antiquarian reports further suggests that the bulk of the fills were in place, within a short time of their abandonment, even for the largely intact, stone-roofed souterrains.

Indeed, of the early finds summarized by Wainwright (1963, 171), only Balnadrum, now inaccessible and perhaps destroyed, appears definitely to have been empty and still roofed at the time of its discovery. It is perhaps significant that Balnadrum is also a geographical outlier, at Moulin in Perthshire, some distance from the agricultural heartland of the 'southern Pictish' group.

WAS THERE A 'SOUTERRAIN ABANDONMENT HORIZON'?

It appears then that the great majority of the 'southern Pictland' souterrains were deliberately dismantled even though the settlements of which they formed a part may have continued in existence. As we have also seen, hints within the depositional sequence at Newmill, Ardestie and Carlungie 1 can be taken to suggest that the process of destruction was carried out with a degree

of ceremony and care: souterrains were not seemingly destroyed by hostile action, but rather by the communities who had built and used them.

The close similarities in the details of destruction at Newmill, Ardestie and Carlungie 1 raise the question of whether the demolition of souterrains, at least in their 'southern Pictish' heartland may represent a co-ordinated series of events. Was there, in other words, a 'souterrain abandonment horizon'?

Certainly the dated finds from excavated souterrains are remarkably consistent in indicating activity during the second century AD. The great majority of excavated souterrains have produced at least one Roman object of second-century date, for example amphora sherds at West Grange of Conon, an amphora bung from Ardestie, samian fragments from Fithie, Pitcur 1, Pitcur 2 and Tealing 3, glass from Tealing 3 and Redcastle, and a trumpet brooch from Ironshill East (the latter two finds suggesting that the timber-built souterrains are of similar date to their stone counterparts). An amphora sherd from Carlungie 1 has recently been recognized as being a Gauloise 12 type, and dating between the mid second/third centuries AD. Perhaps the latest dated find from any of the souterrains is an enamelled bronze brooch of probable Gaulish manufacture from Carlungie 2, which is dated broadly to the mid second/third centuries AD (Wainwright 1953b; Robertson 1970, Table IV; F Hunter, pers comm), but which lacks closely dated parallels.

Taken at face value, this evidence suggests that the majority of the excavated sites were in use during the second century AD, but probably not during the third (the construction of the sites may of course be considerably earlier, as earlier dated souterrains are known, for example at Dalladies 2 (Watkins 1980a)). The most likely time for the various Roman objects to have passed into native hands is presumably during the Antonine occupation of southern Scotland, and it might be anticipated that the supply would have dried up following the abandonment of the Antonine Wall, most probably during the AD 160s. Although the brooch from Carlungie 2 and the amphora from Carlungie 1 could be third century in date, there is no particular reason to believe that they do not date to the second century along with the other souterrain finds.

Of course, there is uncertainty over the use of this Roman material for dating. Such material might, for example, be simply long-discarded rubbish which happened to become incorporated in souterrains infilled in the post-Roman period. However, the frequency of this Roman material, and its coherence as a group, together with increasing evidence for its primary context within certain souterrains (eg Redcastle), and the lack of other fortuitous rubbish, renders this explanation rather implausible.

It could also be suggested, however, that there is an 'heirloom factor' at work, with Roman material being carefully curated, even in fragmentary form, for deposition long after its period of primary use. However, the existence of any such veneration of defunct material for its Roman associations remains to be convincingly demonstrated in a Scottish context, and combined with the lack of any demonstrably later material, it seems more likely that the presence of second-century objects in deposits related to 'closure' can be regarded as giving a good approximation of the date at which a souterrain went out of use. In passing it might be suggested that, as well as an 'heirloom factor', we should consider the possibility of a 'novelty factor', by which exotic material, lacking specific cultural meaning to the society concerned, may have had an unusually short 'life-span' before being deposited or discarded. The Roman material found in the infill of souterrains, given the evidence for ritual closure outlined above, could be interpreted as deliberate deposition of exotic, valuable, and perhaps fairly new, material.

Perhaps the greatest difficulty in the use of this Roman material for dating, however, is the general paucity of third-century and later Roman material from native contexts in Scotland (cf Robertson 1970). It might be argued, therefore, that the absence of third-century Roman material

in souterrains reflects simply the low levels of Roman material in circulation at that date, rather than necessarily indicating that souterrains had gone out of use. However, some third- and fourth-century Roman material does occur even in Angus, for example the glass vessel from a cist burial at Airlie (ibid, 211), and we might expect, therefore, that some at least would have been deposited in souterrains if these were still in general use.

On balance, then, the dating evidence suggests that the souterrains of 'southern Pictland' were present in profusion during the second century AD, although many may have had much earlier origins. In the latter part of the second century, however, or conceivably in the earlier part of the third century, they were deliberately dismantled by their owners, possibly over a few decades, but potentially over a very much shorter period.

Whatever the reasons for the deliberate destruction of souterrains, they do not appear to mark the abandonment of the settlements with which they were associated. There is fairly clear evidence at Newmill (Watkins 1980b), Dalladies (Watkins 1980a), Ardestie and Carlungie (Wainwright 1963) that settlement continued well into the historical Pictish period, even if the nature of that ongoing settlement can be difficult to determine (the evidence is summarized in Watkins 1984). Rather later, semi-subterranean storage cellars have been discovered below excavated timber houses in the mid-first millennium AD settlement at Easter Kinnear in Fife (Driscoll 1997). These may, like souterrains, have served as grain stores, but they are nonetheless very different in form and appear to belong to a rather different structural tradition. Indeed there is no evidence, at least as yet, for the use or construction of any souterrain in 'southern Pictland' after the second century AD.

SOUTERRAINS SOUTH OF THE FORTH

At this point it is worthwhile to undertake a brief diversion south of the Forth, where a relatively small number of souterrains are known, several of which share strong affinities with the 'southern Pictland' group. This is not the place to enter into a lengthy description of these sites, which have in any case already been catalogued and admirably summarized (Welfare 1984).

The important point in the present context is that the only dating evidence for the construction of souterrains south of the Forth comes from the incorporation of Roman building stone within the fabric of the souterrains at Crichton, Newstead 1 and Shirva, indicating that none of these sites was built before c AD 160. There is no dating evidence presently available relating to the abandonment of the southern souterrains, although the collection of second-century Roman material from Castlelaw (an enamelled bronze brooch, glass fragments and sherds of samian pottery) would not be out of place among the 'southern Pictland' group.

If we assume that the period of use of these southern souterrains overlaps with that of the 'southern Pictland' group (on the basis of their closely similar morphology and construction), then this would suggest that the latter, too, were still in use towards the end of the second century. This suggests in turn, therefore, that the 'souterrain abandonment horizon', if indeed it was a broadly synchronous phenomenon, should be assigned to the last couple of decades of the second century AD, or to the first decade or so of the third century AD.

EVOLUTION, CATASTROPHE, OR DISLOCATION?

When Wainwright (1963) first identified the phenomenon of deliberate destruction at Ardestie and Carlungie 1, he attempted to explain it using particular functional arguments, ie that Ardestie failed due to drainage problems, and that Carlungie 1 may have suffered structural weakness of

some kind. The recognition of deliberate destruction as a much wider phenomenon, however, required a less site-specific approach to the problem. Following from his work at Newmill, therefore, Watkins (1984) published a paper in which he suggested that the abandonment of souterrains might mark a distinct stage in the evolution of the society which came to be recognized by the Roman world as the Picts.

Using analogies with the emergence of early states in the Near East, Watkins suggested that souterrains were centralized grain stores, closely controlled by prominent local households. These local élite groups could control the distribution of surplus agricultural production, and thus exert power over the less well-placed elements of society.

In Watkins' model, the disappearance of souterrains was related to the progressive centralization of society in which these local élites gradually lost out to regional rulers who enjoyed considerably more extensive power than their predecessors, and thus controlled access to ever greater volumes of grain. These new rulers were the immediate precursors of the people who emerge into the historical records as Picts from AD 297 onwards. As souterrains were not perhaps conducive to continual expansion, becoming increasingly cumbersome and difficult of access once they reached a certain length, they were abandoned for alternative means of storage which are archaeologically less visible. Watkins cited the complex and enlarged 'super-souterrain' of Pitcur 2 as a possible intermediate stage in this process, by which point the use of souterrains was already becoming rather over-stretched (ibid). It is not clear, however, if we follow the logic of this argument, why the problem could not have been overcome by constructing a group of souterrains, rather than depending on ever-larger single examples.

Watkins' hypothesis that the souterrains of 'southern Pictland' represent grain stores controlled by a 'local upper class' was an important and elegant attempt to advance our understanding of these monuments, but, as well as the problems already raised, it depended on certain assumptions which have become progressively less tenable. First, it assumed that the size of houses associated with souterrains, as at Newmill, would be significantly greater than the average house size of the period. This assumption remains impossible to assess since Newmill is still the only excavated site where we can be reasonably confident that the principal associated settlement structure has been located (as Watkins has discussed, those at Ardestie and Carlungie 1 seem more likely to have been ancillary structures rather than the domestic foci of the settlements). Second, and more importantly, however, Watkins' model assumes that souterrains were relatively rare and generally occurred singly. The number of known or suspected souterrains has risen enormously in recent years, however, first through aerial survey, and now again by excavation on and around cropmark complexes in the Lunan Valley (see above). The great density of souterrains across the landscapes of 'southern Pictland' and their tendency to occur in groups or clusters, would seem to make it extremely improbable that they were élite centres. Indeed, it seems increasingly probable, though far from proven, that souterrains were a more or less standard feature of agricultural settlements in that area during much of the second century AD. Despite these problems, Watkins' general approach was significant in recognizing the centrality of souterrains within the socio-political context of the period, and in its attempt to set the abandonment of souterrains within a wider framework. Nonetheless, it does not appear sufficient to explain the more recently accrued data.

Watkins' model proposed that the disappearance of souterrains related essentially to the internal development or evolution of native society. It seems inescapable, however, that the presence of such large numbers of souterrains during the second century AD, and their subsequent abandonment in the late second or early third century, should be viewed in the light of the wider social and political circumstances that affected southern and eastern Scotland during that period.

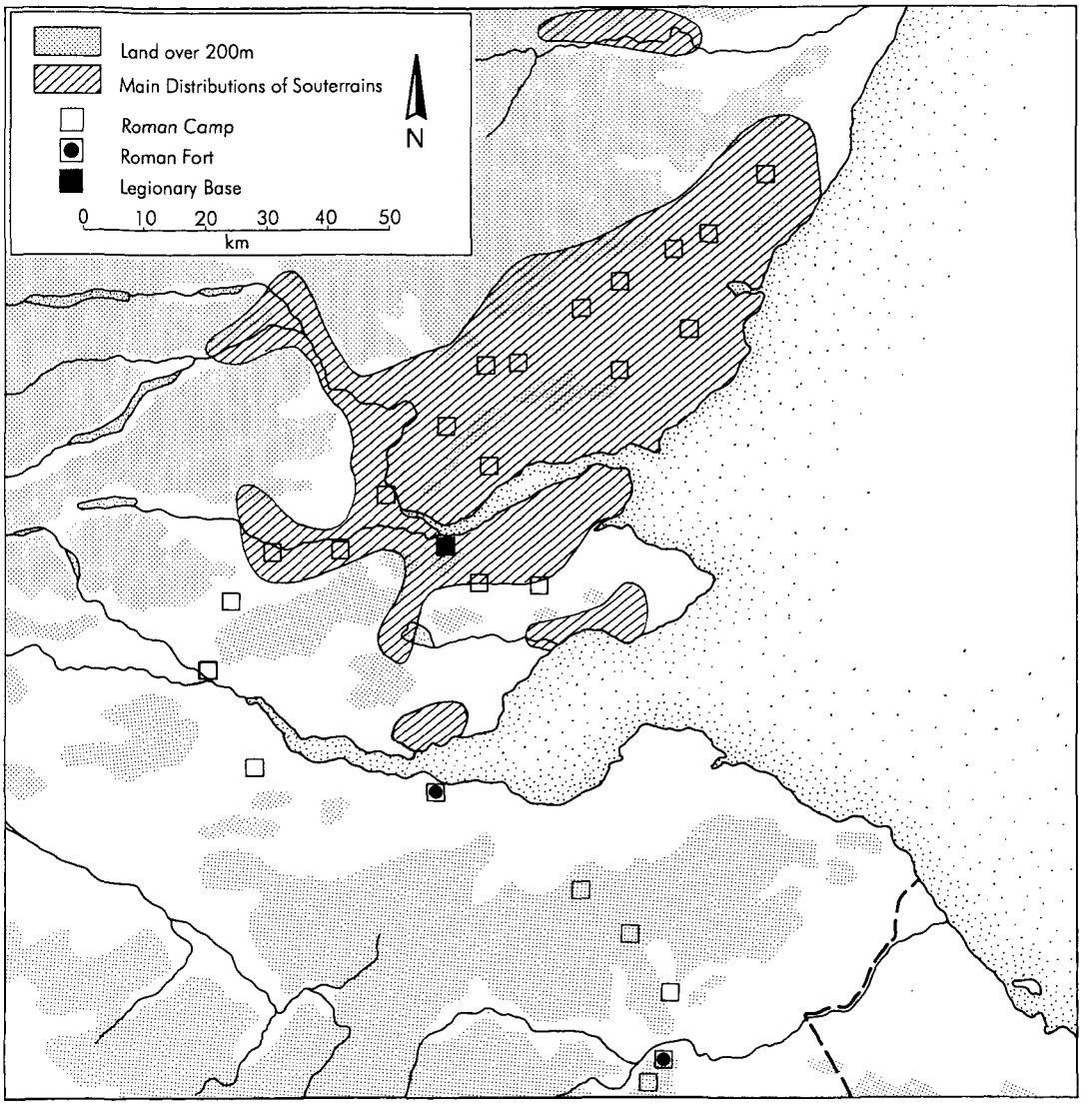
This, inevitably, brings us to the Romans and more specifically to the accounts of the classical authors.

The political events of the second and early third centuries AD in southern Scotland, as distilled from the literary sources, have been comprehensively detailed elsewhere (eg Breeze 1982, 125–35; Hanson & Maxwell 1982, esp. 193–212), and the briefest of summaries will suffice here. In essence, the second century has been categorized as a period of mutual hostility between the Roman army and the tribes of eastern Scotland north of the Forth, punctuated by outbreaks of war and occasionally mediated by treaties. The Roman sources, principally Cassius Dio, combined with place-name evidence, and the distribution of Severan marching camps (see below), suggest that the area characterized as 'southern Pictland' was occupied by a tribe, or coalition of tribes, known as the Maeatae (cf Breeze 1982, 129), and that to the north lay the territory of a further tribe or confederation known as the Caledonians. The precise territories and the degree of permanence of these tribal groups is of course open to question (for example, Hanson & Maxwell (1983, 203) place the Maeatae only in the southern part of the territory suggested by Breeze (1982, 129)), but there seems little doubt that when the Roman sources referred to the Maeatae, they would have included in that grouping the souterrain-builders of 'southern Pictland' (even though they may also have included other less archaeologically visible groups from adjacent areas).

References to warfare on the northern frontier, presumably involving the Maeatae and the Caledonians, or elements and predecessors thereof, are fairly frequent in the records of the second century AD, although precise references to the identity of Rome's enemies are few. For example, a commemorative coin issue of AD 154–5 seems to celebrate an otherwise unattested victory for Roman forces beyond the Antonine frontier (cf Breeze 1982, 120). Nonetheless, the second-century Roman objects already mentioned must have passed into the hands of those living in settlements which contained souterrains during this period, and this presumably implies a measure of non-violent contact. Such contact seems most likely to have occurred during the occupation of the Antonine frontier system from c AD 142 to the AD 160s, when outpost forts at Strageath, Ardoch and Bertha stretched at least to the southern fringes of the 'southern Pictland' souterrain group. It may be permissible to envisage periods of uneasy peace, with trading contacts between the Roman garrison (perhaps most particularly the outpost garrisons) and the tribes beyond the frontier, which degenerated periodically into outright hostility and warfare.

The relationship appears to have begun to deteriorate still further in the later part of the second century AD, following the abandonment of the Antonine frontier. Cassius Dio refers to a war in Britain in the AD 180s as the worst in the whole of the Empire during the reign of Commodus (Cassius Dio LXXII, 8, 1). The northern tribes crossed the Wall (whether the Antonine Wall or Hadrian's Wall is not clear, but the severity of the attack is not in doubt) and plundered Imperial territory, killing a Roman general, until eventually defeated by the governor, Ulpius Marcellus.

Then in AD 197 the Maeatae (in their first specifically named appearance) made war on the Roman garrison, aided by the Caledonians who appear to have broken a peace treaty with Rome in the process. On this occasion the Roman governor, Virius Lupus, was forced to pay off the Maeatae to buy peace. Yet by AD 207 Dio again reports that Roman generals were 'winning wars . . . in Britain' (Cassius Dio LXXVI, 10, 6). In AD 208 or 209, however, the Emperor Septimius Severus undertook a major Imperial invasion of the territory of the Maeatae and Caledonians, despite the attempts of the native forces to sue for peace. The distribution of Severan marching camps (Breeze 1982, 133) bears a striking resemblance to that of souterrains (RCAHMS 1994,



ILLUS 4 Severan installations in Scotland overlain with the main distribution of souterrains of the 'southern Pictland' group (data based on Maxwell 1998 and RCAHMS 1994 with amendments and additions)

70) north and south of the Forth (illus 4). According to Cassius Dio, it appears to have been Severus' intention to put a final end to his northern difficulties by conquering the whole of Britain.

The initial Severan campaign seems to have been successful, although it appears that the Maeatae did not face him in open battle. The distribution of marching camps suggests that the first season's campaign involved a steady march to the north of Strathmore, if not beyond, effectively covering the whole of the 'southern Pictland' souterrain heartland (Breeze 1982, 133). The campaign apparently achieved the (temporary) cession of territory. The very next year, however, the Maeatae were in revolt, and Cassius Dio records that Severus issued instructions for the army under his son, Caracalla, to annihilate the northern tribes. A second series of marching

camps would appear to trace Caracalla's progress through Strathmore and perhaps far to the north into the presumed territory of the Caledonians, who had joined the Maeatae in rebellion (the dating of the possible Severan camps beyond the Mounth remains a matter of some doubt and they have not been included on illus 4). The death of Severus at York in AD 211, however, brought a premature end to the campaign and saw Caracalla depart, having secured treaties with the northern tribes. After AD 211 we hear no more about the Maeatae, nor indeed of any war on the northern frontier until AD 305.

The period during which souterrains saw their apparent *floruit* (though not, of course, their origins, which extend well into the pre-Roman Iron Age) and subsequent abandonment, would appear, therefore, to be the period between the emplacement of the Antonine system, most likely in the AD 140s, and the Severan wars of AD 208–11. It is against the backdrop of the historical events of this period, however imperfectly understood in detail, that any interpretation of the problems associated with souterrains must be framed.

How far Caracalla's attempts to exterminate the Maeatae and the Caledonians may have succeeded is unknowable. Even allowing for the relative poverty of the literary sources for the third century AD, however, his campaign does seem to have destroyed their capacity or desire to harass effectively the Roman province for almost a hundred years to come. Given the distribution of the marching camps of the huge Severan and Caracallan armies, it seems highly probable that the contemporary agricultural settlements would have been devastated during the campaigns of AD 209 to 211, and enormous disruption must surely have been caused to the native food supply, with consequent knock-on effects for famine and disease in subsequent years (see, for example, Breeze 1988, on the logistical requirements of the earlier, Agricolan army on campaign in Scotland). It is perhaps not too fanciful to imagine that the economic power-base of the Maeatae and Caledonians, who had so successfully harried the Roman garrisons for more than 50 years, had been dealt a near fatal blow.

Is it possible then that it was the Severan and Caracallan campaigns that saw the destruction of the souterrains of 'southern Pictland'? As we have seen, the souterrains at Newmill, Ardestie and Carlungie 1 seem to have been dismantled by the same communities who had built and used them. There is no indication of wider destruction of the settlement as a whole, such as might have resulted if the souterrains had been destroyed by Roman troops (although this, of course, might be hard to detect archaeologically), and the process of destruction seems instead to have been premeditated and carefully executed. Nor is there any evidence of material from the very late second century or early third century; the type of material which might have passed into Maeatae hands as part of the payments made by Virius Lupus, and perhaps others, as bribes for good behaviour. Given that this is the one time that we have an apparently definitive statement in the literary sources of Roman material passing into Maeatae hands, we might, therefore, expect that a reasonable quantity of high-quality Roman material would have been in circulation in 'southern Pictland' during at least the early years of the third century. Coins of this period do survive in the archaeological record, for example in the Falkirk hoard of around 1900 coins (cf Breeze 1982, 132), but they have not as yet been recovered from souterrains.

It is, of course, possible that the demolition of souterrains may reflect the temporary abandonment of native settlements in the path of the Severan and Caracallan armies. Dio implies that the Maeatae reacted to invasion by disappearing into the forests, hills and marshes, to fight a guerrilla war against the vastly superior Roman forces (eg Cassius Dio LXXVI, 13, 1), presumably abandoning their homes in the process. Perhaps the ritualistic abandonment of souterrains formed part of the preparations for war on Maeatae soil. Or perhaps the abandoned

souterrains were those whose owners had perished in the Severan conflicts, or those of the AD 180s.

Any such interpretation, however, as well as being virtually impossible to assess archaeologically, would not explain the lack of material from the Severan and immediately preceding periods. It seems unlikely, therefore, that souterrains were destroyed in the disaster which befell the Maeatae from AD 209 to 211. It is probably more likely at present that they were out of use before that time.

If souterrains were not abandoned as part of the internal evolution of the Picts, and not destroyed during the catastrophic invasions of the Severan period, then how do we account for their disappearance? Given the evidence outlined above, the answer may lie in the nature of the societies that existed in 'southern Pictland' between the AD 140s and the end of the second century, and perhaps more particularly in the relationship between those societies and the Roman army.

It seems that souterrains, although a traditional storage technology, may have grown in importance during the Antonine occupation, perhaps as the opportunity arose to export surplus grain, with the Roman garrison providing a ready market. The presence of Antonine objects in relative abundance may thus reflect in part the return flow of prestige goods.

The presence of such a density of undefended souterrain settlements argues for a period of social cohesion and stability. Individual households must presumably have been confident of their continuing access to land and resources in order to have invested such efforts in the construction of large permanent homes and imposing stone souterrains. The implication would seem to be that the second century AD saw the emergence of a stable political system in which internal aggression, if it existed, was not so severe as to prejudice land rights and the ability to invest in the farmstead and the land. The distribution of both souterrains and Roman objects suggests that material wealth was widely distributed. Although political leadership must surely have existed to mediate disputes and maintain the security of the region against external aggression, individual households seem to have retained considerable social and economic autonomy and there is little sign of an overt social hierarchy. Interestingly a recent analysis of metal-work hoards of the same broad period has revealed that hoards from north-east Scotland, of which 'southern Pictland' forms a part, tend to be small-scale and locally distinctive, 'emphasising local identity' (Hunter 1997, 122) and failing to display any evidence for explicit social stratification.

It is possible that the social bonds of such a society were maintained by ties of kinship and common descent, whether real or imagined, and reinforced by co-operative acts, perhaps including periodic military adventures against the Roman army or other neighbours. Status might have been gained and displayed in part by the ability to command an agricultural surplus, of which souterrains would have been a potent symbol, and by concomitant access to exotic Roman artefacts.

It may well have been in the interests of the Roman military to promote the stability of this native society through the import of economic staples and export of luxuries and food. Such an arrangement may have helped foster a degree of docility among the Maeatae as apparently it did among other free peoples beyond Roman frontiers in Africa and Germany (cf Whittaker 1983, 114–15), although the recorded conflict of AD 154–5 may suggest that any such policy was not uniformly successful.

The withdrawal of the Roman garrison far south to Hadrian's Wall, probably during the AD 160s, would have disturbed the internal equilibrium of this society. In this context, the demolition of souterrains may reflect the disappearance of the market for surplus grain, and hence the loss of access to prestige Roman goods, in the years following the withdrawal of the

Antonine garrison. Macinnes (1984, 244–5) has suggested that the disappearance of 'southern brochs', the distribution of which overlaps with that of souterrains, may also relate to the upheavals of the period following the withdrawal of the Antonine garrison.

Status would thus no longer have been demonstrated through the accumulation and conspicuous display of an agricultural surplus. In such a context, warfare may have increased in importance as the principal surviving means by which status could be demonstrated and social bonds maintained. It was perhaps this sudden dislocation of socio-economic basis of Maeatae society that prompted the dramatic increase in the recorded incidence of outwardly directed aggression in the post-Antonine period, culminating with the campaigns of Severus and Caracalla.

In this model, the souterrains south of the Forth would presumably have appeared, as the evidence alluded to above suggests, in the aftermath of the Antonine withdrawal, as the northern examples began their rapid decline. Indeed, the proximity of Castlelaw, Crichton and Newstead 1 to Dere Street may be no accident, as this was presumably the principal extant route by which commodities could be exported to the Roman garrison. Whether this late appearance of souterrains indicates a socio-economic adjustment on the part of people already established south of the former Antonine frontier, or opportunistic land-taking by communities formerly based to the north is of course unknowable, although the apparently rather marginal nature of souterrain distribution south of the Forth (especially their avoidance of the agricultural heartlands of East Lothian) might suggest that the latter is more plausible.

Much work remains to be done before this model can be evaluated more fully, and it is to be expected that the results of future excavations will continue to transform our theories and assumptions regarding the souterrains of 'southern Pictland'. Nonetheless, it is important that we continue to subject the already rich data from this area to scrutiny both through detailed study of the recorded sites and through the application of theoretical models. In particular it will be important to examine the nature of the contacts between these native societies and the Roman army, through studying in detail the patterns of acquisition and deposition of Roman material. It will also be crucial to establish a more informed picture of the origins and development of souterrains (an area largely avoided in the present paper) and a greater understanding of their possible functions.

Although much more data is required, the levels of chronological definition to be gleaned from the analysis of souterrains, and the settlements on which they occur, suggests that we have the potential eventually to be able to construct robust and detailed models of the development of these native societies. In time we might even hope to provide an alternative perspective on developments in Scotland during the Roman occupation to that rough sketch presented in the classical sources.

ACKNOWLEDGEMENTS

I would like to thank the Society of Antiquaries of Scotland for awarding me the Chalmers-Jervise prize for an earlier version of this paper. Derek Alexander, David Breeze, Andrew Dunwell and Fraser Hunter all provided comments on an earlier draft of the present paper. Their comments are much appreciated, although they should in no way be held accountable for the views expressed. I would especially like to thank Fraser Hunter for information on the dating of Roman finds from Carlungie 1 and 2. Sponsorship for the illustrations was provided by Historic Scotland, and the drawings themselves were prepared by George Mudie. I would also like to thank the Royal Commission on the Ancient and Historical Monuments of Scotland for allowing

the reproduction of illus 3 and for allowing the re-drawing with amendments of the map from RCAHMS 1994.

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