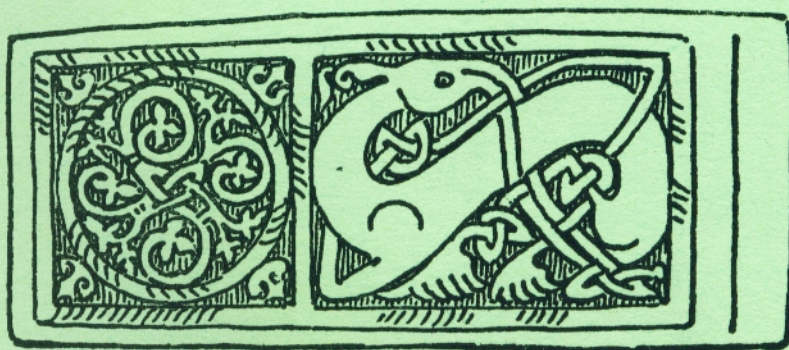


Transactions
of the
Dumfriesshire and Galloway
Natural History
and
Antiquarian Society



XLVI 1969

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Dumfriesshire and Galloway
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A. E. TRUCKELL and W. F. CORMACK, FF.S.A.Scot.

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Editorial

In an endeavour to reduce the delay in publication of the Transactions the Council have decided to produce this one on a smaller scale. This unfortunately has involved the deferment to volume 47 of several important papers including [the North Solway Bird Report No. 3.

Contributions are invited on the Natural History, Antiquities, Archæology or Geology of S.-W. Scotland or the Solway Basin, and preference is always given to original work on local subjects. The Council continues to be concerned over the lack of contributions on Natural History and Geology. Intending contributors should in the first instance apply to the Editors for "Instructions to Contributors." Each contributor has seen a proof of his paper and neither the Editors nor the Society hold themselves responsible for the accuracy of scientific, historical or personal information.

Presentations and Exhibits should be sent to the Honorary Secretary and exchanges to the Honorary Librarian, c/o Ewart Library, Dumfries, from whom enquiries regarding purchases of Transactions should also be made. New members are invited to purchase back numbers—see rear cover. As many of the back numbers are out of stock, members can greatly assist the finances of the Society by arranging for any volumes which are not required, whether their own or those of deceased members, to be handed in. Offprints of individual articles may also be available and the Honorary Librarian can provide a list of these. Payment of subscriptions should be made to the Honorary Treasurer, who will be pleased to arrange Bonds of Covenant, which can materially increase the income of the Society without, generally, any additional cost to the member.

The illustration on the front cover is from an article "The Early Church in Dumfriesshire" by the late W. J. Collingwood in Volume XII (1924/25) of these Transactions. It is of the Wamphray Grave Slab, which dates to about 950 A.D. and which is unusual in having the Scandinavian Dragon side by side with a pattern derived from Anglian leaf scrolls.

This volume is made with the assistance of a generous Carnegie Grant. The Society is also grateful to the University of Glasgow for a grant towards the cost of the illustrations of Dr Corcoran's two articles.

CORRIGENDA

FOR VOLUME XLV, 1968

p. 142 Fig. 1a and p. 145 Fig. 3a—these illustrations should be transposed.

THE MARINE FAUNA AND FLORA OF THE SOLWAY FIRTH AREA

(Part II)

By E. J. PERKINS

Department of Biology, University of Strathclyde

THE SEA SHORE

The geographical limits of the Solway Firth have not been defined so far. However, before considering the shores in some detail, it is pertinent to consider these limits, which were discussed by Perkins and Williams (1963). It can be argued that the area contained by a line drawn from the Mull of Galloway to Haverigg Point, Cumberland, fundamentally constitutes the Solway Firth, but for the purposes of this study, it will be taken to be the area bounded by a line drawn from the Mull of Galloway to St. Bees Head. The Outer Solway is then constituted by the area which is bounded by this line and one drawn from Southernness Point to Dubmill Point; while the Inner Solway is the area to the east of the latter line. This last is not just a convenience, but represents a real division both biologically and hydrographically.

For the sake of precision, both in this immediate section and those to come, each shore is given a station number to which an ordnance survey co-ordinate and the period to which it refers is given. The co-ordinate gives the 100 km. square in figures, but square 25 is also referred to elsewhere as NX and 35 as NY.

The nature of the investigations of the Solway Firth with which I have been associated since 1961, has demanded that many shores have been studied, to a large extent on a routine basis. The following therefore represents a brief summary of the conditions and of the changes at each of the stations visited during the period 1961-68. In many instances a colour slide or slides of these shores are available, and are deposited with the Burgh Museum, Dumfries.

For further details of the transect and ecological reconnaissance data upon which these descriptions are based reference may be made to supporting data to the "Biology of the Solway Firth in Relation to the Movement and Accumulation of Radioactive Materials." This data series is deposited at the following institutions:

1. Library, U.K.A.E.A., Chapelcross Works, Annan.
2. Archive, U.K.A.E.A., Risley, Warrington, Lancs.
3. Burgh Museum, The Observatory, Dumfries.
4. D.A.F.S., Marine Laboratory, Torry, Aberdeen.
5. M.A.F.F., Fisheries Laboratory, Burnham-on-Crouch, Essex.
6. A limited number of copies are available from the author.

Before considering the shores in detail, there are a number of general points

which must be made. Although the period 1964-68 has been one in which relatively small quantities of silt have arrived, there have been massive movements of sediment. The Powfoot Channel filled up and the level of the shore, at Powfoot, has risen so considerably that the children's paddling pool is now almost submerged by sand, an increase in sand depth of the order of 4 ft. in some places, and more than this in others. The south shore, too, has been subject to considerable movement, not only in the Inner Solway, but increases in the amount of sediment have occurred at Harrington, Moss Bay and Flimby. At Cross Canonby the shore changes so frequently that its character alters from day to day; here the changes have had an adverse effect upon fauna and flora. The whole movement was apparently incipient at Cardurnock in 1961, but the process was accelerated by gales, coincident with big tides and floods, in March 1967; according to the "Daily Telegraph" of March 13th, 1967, Rockcliffe Marsh was swept, early in the month, by the worst floods since 1902. Overall one has the impression that since 1964, the shores of the Solway have received vast amounts of fine sand.

Of course, such changes are to be expected in the Solway, which has a long-established reputation for its instability. However, since 1964, a disturbing feature has become evident upon both north and south shores, but particularly upon that of the Stewartry of Kirkcudbright. This feature is an effect of increasing tourism, plus other misuse. At two sites, in particular, viz., Southernness Point and Brighthouse Bay considerable erosion has resulted, and at the latter there is an acute litter problem. There are more places at which experience suggests that an erosion problem is incipient; at others gross, local pollution is evident. It is a matter of sober fact that the very sandy, silt-free dune and merse-lands are not capable of withstanding overuse, or other misuse indefinitely. Clearly, it is unreasonable to expect people to keep away from these places entirely, but there is no doubt in my mind that the situation is serious, and having in mind the mobility of the sands in the Solway area as a whole, one can visualise serious economic problems in consequence. Indeed, it is true to say that, in the past four years, misuse has caused effects which are worse than at any industrial site with which I have been associated; not least because the effects are observable over such a wide area. Clearly, the long, dry summer experienced in the Solway Firth during 1968 encouraged use of these fragile areas on the one hand, and, on the other, made the possibility of permanent damage more likely.

OUTER SOLWAY — SCOTTISH SHORE

LUCE BAY

R.200 Maryport, Drummore (25/143344) 1967

The grass bank of a field gave way to a steeply sloping upper sandy shore which quickly changed to a sandy shore with a low gradient and bar develop-

ment. To the north and south, it was bounded by rocks, while at L.W.M. it gave way to boulders heavily colonised by algae. Algae present included *Ulva lactuca*, *Pelvetia canaliculata*, *Fucus spiralis*, *F. vesiculosus*, *F. serratus*, *Chorda filum*, *Laminaria digitata* and *Ascophyllum nodosum* with *Polysiphonia lanosa*. A very rich and interesting shore; an adjacent camp site makes it an excellent situation for the visiting naturalist.

R.1 Sandhead (25/098495) (1961-63)

The general appearance was a grass bank succeeded by a shingle slope which passed into a clean, medium-fine sandy shore. To the south of the village a steep bank was present above the level of the shingle, while below it a bound shingle zone was colonised by *Fucus spiralis*, *Fucus vesiculosus* and *Porphyra* sp.; *Fucus ceranoides*, *Ulva lactuca* and *Enteromorpha* spp. were present near a fresh water inflow.

R.2 Balcarry (25/198555) (1961-63)

The cliff adjacent to the Glenluce-Stairhaven road gave way to grass, shingle and bound shingle, to the west. Both shingle and cliff were succeeded by medium grade sand. A stone and shingle spit ran towards the water of Luce, across the shore from the cliff at Balcarry. The base of the cliff was colonised by the species *Pelvetia canaliculata*, *Fucus spiralis* and *Fucus vesiculosus*, which in addition to *Porphyra* sp. and *Ulva lactuca* colonised the bound shingle.

R.204 Philip and Mary (25/328456) 1965

A wide zone of grass grown, shingle at the head of the shore colonised by *Matricaria*, *Atriplex*, *Potentilla* and *Silene* gave way to a sandy shore with some bar development. To the north a spit of rocks was colonised by *Fucus spiralis*, *F. vesiculosus*, *F. serratus*, *Ascophyllum nodosum* (with *Polysiphonia lanosa*) and *Gigartina stellata*.

Owing to the hydrography peculiar to this area, heavy deposition of algae occurs. In August, 1965, the high temperatures led to considerable sulphide development and made parts of the shore objectionable.

R.3 Auchenalg Bay (25/243516) 1961-67

A wide grass grown verge to the road gave way first to shingle and then to a shore strewn with large, barnacle-encrusted boulders. The algae, *Pelvetia canaliculata*, *Fucus spiralis* and *Fucus vesiculosus* were present.

WIGTOWN BAY

R.201 Isle of Whithorn (25/478362) 1965-67

An exposed situation, outside the harbour a rocky shore, gullied to give protection to many inhabitants, was colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *F. vesiculosus*, *F. serratus*, *Ascophyllum nodosum* (with *Polysiphonia lanosa*), *Gigartina stellata*, *Laminaria saccharina* and *Halidrys siliquosa*.

RIVER CREE ESTUARY

R.4 Cree Viaduct (25/435635) 1961-64

A narrow merse gave way to the short, steep, muddy bank of the Cree, an erosion step was present.

R.5 Spital (25/465603) 1961-64

The northern end of an extensive area of grass merse narrowed here and was succeeded, after marked erosion steps, by a short steep bank of muddy sand which fell to the stony bed of the Cree. To facilitate deposition, brushwood fascines were incorporated in the banks of this stretch of the estuary. The algae, *Pelvetia canaliculata*, *Fucus spiralis* and *Fucus vesiculosus* occurred on a rocky outcrop, fascines and breakwater.

R.6 Cassencarrie (25/472578) 1961-63

The grass bank at the A75 roadside dropped steeply to a mixture of ragged merse and shingle; beneath the bank and sea-wall some *Phragmites* swamp was present. The narrow merse and shingle zone gave way to a wider, level zone of muddy sand which later sloped gently to the stony bottom of the Cree. The station lay at the southern end of an extensive area of merseland, which lay in a half circle to the west of Creetown and narrowed at its northern end to the shore at R.5 Spital (see above). There was some pan development at the station. To the south, stones incorporated in a stake net system were colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum*.

On 8.6.61, the seaward edge of the "mud-flat" was marked by a deep erosion step. However, on 18.1.63, erosion of this shore had been replaced by active deposition, and the seaward edge of the "mud-flat" sloped gently to the bed of the Cree.

R.7 Shore South of Creetown Granite Works (25/475562) 1961-63

To the north, this shore was bounded by the rubble quay of the Creetown Granite Works, while to the east the grass bank succeeded by a shingle slope gave way to a shore of muddy sand. Intense deposition of rubbish took place in the corner between the quay and the shingle beach. A stony spit, normal to the granite works quay, crossed the shore parallel to the general shoreline and was colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum*.

R.8 Carsluith (25/484584) 1961-68

The grass verge to a minor road gave way to an upper shore of shingle which was followed by a confused zone of shingle and grass merse tussock, of uncertain development early in the period, but much affected by the gales of March, 1967, with consequent erosion. Further down the shore, *Pelvetia canaliculata* and *Fucus spiralis* occurred in zones where coarse sand and mud

occurred in layers, but below this level *Ascophyllum nodosum* and *Fucus vesiculosus* were attached to stones surrounded and covered by a soft mud which finally prevented the completion of a transect to the low water mark in 1963; in 1967 much of this mud had disappeared.

R.9 Ravenshall Point (25/523522) 1961-68

A very exposed rocky shore strewn with boulders heavily encrusted by barnacles. Algal populations were poorly developed and consisted primarily of *Pelvetia canaliculata* and *Fucus spiralis*, however, some *Ascophyllum nodosum*, *Fucus vesiculosus* and *Laminaria* sp. did occur. At the head of the shore some shingle occurred while a carr was present between it and the cliff rising to the A75 road. By March, 1968, a considerable increase in fine sediment at L.W.M. and in rock pools had occurred.

R.203 Auchenlarie (25/538520) 1967

An exposed rocky shore, strewn with boulders, and with considerable development of gullies; heavily encrusted with barnacles. Algae much reduced at upper shore levels; *Pelvetia canaliculata*, *F. spiralis*, *Corallina*, *Chondrus* and *Gigartina* were present.

RIVER FLEET ESTUARY

R.10 Skyreburn Bay (25/577545) 1961-68

Near to the point of entry of the Skyre Burn a tussocky merse was present below a shingle zone. To the east, and away from the Skyre Burn, rocky promontories interspersed by coarse sand beaches were developed; a small rocky islet was also present. The algae, *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum* had colonised the rocks which gave way to a "muddy" sand; in the sheltered parts of the bay an incipient merse of grass, *Spartina* and *Salicornia* was present, 1961-63; by 1968, considerable development and colonisation by *Spartina* and *Salicornia* had occurred.

The *Salicornia* colonisation was succeeded by a *Zosteretum* and a large, almost level area of muddy sand, which finally dropped in a short, more steeply sloping bank to the stony bed of the Fleet.

R.11 Cardoness Castle (25/592553) 1961-68

In this reach, the Fleet Water was contained within dykes; at the station, however, the dyke was breached and the land between the dyke and the A75 road had reverted to the character of a grass merse; a steep, high bank led to the road.

The bank of the dyke fell sharply to the stony bed of the Fleet which was colonised by the alga *Fucus ceranoides*.

R.12 Fleet Water (25/595557) 1961-64

Marine influences were much reduced; on the western side there was a

slight development of marsh which had a fluvial rather than marine character. The marsh was succeeded by a zone of muddy stones which represented a transition to the stony bed of the Fleet. The alga *Fucus ceranoides* was present both on the bed of the Fleet and on an old wharf to the south.

R.13 Fleet Water (25/595560) 1961-64

Terrestrial banks fell directly to the rock bed of the Fleet. *Fucus ceranoides* colonised the rock, upon which an intense development of a diatom flora can occur. To the north-east a *Phragmites* swamp was present.

R.14 Airds Bay (25/576521) 1961-64

A narrow fringe of grass merse gave way to a sandy beach of medium coarse appearance. Adjacent to the merse, a more steeply sloping zone of coarser sand levelled out to a wide and almost level stretch of sandy flats colonised at the highest levels by a *Zosteretum*.

Rock promontories bounded the bay, and these and a rocky outcrop within the bay were colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum*.

R.15 Carrick Shore (25/578511) 1961-64

A rocky upper shore, embayed and colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum*. At levels below the *Fucus vesiculosus* zone, the shore was sandy.

R.16 Ardwall Island Shore (25/575498) 1961-67

The station here was concerned primarily with the mainland shore opposite Ardwall Island. Essentially, a rocky, upper shore colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus*, *Fucus serratus* and *Ascophyllum nodosum* which gave way to a lower shore of sand. However, opposite Ardwall Island itself the high, grassed bank gave way not to rocks, but to a beach of shingle above the sand; this shingle beach was unusual in that it showed the annual changes in profile and backward sloping berm to be expected of a beach exposed to appreciable wave action. Such a beach is rare in the Solway Firth. Below this shingle, the sand formed a causeway to Ardwall Island; some loss of sand had occurred here by 1967. Mussels, here contained large numbers of small pearls.

R.17 Brighthouse Bay (25/635455) 1961-68

Brighthouse Bay faces to the south-west, at its head a grass bank gave directly onto the sand of the shore. The sides, however, were rocky and colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Ascophyllum nodosum* with *Polysiphonia lanosa* and *Fucus vesiculosus*; a ridge of rock and shingle tends to divide the bay crosswise. The sandy shore was of a medium grade. In the last four years of the period, this bay has been visited by increasing numbers of tourists; considerable erosion, ca. 12 ft. at the head of the bay has resulted.

RIVER DEE ESTUARY**R.18 Ross Bay (25/650445) 1961-64**

Ross Bay faces east; towards its head and on the south side merse development and the deposition of muddy sand had occurred extensively. On the northern shore, however, particularly towards the eastern extremity, the shore was rocky and evidently subject to stronger wave action. Ross Bay is the first of the four bays (the others are R.32 Balcary Bay, R.39 Horse Isles Bay and R.67 The Carse) which showed the principle that protection from the dominant tidal streams and wave action from the long south-westerly fetch permits the active deposition of the sedimentary material transported by the tides.

Depending upon the state of merse development and the degree of deposition of sediment, the rocks in Ross Bay were colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum*.

R.19 Nun Mill (25/663490) 1961-68

The steep, rocky upper shore colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus*, *Fucus serratus* and *Ascophyllum nodosum* gave way to an almost level shore of fine sand. Rock outcrops in the sand were colonised by *Fucus vesiculosus* and *Porphyra* sp. The sandy shore showed marked thixotropy. A burn crossed the shore.

R.20 Seaward Cottage (25/665493) 1961-68

The eroded verge of the B727 road gave way to an upper shore of stone and shingle, colonised at its middle levels by *Puccinellia*, *Limonium* and *Armeria maritima*, and at its lower level by *Pelvetia canaliculata*, *Fucus spiralis*, *Ascophyllum nodosum* and *Fucus vesiculosus*. A mud flat, colonised by *Enteromorpha* sp., succeeded this zone; the mud flat in turn gave way to the stony bottom of the Dee channel. Stones in the mud flat were colonised by *Fucus vesiculosus*.

R.21 Gibb Hill Point (25/672508) 1961-68

The station lay to the north of Gibb Hill Point, a wide grass verge at the road-side (B727) was succeeded by a grass merse which terminated in an erosion step. The almost level mud flat below changed rapidly to a steep slope of mud leading to the stony bottom of the Dee. Stones and stakes, where present, were colonised by *Pelvetia canaliculata*, *Fucus vesiculosus* and *Porphyra* sp.

R.22 River Dee—Opposite Yacht Club (25/674510) 1961-64

A wide grass verge at the road-side (B727) gave way to a grass merse which terminated in an erosion step. The mud zone below the step fell steeply to the stoney bed of the Dee. Stones, where present, were colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus*, *Fucus ceranoides* and *Ascophyllum nodosum*.

R.23 Kirkchrist (25/676514) 1961-64

A steep roadside (B727) bank fell to a narrow belt of grass merse separated by an erosion step, from a mud bank which fell steeply to the stony bed of the Dee. Stones, where present, were colonised by the algae *Ascophyllum nodosum* and *Fucus ceranoides*.

R.24 Low Boreland (25/690522) 1961-64

A fairly wide grass merse adjacent to the A711 road, ended in a deep erosion step; the succeeding mud bank fell rapidly to the stony bed of the Dee. The stones in the bed of the estuary were colonised by the alga *Fucus ceranoides*.

R.25 Tongland Bridge (25/691534) 1961-64

A steep roadside (A762) bank gave way to a grass supra-littoral, and a stony shore which at lower levels was colonised by *Fucus ceranoides* and some *Fucus spiralis*.

R.26 Black Murray Plantation (25/685492) 1961-64

A grass verge to the road (A711) gave way to a narrow grass merse with some carr. At the edge of the merse, an erosion step fell to the muddy sand of the flat Manxman's Lake. Stones, where present, were colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis* and *Fucus ceranoides*.

Towards the head and west side of Manxman's Lake a more extensive merse was present. On the transect carried out from the Black Murray Plantation to the shore of St. Mary's Isle at station R.27 the mud flat sloped gently down such that at the Isle the algal zone of *Fucus vesiculosus* was present upon the rocks above the mud.

R.27 St. Mary's Isle (25/677486) 1961-64

At the south-eastern end of St. Mary's Isle a jumble of rocks colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum* (with *Polysiphonia lanosa*) gave way to a shore of muddy sand.

R.28 Grange Road (25/684478) 1961-64

A grass verge to the road led to a ragged merse succeeded by the muddy sand of Manxman's Lake. Stones, where present, were colonised by *Ascophyllum nodosum* and *Fucus vesiculosus*.

R.29 The Lake (25/681473) 1961-64

The grass verge of the road dropped sharply to a rocky/stony upper shore, itself succeeded by the muddy sand of Manxman's Lake. The upper rocks were barren, but at a lower level were colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus*, *Fucus ceranoides* and *Ascophyllum nodosum*.

R.30 Abbey Burnfoot (25/742445) 1961-68

A stony, upper shore, succeeded by an exposed, wave-beaten shore of barnacle encrusted rocks. The rocks were colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Ascophyllum nodosum* with *Polysiphonia*, *Porphyra* and *Chorda filum*, while in the more sheltered mouth of the Abbey Burn, *Ascophyllum nodosum* and *Fucus ceranoides* were also present. On the stony upper shore *Matricaria*, *Atriplex* and Sea-Kale were present.

AUCHENCAIRN BAY**R.31 Balcary Point (25/829493) 1961-64**

A steep, exposed rocky shore at the south-western entrance to the Auchencairn Bay/Rough Firth complex; a little coarse sand between the rocks was exposed at low water, but only with the biggest tides. The rocks were colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus*, *Fucus serratus*, *Ascophyllum nodosum* and *Porphyra* sp. At the bottom of the shore some *Sabellaria* reef was present.

R.32 Balcary Bay (25/821493) 1961-69

This bay faces towards the north-east, there was no development of merse; at the head of the bay the upper shore was shingle, while the jaws of the bay were rocky. The shingle underwent a transition through bound shingle to muddy sand which extended to the base of the rocks colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum*; *Fucus serratus* and *Porphyra* sp. occurred on the south side of the bay below the tower. Like Ross Bay, Balcary Bay is protected from the dominant tidal stream (which runs alongside the western shore of Hestan Island, and then up the east side of Auchencairn Bay) and wave action from the long south-westerly fetch; an active deposition of sedimentary material resulted. This deposition may be regarded as one of primary deposition only, since the deposited material underwent marked reworking; the greatest deposition, as might be anticipated, took place on the southern side, in association with a mussel bed. This deposition declined from 1964 onwards, and in 1969 the shore was much less "muddy" than in the period 1961-64.

On the northern side, below the bound shingle and rocks, the *Zosteretum* extended out into Auchencairn Bay.

R.33 Cottage (25/817505) 1961-64

From the wooded roadside verge, a rocky upper shore fell steeply at first, and then more gradually to the muddy sand of Auchencairn Bay. The rocks were colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum*.

The muddy sand found at the break gave way to the *Zosteretum* in the more central part of Auchencairn Bay.

R.34 North Lodge (25/813508) 1961-69

A sea-wall at the roadside gave way to a gently sloping shore of rock, stones and bound shingle, colonised by *Pelvetia canaliculata* and *Fucus spiralis*. In 1961, these forms alone colonised this upper shore, however, since then a continuous colonisation by *Spartina townsendii* has occurred.

The stony beach colonised by *Fucus spiralis*, gave way to muddy sand, which towards the centre of the bay was colonised by the *Zosteretum*. Clumps of *Spartina townsendii* in the *Zosteretum* have enlarged continuously and increased in number since 1961.

R.35 Seaside (25/808512) 1961-69

The roadside verge gave way to a stony belt succeeded by a narrow merse, the belt of stones was much overgrown, but especially to the south of the station a storm ridge was detected among the rank vegetation. Between this ridge and the road, the swampy ground was colonised by *Iris*, briars and trees.

In 1961, and the beginning of 1962, the narrow grass merse had a long well-defined erosion step between it and the muddy sand below. A west-south-westerly gale on 12th February, 1962, brought considerable amounts of sedimentary materials up into Auchencairn Bay; the merse at Seaside was heavily battered by this gale and underwent considerable destruction. In the period following the gale, it appeared that the marked erosion of the merse was likely to continue, however, this was not so. The condition of the merse changed such, that by late 1962 and 1963, it was in a state of rapid accretion and evolution, and the erosion step disappeared. However, early in 1964, some marked erosion of a small area had begun to take place once more. It was evident that the whole of this merse had developed upon stones of which the storm ridge described was an upper part. The gales of March, 1967, partly destroyed this structure, and induced marked erosion of the grass merse, this process has continued since then. Below the edge of the merse a considerable deposition of fine sediment has occurred; ca. 4 in. depth of sediment has been deposited since 1964. This interesting shore has been spoiled progressively since 1964, by the dumping of masonry and other waste.

In the period 1961-63, *Spartina townsendii* invaded the merse, particularly to the south towards North Lodge (R.34). The muddy sand, below the merse, was well colonised by *Spartina townsendii* in 1961, since then, however, this colonisation has increased significantly, especially since February, 1962. During this period, colonisation has proceeded even more rapidly to the north of the station. Further out in the bay the *Zosteretum* was present.

R.36 Red Haven (25/816517) 1961-64

A small south-easterly facing bay on the Torr Hill peninsula. Two rocky arms colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum* enclosed a sandy beach. Below the

upper beach of coarse sand, and at the base of the rocky arms, the muddy sand generally found in Auchencairn Bay occurred.

To the west of Red Haven, and across Auchencairn Lane a cockle bed was found.

R.37 Girvellan Point (Orchardton Bay) (25/820525) 1961

The investigation of Orchardton Bay, in 1961, centred on Girvellan Point, the tip of a rocky peninsula. The rocks of the point were colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum* (with *Polysiphonia lanosa*). To the west, the smaller Craigrow Bay, with a small merse at its head, was colonised by *Salicornia* spp., *Spartina townsendii* and *Zosteretum*.

In Orchardton Bay itself, a merse was present towards its head, while in the centre, the *Zosteretum* was present on the muddy sand.

The rocky shore, above the mud, on the eastern side was colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus* and *Ascophyllum nodosum*.

R.38 Hestan Rack (25/838505) 1961-64

Essentially a bound shingle area extending north from the northern end of Hestan Island, as a causeway to Almorness Point. This was the site of an extensive mussel bed, one of the few still worked in the area. Colonisation by *Fucus spiralis* and *Fucus vesiculosus* occurred.

THE ROUGH FIRTH AND URR WATER

R.39 Horse Isles Bay (25/837525) 1961-64

This north facing bay is situated on the eastern side of the Almorness peninsula. At the head, and eastern side of the bay, a merse was present. Sedimentary materials were deposited below the merse, especially under the lee of the eastern arm of the bay, where protection from dominant tidal streams and wave action from the long south-westerly fetch obtained (c.f. R.18 Ross Bay, R.32 Balcary Bay and R.62 The Carse). Colonisation by *Fucus spiralis* occurred.

R.40 Glen Bay (25/830548) 1961-68

This south facing bay, situated between Glen Isle and the Almorness peninsula, had essentially a high merse at its head, with rocky arms on either side. Some erosion of the high merse occurred throughout the period and seems to have accelerated from 1964. Concurrently, in the bay as a whole, significant deposition of sediment and development of *Spartina townsendii* beds occurred; some growth of *Puccinellia*, *Armeria* and *Aster* also took place. Between the clumps of *Spartina townsendii*, *Salicornia* spp. were abundant.

On the rocks, above the muddy sand colonised by *Spartina townsendii*, the algae *Pelvetia canaliculata* and *Fucus spiralis* were found, although near to the head of the bay only the former occurred.

R.41 **Glen Isle Marsh** (25/834549) 1961-69

This was one of the few marshes in the Solway area to show development in distinct zones.

The marsh was based on and parallel to the causeway between South Glen and Glen Isle, with the evolving areas lying like a tongue with its tip towards, but standing away from the southern end of Glen Isle. Near to the causeway, the marsh consisted of grass merse alone, marked erosion steps led onto the grass merse which was also colonised by *Armeria maritima*. From then onwards the grass merse tongue ran approximately south, and was invested by a well developed and developing *Spartina townsendii* zone. Towards Glen Isle, and towards the Urr Water, the *Spartina townsendii* was succeeded by a zone of *Salicornia* spp. Algal precursors occurred only at the southern tip of the marsh, along its eastern margin and in the creeks; on the eastern side the precursor zone led to a zone of bare mud which soon fell steeply to the stony bed of the Urr; to the south the algal precursor zone tailed off into a region of mud flats, colonised by occasional clumps of *Spartina townsendii*.

The main body of the marsh showed slight differences in level, these being sufficient to bring about the zonation described. Stones lying on the surface of the marsh were colonised by *Pelvetia canaliculata* and *Fucus spiralis*, normally the tops and sides, respectively. The rock of Glen Isle which bordered upon the marsh was colonised by a thin, ragged and narrow band of *Pelvetia canaliculata*. *Halimione portulacoides* was growing in the creeks.

R.42 **South Glen** (25/832557) 1961-69

In essence, this station lay at the northern end of the Glen Isle causeway and Glen Isle marsh. A steep, muddy and stony bank, fell to the stony bed of the Urr Water. Concurrent with a marked deposition of sediment upon the opposite side of the Urr Water and at the outer edge of Kippford Merse (R.49), i.e., in the bend of the Urr as it swung away from South Glen towards Kippford, erosion has been marked in the period 1961-69, and appears to have accelerated towards the end of the period. Early in the period, alterations to the Solway Yacht Club jetty commenced and have been made throughout the period. The pattern of erosion at South Glen, and the intense deposition at the foot of Kippford Merse upstream and to a part of the Glen Isle Marsh downstream suggests that the jetty is having a marked effect upon the erosion/deposition regime in this part of the Urr Water.

The stones were colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis* and *Ascophyllum nodosum*.

R.43 **Glen Black Stone** (25/832447) 1961-64

A rocky outcrop thrust out into the Urr Water, at the northern end of the Tornat plantation. The more gently sloping upper levels of the rock, later fell sharply into the Urr. At the upper levels, some deposition of silt occurred. The outcrop was colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Ascophyllum nodosum*, *Fucus vesiculosus* and *Spartina townsendii*.

Immediately to the south of the outcrop, a tiny merse which had been in a state of erosion in 1961, had by early 1963 changed to a marked state of accretion and growth.

R.44 Garden Reach (25/822574) 1961-68

A steep grass slope from the A711 road led to a long narrow grass merse, separated by an erosion step from a steeply sloping bank of mud which fell to the stony bed of the Urr Water. During 1963, colonisation, by grass, of the upper levels of this mud zone occurred. The stones, in the bed of the Urr, were colonised by **Fucus ceranoides**.

R.45 Buittle Bridge (25/823606) 1961-68

The limit to which tides flow in the Urr Water; no development of shore, grass banks reach to water's edge; fluvial appearance.

R.48 Craighbreath (25/836564) 1961-68

A jetty of granite rubble, colonised by the algae **Pelvetia canaliculata**, **Fucus spiralis**, **Fucus vesiculosus** and **Ascophyllum nodosum**, gave directly upon the Urr Water. To the north and south a grass merse lay above a muddy bank leading to the stony bed of the Urr.

During most of 1962, the grass merse and mud met at an erosion edge; however, by early 1963 this erosion edge had slumped and further extension of the merse ensued. It is also of interest that **Spartina townsendii** appeared in the growing edge of this merse towards the end of 1962, and continued to increase from 1963 onwards. **Salicornia** spp. occurred at the accretion edge.

R.49 Kippford Merse (25/832555) 1961-68

A wide area of merse leading, without an erosion step, to a slight slope of muddy sand which, in turn, gave way to the stony bed of the Urr Water. As noted under South Glen (R.42), the muddy-sand deposit has been laid down extensively since 1961. In 1961 **Spartina townsendii** was present at a few points in the growing edge only; however, since then it has increased and in 1968 colonisation of the grass merse was extensive. **Halimione portulacoides** occurred in the creeks; some development of **Phragmites** swamp at the extreme high water mark increased in size throughout the period.

R.50 Kippford P.O. (25/837549) 1961-68

A grass verge followed by a sharp drop led to an upper shore of stones, rocks and ragged merse, below which lay a stony beach colonised by **Pelvetia canaliculata** and **Fucus spiralis**; a mud slope lay between this and the stony bottom of Urr Water. Where stones or rock outcrops protruded through the mud, then colonisation by **Ascophyllum nodosum** and **Fucus vesiculosus** occurred. A very narrow shore; some colonisation of grass merse and stones by **Spartina townsendii** occurred. The Kippford Ford which permitted access to the Glen Isle (R.41) shore, was the site of a mussel fishery. Engineering works in 1967, affected this shore which has not recovered yet.

R 51 **Rough Firth** (25/840541) 1961-64

The track from Kippford gave way to a grass bank which led to a rocky outcrop, colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Ascophyllum nodosum* and *Fucus vesiculosus*. Below the *Fucus vesiculosus* zone, extensive mud flats colonised by the *Zosteretum* gave way eventually to the shelly bottom of the Urr Water channel. To the north, some erosion of the *Zosteretum* had occurred. To the east of the rock outcrop, the upper shore consisted of a coarse sand above the level of the *Fucus vesiculosus* zone. By 1962, the northern end of the Rough Isle causeway had apparently submerged beneath deposits of silt. To the east of the causeway, a large clump of *Spartina townsendii* had developed.

Hawthorn and bramble bushes were present in the grass beside the Kippford-Rough Firth track.

R.52 **Rockcliffe** (25/850533) 1961-68

Rocks colonised by *Pelvetia canaliculata*, *Fucus spiralis*, *Ascophyllum nodosum* (with *Polysiphonia lanosa*) and *Fucus vesiculosus* formed an upper shore to the flats of muddy sand which succeeded the *Fucus vesiculosus* zone. To the south towards Castle Point there was a vast storm ridge overgrown by thorn thicket.

R.53 **Spring Stones** (Rough Island) (25/845529) 1961-62

A collection of rocks at the southern end of Rough Island, and the site of a mussel fishery. Cockles also occurred in workable numbers at this point. Colonisation by *Fucus spiralis* and *Fucus vesiculosus* occurred.

R.54 **Craig Roan** (54°50'N 3°46'30"W) (25/861521) 1961-64

Craig Roan is a rocky islet to the east of the Castlehill Point; the site of a mussel bed. Colonisation by *Fucus spiralis* occurred.

R.55 **Port O'Warren** (or Port Ling) (25/878534) 1961-64

Cliffs 150 ft. high fell sheer to the *Fucus vesiculosus* zone where muddy sand reached up to the base of the cliffs; *Pelvetia canaliculata* and *Porphyra* sp. were also present. In caves and fissures at the base of the cliffs, a coarse sand collected and *Sabellaria* reef developed.

R.57 **Marbruie** (25/906556) 1961-68

Wooded cliffs dropped from the A710 road to the shore. The upper shore of rocks colonised by *Pelvetia canaliculata* were succeeded by soil colonised with *Puccinellia* and *Salicornia* spp. Below this level, the shore sloped to the bed of Southwick Water, beyond which the level rose again and a salt marsh community developed. The community consisted primarily of *Salicornia* spp., some algal precursor and small clumps of *Spartina townsendii*, which increased in size and number with time. Active marsh development over a wide area was incipient behind the sand ridge running to Craigneuk

Point, Sandyhills Bay from the merse at 25/918552. The development of this spit had occurred largely since 1961 when its presence was not immediately obvious. Its presence was not recorded by Marshall (1962). The *Salicornia* spp. growth here was the healthiest observed in the Solway area.

R.58 Southwick Merse (25/916559) 1961-68

An excellent example of a merse showing all stages of development from that of accreting edge preceded by a sand ridge running down to Craigneuk Point, to carr and woodland; the cliffs to the north and west formed an excellent vantage point to view the merse as a whole. In the burn meandering across the merse, the rocks present were colonised by *Pelvetia canaliculata* and *Fucus spiralis*; *Halimione portulacoides* was present in the creeks; *Salicornia* spp., *Armeria maritima*, *Aster tripolium* and *Plantago maritima* colonised the grass merse.

R.59 Mersehead Sands (25/968545) 1964

Sand dunes, characterised by *Salix repens*, ending in a deep erosion edge, gave on to a steep slope of coarse sand forming the upper shore, below this level the shore was composed of fine sand which extended to the Barnhourie Channel.

OUTER SOLWAY—ENGLISH SHORE

R.60 Parton (25/978206) 1961-68

An exposed, heavily wave-beaten shore composed of eroded rock, shingle and stones. A large part of the beach was made up of coal of varying sizes and was a source of sea-coal to the local inhabitants. The rocks were sparsely colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Fucus vesiculosus*, *Ascophyllum nodosum*, *Gigartina stellata* and *Porphyra*. Some evidence of pollution.

R.112 Harrington (25/986252) 1966-68

An exposed, rocky shore composed of a conglomerate formed by industrial activity, gave way on the south to a boulder strewn rocky shore and cliff with caves (c.f. Workington (R.115)). Rock near the entrance to shore, at the harbour, was barren but colonisation increased to the south. A very good algal settlement in 1968 may indicate the commencement of a change in the more barren area. Rocks were colonised by *Fucus spiralis*, *Fucus vesiculosus*, *Fucus serratus*, *Ascophyllum nodosum* and *Porphyra*. In 1968, a deposition of sand at L.W.M. became apparent.

R.111 Moss Bay (25/988264) 1965-68

An exposed stony shore with a varied fauna in 1965. In 1966, the deposition of sediment became apparent, an impoverishment of the fauna resulted generally, although the reef-building polychaete *Sabellaria* became more abun-

dant. By late 1968, so much sediment had been deposited ca. L.W.M., that stones with colonising barnacles and mussels were swamped, and definite "sand-banks" had developed. The algae **Fucus spiralis**, **Fucus vesiculosus**, **Ascophyllum nodosum** and **Gigartina stellata** were present.

R.115 **Workington** (25/989296) 1965-68

A stony shore heavily colonised by barnacles and small mussels. At the higher levels, it was colonised by the algae **Fucus spiralis**, **Fucus vesiculosus**, **Ascophyllum nodosum** and **Gigartina stellata**.

To the north-east cliffs which seem to have arisen as a consequence of the mineralisation of bings, showed interesting cave formations; some of the shore here was composed of mineral conglomerate.

R.110 **Siddick** (35/001316) 1965-68

A steeply sloping upper shore composed of industrial waste gave way to a reef colonised by **Fucus spiralis**, **Fucus vesiculosus**, **Ascophyllum nodosum** and **Gigartina stellata**. In turn, this reef gave way to a sandy shore. Considerable sedimentation has occurred since 1965 and by 1968 had filled pools in the reef and buried its lower seaward edge, inundating the attached **Fucus vesiculosus**.

R.61 **Flimby** (35/013331) 1961-69

A deep erosion step at head of the shore led to a beach of shingle and conglomerate, rusty in appearance. The algae present on the barren upper shore were **Fucus spiralis** and **Fucus vesiculosus**; both were sparse, but the former was confined to a narrow and distinct band across the shore, while the latter was widely distributed. The lower shore was colonised by **Gigartina stellata** and **Corallina**. Sedimentation on the middle shore has been considerable since 1967. Submerged forest was exposed on the lower shore during 1967-68.

R.62 **Cross Canonby** (35/062396) 1961-68

"Dune land" colonised by marram grass bordering the B5300 road gave on to an upper shore of shingle which led to a shore of coarse sand itself succeeded by fine sand. Very considerable sediment movements occurred on this shore, and were accelerated markedly by the gales of March, 1967. These gales induced marked erosion of the "dune-land." Where stones were present, a sparse colonisation of the algae **Fucus spiralis** and **Fucus vesiculosus** occurred. At low water mark, the fine sand gave way to the coarse sand of **Sabellaria** reef or "ross."

The sea-coal pebbles in the shingle at the top of the shore were possible evidence of a longshore drift in a north-easterly direction.

R.62 **Allonby (South)** (35/078420) 1961-68

An upper beach of shingle led to a lower beach of coarse sand preceding that of a finer grade. Possible evidence of a longshore drift in the north-

easterly direction was found in the presence of sea-coal pebbles in the shingle at the top of the shore. Considerable sediment movements occurred.

R.62 Allonby (North) (35/080436) 1961-69

A shore similar to that at Allonby (South). Evidence of a longshore drift was found in the shingle spit which diverted the mouth of Crookhurst Beck to the north. This spit grew considerably until, by 1968, it reached a point ca. 170 yards to the east of a line normal to the E.H.W.S.T. and based on the gable end of the toilet. The beck, then broke through at a point ca. 200 yards west of this line, and in November, 1968, gained egress to the sea, by this route alone.

INNER SOLWAY—SCOTTISH SHORE

R.65 Southernness Point (25/977542) 1961-68

An area of rock reefs and sand exposed in position and subject to wave action. The algae *Pelvetia canaliculata*, *Fucus spiralis*, *Ascophyllum nodosum* (with *Polysiphonia lanosa*), *Fucus vesiculosus* and *Fucus serratus* colonised the rocks.

In positions exposed by the tide, *Mytilus edulis* did not occur in significant quantities upstream of this point.

Some stunted *Sabellaria* sp. occurred on the rocks exposed by the receding tide; that offshore is now dead, although it was abundant formerly. Colonies of this polychaete did not occur upstream of this point.

R.66 Powillimont (25/991565) 1961-68

At the northern end of Gillfoot Bay, cliffs and a rocky or shingly upper shore gave way in the *Fucus spiralis* zone to fine sand. The shore here represents a transition between the exposed and sheltered shores at Southernness Point (R.65) and Carsethorn (R.67) respectively.

R.67 Carsethorn (The Carse) (25/982600) 1961-68

Carse Bay faces north-east; a stone and coarse sand upper shore at Carsethorn gave way to grass merse at the northern end of the bay, to the south of Carsethorn the beach showed a marked increase in the amount of stone present. Like Ross Bay (R.18), Balcary Bay (R.32) and Horse Isles Bay (R.39) to the west, Carse Bay showed the principle that protection from the dominant tidal streams and wave action from the long south-westerly fetch permits the active deposition of the sedimentary materials transported by the tides. This feature plus an effluent from a byre and a general deposit of rubbish combine to make it an unsavoury shore. Like Balcary Bay, deposition of muddy sediment has decreased since 1964.

White fish were caught by means of paidle nets.

R.68 Drumburn (25/984620) 1961-64

A narrow grass merse led to a wide, low gradient, shore of fine sand. At

the upper levels it showed accretion and development, but the lower shore showed features of erosion, and terminated in a steep, sharp, and deep drop to the bed of the west channel of the Nith.

R.69 Burnfoot (25/989637) 1961-64

A narrow grass merse led to a narrow, low gradient shore of fine sand; it terminated in a steep, deep drop to the bed of the west channel of the Nith. Erosion occurred extensively since 1961 with a marked narrowing of the shore; at the same time, significant development of a 'creek' type of erosion occurred and led to a marked cutting back into the sand from the main erosion edge. In the early months of 1964, there appeared to be a reversal of this trend to one of accretion. To the north, at the point, rocks at the head of the shore were colonised by the algae *Pelvetia canaliculata* and *Fucus spiralis*. There was some pan development in the merse.

I am informed by Mr S. Steel that since 1964, a vast deposition of sediment has occurred, and the Nith channel has shifted eastwards.

R.70 Glencaple (25/994685) 1961-68

The grass verge to the B725 road dropped sharply to a narrow grass merse which terminated in an erosion step. This was succeeded by a narrow sand shore which ran down to the stony bed of the Nith.

R.71 Kenneth Bank, Caerlaverock (25/998675) 1961-68

The grass verge to the B725 road dropped steeply to a *Phragmites* swamp which gave way to a grass merse which terminated in an erosion step. Active erosion with 'turf-stripping' occurred here. This was succeeded by a flat of muddy sand which ran down to the bed of the Nith. There was some pan development on the merse.

From 1964 onwards, the sandy flat narrowed, until by 1968 the considerable loss of sediment reduced the distances between the erosion and merse edges to 10 yards; the erosion step was 2½ ft. deep.

R.72 Brow Well (35/084673) 1961-68

In 1964, a wide grass merse terminated in a deep erosion step having a talus at the base. Beyond the talus, a short flat of muddy-sand sloped gently to the stony bed of the Lochar Water. By 1968 a considerable deposition of fine sand had filled and shifted the Lochar Channel; the talus slope was modified; at the lower level an accretion edge with *Puccinellia* hummocks had developed.

There was some pan development on the merse.

R.73 Ladyhall (35/097661) 1961-64

A very wide grass merse terminated in an erosion step and led to muddy sand sloping down to the Lochar Water, at the north-west end of Priestside Bank. There was some pan development.

R.74 Howgarth (35/140652) 1961-64

A narrow eroding merse, at the end of the track from Powfoot, led to a very wide expanse of sand flats which sloped down to the Powfoot Channel. On the 10.5.63 areas of sand at the edge of this channel were in a state of quicksand. The grass merse was colonised by **Juncus**.

R.75 Powfoot (35/147654) 1961-68

From 1961-64, the upper shore, to the east, was a jumble of ragged merse, coarse red sand peculiar to Powfoot, and shingle, while to the west it was a more coherent and highly developed grass merse. While many erosion features were present, an impression of incipient merse development was gained in 1964, particularly in the area of hummocks to the east. Since then, vast amounts of sand have been deposited upon this shore, obliterating the Powfoot Channel and leading to observable merse development. The sand deposition has almost submerged the wooden paddling pool, killing the **Fucus spiralis** and the **Mytilus** colonising the outside and inside respectively. The hummock zone was colonised by **Enteromorpha**, **Fucus spiralis** and **Pelvetia canaliculata**.

THE NEWBIE SHORE**R.76 Rifle Range (35/164651) 1961-64****R.77 Newbie Mains (35/173646) 1961-64****R.78 Barnkirk Point (35/196643) 1961-64**

For convenience, the stations on this stretch of the Solway shore are considered as a whole.

The shore was primarily one of stones towards the head, with deposits of finer material towards the low water mark, although in places the stones extended to the channel. Above the shore, eroding soil cliffs at the western end declined in height towards the east and became a grassy bank above the E.H.W.M. Although stony at the head of the shore, with, in some cases, finer sediments at low water mark, there was no storm-profile. Intense scouring of the scar ground to the east of Newbie Mains was clearly due to tidal action. There was no evidence, anywhere, for the direct effects of wave action or for the action of longshore drift. Further, Barnkirk Point was not in an obvious state of development.

At the head of the shore, erosion appeared to be primarily aerial; the tides then removed the finer sediments, leaving the stones (cf. Yorkshire coast, Oldham, 1862); while the tides removed only the finest material at the western end, there was evidence of appreciable scouring and removal of coarser materials by this mechanism, at the eastern end. To the west of Barnkirk Point, deposition of fine land-derived sediment sometimes occurred, however, it was very limited in extent and can be easily distinguished from the truly marine sediments. During 1962, the stumps of a submerged forest were observed in the region of tidal scour between Newbie Villa and Barnkirk Point; submerged

forest has also been recorded at Redkirk Point, Allonby Bay, Cardurnock, Beckfoot (Blake, 1955), Flimby, and St. Bees (Pickering, 1877-78).

Colonisation by the algae, *Pelvetia canaliculata*, *Fucus spiralis* and *Fucus vesiculosus* occurred widely, but not abundantly. *Fucus ceranoides* occurred at Barnkirk Point.

R.79 Annan Waterfoot (35/196646) 1961-68

A large dyke, breached further upstream in the Annan, separated an extensive area of grass merse from that which formed a narrow fringe to the River Annan. The merse behind the dyke was crossed by creeks, and pans were present.

The merse outside the dyke had pans and terminated in an erosion step, a short steep bank of mud led to the stony bed of the Annan. This merse is much disturbed by the activities of Man. Colonisation of the sewer outfall by *Fucus spiralis* occurred.

R.80 Seafield (35/203648) 1961-64

This shore was bounded on the east by the northern end of the old Solway viaduct. The upper shore of grass merse terminated in an erosion step at its deepest on the north side of the bay. In this area, erosion had proceeded rapidly in the earlier part of the 1961-64 period; however, by 1963 the process had become reversed and many features of marsh development, i.e. Algal precursor and hummocks of *Puccinellia*, were present over a wide area. Pans were developed in the merse adjacent to the viaduct while to the north it was crossed by a burn.

The stone-work of the viaduct was colonised by the algae *Pelvetia canaliculata*, *Fucus spiralis*, *Ascophyllum nodosum* and *Fucus vesiculosus*.

R.81 Dornock Brow (35/239651) 1961-64

The earthen cliffs to the west dwindled in height to that of a grassy bank on the east. A grass merse developed upon a base of shingle had extended throughout the period 1961-63; to the east the upper shore was shingle alone. The developing edge of the merse consisted of *Puccinellia* hummocks; stones which protruded in this zone were colonised by *Fucus spiralis*; there was some pan development in the merse.

Below the merse and shingle, a zone of muddy sand gave way to fine sand towards the middle of the Solway.

R.82 Torduff Point (35/266638) 1961-64

An earthen cliff at Torduff Point gave way to a grassy bank on the east and west. The upper shore of stone, rock and coarse sand was succeeded by a zone of muddy sand which in turn was succeeded by a coarser sand towards the middle of the Solway.

The algae *Fucus ceranoides* was present on the rocks of the point.

R.83 Brow Houses (35/282650) 1961-64

A grass merse developed on a base of shingle, terminated in an erosion edge, and was succeeded by a narrow shore of muddy sand which gave way to fine sand near to the Esk Channel. To the west a shingle bank formed the base of a stake net; some development of *Phragmites* had occurred at the edge of the merse in the period 1961-63. Stones of the shore were colonised by the algae *Ulva lactuca* and *Fucus spiralis*.

R.84 Redkirk Point (35/302651) 1961-64

Extensive erosion was evident at Redkirk Point itself and on the shores to the east and west. There was no evidence of any significant deposition anywhere while at the point itself much of the bedrock was exposed. To the east, the merse was eroded such that it had a "cliff-like" erosion edge. During 1963, the Esk Channel flowed beside this merse, turned south through a right angle as it impinged behind the point, and then west again at the point itself (contrast 1 in. mile Ordnance Survey for 1956). At this time, there was little doubt that the Esk, thus channelled, was contributing materially to erosion of the point.

R.85 Old Gretna (35/317661) 1961-64

A terraced grass merse with a developing edge of *Puccinellia* hummocks was succeeded by a narrow shore of muddy sand leading to the stony bed of the Esk. At the lower levels of the grass merse stunted *Salicornia* spp. occurred. This station lay at the south-western end of the Sark Marshes. There was some pan development.

R.86 Sark Marsh (35/323664) 1961-64

This was an extensive area of terraced grass merse crossed by creeks, having pan development at the lower levels, and bounded on the east by the River Sark. This marsh was in an active state of accretion and development, and colonised at the lower levels by a stunted growth of *Salicornia* spp. The edge of the merse fell away to a muddy sand in the mouth of the Sark, and in the Esk to a coarse sand, succeeded by an area of coarse sand, stones and rubbish which finally gave way to the stony bed of the Esk. The area of sand and stone within the Esk was much scoured by the tide. In 1963, in contrast to the 1 in. : 1 mile Ordnance Survey map of 1956, the bed of the Sark turned east before joining that of the Esk.

R.87 Moss-Band Hall Marsh (35/334651) 1961-64

At the southern end of an extensive merse which extended to the Sark Water-Foot. A grass merse with a steep fluvial erosion edge fringed by sand lay above the stony bed of the Esk. There was some creek and pan development in the merse. The upper merse was backed by a dyke.

INNER SOLWAY—ENGLISH SHORE

It is convenient at this point to consider the shore from Westfield (R.89) to Anthorn (R.94) as a whole. Early in the period of the investigation, in 1961, the processes of erosion were marked, everywhere along this shore, except at Cardrunk where there was some hummock development. Elsewhere, erosion edges were evident. This was largely true throughout the period 1961-63. In the spring of 1964, however, all was changed and intense deposition took place along the whole of this shore, so much so that large amounts of sand were deposited on the grass marsh at Biglands (R.92) where many pans became filled with sediment. At Easton (R.88) similar changes had taken place also, while at Newton Arlosh marsh (at 35/198580) an erosion edge which had been more than three feet deep in 1963, was reduced to about one foot in depth by 1964. Most of this deposition was fine sand; little silt was evident. This pattern of deposition continued to 1968.

R.88 Easton (35/275597) 1961-68

At the western end of Burgh Marsh, a grass marsh, adjacent to the road, terminated in a steep erosion edge. A talus at the base of the erosion edge which led to the stony bed of the R. Eden, became less developed as sand deposition occurred and the channel moved northwards. The marsh was crossed by creeks.

R.89 Westfield (35/252612) 1961-68

A terraced grass marsh, adjacent to the road, terminated in a deep erosion edge with hummocks of grass below. The grass hummocks were succeeded by a shore of muddy sand and pebbles, in turn, succeeded by sand sloping down to the bed of the Esk Channel; later in the period, deposition of sand and channel movement northward occurred.

R.90 Port Carlisle (35/242643) 1961-64

A confused area of shore much affected by attempted development in the 19th century. This abortive enterprise is commemorated by a silted canal and ruined breakwater. To the west, a grass marse ended in a deep erosion step which was succeeded by a shore of muddy sand. The jumble of stone from the ruined harbour was colonised by the algae *Fucus spiralis*, *Fucus vesiculosus* and *Fucus ceranoides*. Beyond this area, wracked by Man, the normal fine sands of the bed of the Solway took over.

R.91 Bowness, Pottery House (35/218625) 1961-68

A roadside verge, colonised by gorse, lay above a terraced grass marsh bounded on the western side by the old Solway viaduct. Early in the period 1961-63, erosion occurred here, but, subsequently, accretion at the edge became active once more; especially near the viaduct, where widespread development of *Puccinellia* hummocks was found; pans were also present. Below the marsh,

a long sloping shore of sand, which became progressively less silty, stretched down to the Solway Channel. Considerable sand deposition occurred in the period 1964-68.

At the northern end of the viaduct embankment, colonisation by the algae *Fucus spiralis*, *Ascophyllum nodosum* and *Fucus vesiculosus* occurred.

R.92 Biglands House (35/208619) 1961-68

A roadside verge, colonised by gorse, lay above a terraced grass marsh, characterised by pans, creek development and *Juncus* colonisation; on the eastern side it was bounded by the old Solway viaduct, and was terminated by an erosion edge. Early in 1964 an accretion edge developed. Below the erosion/accretion edge, soil which became progressively less muddy, sloped gently down to the Solway Channel.

MORICAMBE

R.93 Cardrunk (35/169588) 1961-64

A wide, gently sloping terraced grass marsh led on to the extensive sand flats which sloped down to the Silloth Channel. A little development was evident at the seaward edge of the merse in 1961, but by 1963 significant accretion was taking place. The merse showed pan development and was crossed by a stream.

This station lay at the northern entrance to Moricambe. Colonisation by *Juncus* occurred at the top of the grass merse.

R.94 Anthorn (35/192158) 1961-68

A narrow terraced grass marsh, adjacent to the road, led to a shore of muddy sand which sloped down to the bound shingle bed of the R. Wampool. On the further side of the Wampool an extensive bed of fine sand was present; this led to the former deep erosion edge of Newton Arlosh Marsh. Stones on the Anthorn shore were colonised by *Ulva lactuca* and *Fucus spiralis*.

By 1967, a sand bar had developed across the Wampool, to the north of Anthorn, and by late 1968, a diversion of the Wampool towards Newton Arlosh Marsh had occurred.

R.105 Newton Arlosh Marsh (35/198580; 35/175551; 35/174560) 1961-68

A terraced, grass marsh crossed by creeks and which had pan development. Erosion edges were marked everywhere except at the north-western tip (35/174560) where the marsh was clearly evolving and accretion occurred. In 1964, marked accretion had taken place at (35/198580) also. This accretion continued throughout the period 1964-68.

R.95 Whitrigg Bridge, Kirkbride (35/228576) 1961-69

The River Wampool estuary meandered between Whitrigg Marsh on the north side and Angerton and Kirkbride Marshes on the south side, but be-

cause of the narrow, deep channel there was comparatively little sand accretion below the edge of the grass marsh. However, it is of interest that brushwood fascines placed to the west of the bridge during 1961, arrested sediment from a marine source to such an extent that, by the end of May, 1963, only the tops of the fascines were visible; a considerable deposition of sediment had therefore occurred. The storm of March, 1967, caused considerable sand deposition upon the merse; since then deposition around fascines seems to be in a state of equilibrium.

R.96 Salt Cote Marsh (35/1844533 to 35/177532) 1963

A terraced, grass marsh crossed by creeks and which had pan development. Erosion edges were marked everywhere in the stated areas, except at the north-western tip (35/174550), where the marsh was clearly still evolving and accretion occurred. Erosion in the area (35/175551) towards (35/174560) was enhanced by the presence of the channel of the Waver which ran immediately alongside it. Sand both at Salt Cote (35/177532) and in the region (35/175551) was found to have quicksand properties.

R.97 Winding Banks, Raby Cote (35/169523) 1963

At the southern end of the marshes stretching to Skinburness, a narrow terraced grass marsh ended in a steep fluvial erosion edge which formed the left bank of the River Waver.

R.98 Calvo Marsh (to Waver Channel) (35/167542) to (35/175556) 1963

A zone colonised by Gorse, Wild Rose and *Juncus* led to an extensive, terraced grass marsh crossed by creeks and showing pan development. This marsh terminated in a deep erosion step, where it was clear that the period of marked accretion, described by Dixon et al (1926), had been succeeded by a period of erosion (contrast Skinburness Marsh below).

Below the erosion edge a vast area of clean, fine sand extended to the channel of the Waver.

R.99 Skinburness Marsh (to Tickhill Scar) (35/135551 to 35/150565) 1963

An extensive area of terraced marsh, marked by creek and pan development, terminated in an accretion edge which was colonised by precursors and showed signs of rapid development. A stunted growth of *Salicornia* spp. was abundant in the grass near the accretion edge which marked by zones of *Salicornia* alone and algae precursors. From the accretion edge, sandy flats extended down to the stony bed of the Waver at Tickhill Scar.

The marked development of the accretion edge to Skinburness Marsh had clearly replaced the period of erosion described by Dixon et al (1926). It is of interest that in the period described by these authors Skinburness Marsh was eroding and Calvo Marsh was accreting, whereas in 1963, the rôle of each was reversed.

R.100 Grune Point (35/140570) 1961-64

Grune Point is at the end of a shingle spit currently undergoing erosion, perhaps due to the coast works at Silloth. It shelters the north-western end of Skinburness Marsh which should not, however, be regarded as a shingle spit marsh. Probably the only true example of such a marsh is to be found on the north-western side of the Grune shore. This marsh had developed between a series of shingle hooks produced by longshore drift acting upon the main body of the shingle spit. It showed a series of distinct stages ranging from primary colonisation to that of colonisation by true land-dwelling forms.

At approximately the level of high water neaps, the shingle gave way both on the Moricambe and Solway shores to muddy sand, while on the north-west side and from the tip of Grune Point, the soil grade increased in size towards the channel.

Above extreme high water mark, the shingle spit was colonised by grass, trees and other land forms, while, towards its base, fields were worked.

R.101 East Cote, Silloth (35/116551) 1961-68

This shore was much affected by sea-defence works, e.g. a concrete sea wall and wooden groynes. It is essentially a shore of shingle and bound shingle, with some patches of sand at low water mark. Accretion of sedimentary materials against the groynes indicated that there was a longshore drift in a north-easterly direction; it would, however, appear to be weak. It must be recognised that this may be a false impression, due to the effect of such works, further to the south-west, starving these shores of material. Such works as noted above may be responsible, in part, for the erosion of Grune Point, since they prevented the transport of material to this point. The groynes were sparsely colonised by the algae *Fucus spiralis* and *Fucus vesiculosus*. *Porphyra* sp. occurred on stones towards the low water mark. Deposition of fine sediment occurred intermittently.

R.102 Silloth (35/106536) 1961-67

A shingle beach crossed by groynes which gave evidence of a weak north-easterly longshore drift.

Colonisation by the algae *Fucus spiralis* and *Fucus vesiculosus* occurred.

R.118 Lee's Scar (35/101524) 1967-68

Well developed dunes gave way to a sandy shore marked by bars, including a high one towards L.W.M. This is part of the extensive area of sands with occasional scar ground stretching north from Dubmill Point to Silloth Harbour. This ground, particularly at Beckfoot, represents the best feeding for fish on the south side of the Solway.

R.103 Beckfoot (35/090493) 1961-68

At the northern end of the area of dunes which reached a peak of development at Mawbray Bank. A dune type of substratum, colonised by marram grass,

at the head of the shore, gave way to the top of a shingle slope which was succeeded by sand flats sloping gently to the bed of the Solway. Scar grounds occurred widely in the sands of this shore, e.g. Beck Scar, Lownagstock Scar and Stinking Crag. Considerable movements especially late in the period appear to have impoverished the fauna.

R.116 Mawbray (35/080469) 1967-68

Well developed dunes gave way to a sandy shore which showed appreciable movement in the period considered. The dune land here, in addition to that to the north, and around Allonby showed considerable indications of misuse.

R.117 Stinking Crag (35/084480) 1967.

See Beckfoot above.

R.104 Dubmill Point (35/076462) 1961-68

To the south of the point was the large boulder strewn Dubmill Scar, while to the north intermittent scars were present in the sand. At the head of the shore at Dubmill Point, there were coast defence works—sea wall and groynes—and the substratum was shingle. To the north dunes colonised by marram grass were present. Material collected by the groynes indicated a weak north-easterly longshore drift. Coal both in the shingle and sand is a possible indicator of a drift in this direction. Away from the scar ground, or among the boulders, a sandy shore sloped gently down to the Solway.

Note—This paper will be continued in a future number of the transactions.—Ed.

SOME ASPECTS OF BIOLOGY OF *CARCINUS MAENAS* (L)

II SURVIVAL AT LOW SALINITY

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INTRODUCTION

The green shore crab, *Carcinus maenas*, is an important predator of animals dwelling in inshore waters. In some cases, indeed, it could affect the economics of current efforts to farm fish, around our coasts.

Possible methods of control were discussed briefly by Perkins (1967). He considered a knowledge of the ability of this animal to withstand prolonged exposure to low salinity, i.e. ≤ 5 ‰, pertinent to this problem. Studies of osmoregulation have shown that *Carcinus* can maintain the concentration of its body salts above that of the environment at low salinity. However, the duration of this resistance to adverse conditions is unknown. Kinne (1964) considered Broekhuysen (1936) to have shown *Carcinus* to tolerate salinities as low as 4 ‰ for long periods but this appears to be a misinterpretation of the latter's results. Moreover, it is of little help to the control problem.

In 1968, a shore study followed by laboratory experiments, based on it, were undertaken and the results described below.

Results and Discussion

At the site chosen, fresh water ran out across the shore and gave low salinities in every exposure period that the shore was visited. Fixed stations were initiated at large stones capable of sheltering crabs in this permanently wet area. At each visit, these stones were turned over carefully. The temperature and pH of the water were measured immediately. All crabs were taken for subsequent counting and measurement. Water samples were taken for determination of salinity, by hydrometer, in the laboratory.

Beneath the stones selected, the presence of crabs seemed to be dependant upon the nature of the shelter offered, rather than the salinity, although larger numbers were found at salinities ≥ 10 ‰. The crabs found had a mean carapace width of 11 mm. (range 2-32 mm.): 50 % fell in the range 9-13 mm. Occurrence in salinities of 1.4-3.2 ‰, at 8.0-11.0°C, was common; a single animal was found at a salinity of 1.2 ‰, at 5.5°C. The stations chosen were all situated in the *Fucus spiralis* zone which is exposed for about 8 hours in every tidal cycle. Generally, *Carcinus* does not move about the shore in daylight; similarly, no movement away from these low salinity sites was noted. Therefore, it seems evident that it is normal for *Carcinus* to shelter in such conditions for up to 8 hours. The pH ranged from 6.3 to 8.4 and had no obvious effect upon *Carcinus* distribution.

In the laboratory, crabs were subjected to a range of salinity from 1.0 to 8.4‰, mean temperature 8.4°C, range 6.6-10.0°C. All were taken to coma and tested for recovery (see Perkins 1967). Before discussing results, it must be appreciated that the tap water, used in dilution, contained organic matter which, by hydrometry, gave a salinity reading equivalent to 1.0‰. Although this material would affect osmosis, it is not equivalent to a solution of salt giving the same reading. Therefore, the salinity quoted is slightly higher than the true salinity.

Salinities slightly less than 2‰ were lethal rapidly, Table 1. A dramatic improvement in survival, i.e. from 1 to 34 days, occurred when the salinity was raised to between 2 and 3‰. Size was important in survival up to 6‰, but at 8‰ large and small animals survived equally well. To avoid complications, these animals were not fed, but the survival at 8.0‰ compared well with the 97 days for starved animals kept at 30‰, Perkins, Williams and Gorman (1965).

A simple leaching out experiment, which requires field confirmation, indicated that the persistent low salinity required to kill *Carcinus* rapidly, cannot be attained easily in fish farm practice.

TABLE 1
Survival to Coma of *Carcinus maenas* exposed to lowered salinity

Salinity	n	Mean Size	Mean days to 100% coma
		mm.	
1.0	6	40	1
1.8	15	17	1
2.0	6	15	1
3.0	16	18	34
4.0	6	14	36
	15	16	36
	7	48	76
6.1	15	25	62
6.4	6	12	48
8.0	18	12	76
8.4	6	46	76

n = no. in aliquot

N.B.—No death in controls at 29-30‰

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EXCAVATION OF TWO CHAMBERED CAIRNS AT MID GLENIRON FARM, GLENLUCE, WIGTOWNSHIRE

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SUMMARY

MID GLENIRON I. Evidence from excavation suggests that this is a cairn of multi-period construction. The first structure appears to be a small, oval cairn which encloses a rectangular chamber opening from the north. A second cairn, also containing a rectangular chamber with access from the north, was built close to the entrance of the earlier cairn. A façade, built of orthostats and dry-stone walling, was constructed subsequently so as to flank the entrance to the northern chamber. This appears to have formed part of the final stage of construction, which also involved the enclosing of the two earlier cairns within a straight-sided cairn. A third, lateral chamber, which opens from the west, also appears to have been built as part of this final stage of construction. A few small sherds of Neolithic pottery and two flint artefacts were found in the northern part of the cairn. Nine cremations in cinerary urns had been inserted in the body of the cairn.

Immediately to the south of the long cairn are the remains of a badly disturbed burial cairn (Mid Gleniron A), probably dating from the Bronze Age. This is described elsewhere in these Transactions (cf. *infra* p. 91).

MID GLENIRON II. This also appears to have been of multi-period construction. The earlier structure is a small, oval cairn which encloses a very small rectangular chamber opening from the east. A larger rectangular chamber, opening from the south, was built up against the edge of the oval cairn, and its entrance was flanked by a shallow façade. The composite structure was enclosed within a straight-sided cairn, having a north-south orientation. Sherds of decorated and undecorated Neolithic pottery, some sherds of apparent Bronze Age date and flint artefacts were found.

To the south are the remains of a circular cairn with a closed chamber (Mid Gleniron B). This is described elsewhere in these Transactions (cf. *infra* p. 94).

The excavations described in this paper occupied four seasons between 1963 and 1966. Two interim reports have been published in these Transactions.¹ The decision to excavate at Mid Gleniron was influenced by five factors. **First**, two long cairns, each with a forecourt, lay within 200 yards of each other, and therefore offered an opportunity of examining any possible relationship which might have existed between them. **Second**, each cairn had more than one chamber, and this allowed the possibility of testing the hypothesis that some such cairns may have been of more than one period of construction. **Third**, it

1 J. X. W. P. Corcoran 1963; 1968.

seemed appropriate to attempt to establish whether there was any relationship between the two cairns and comparable structures in Galloway, particularly the two excavated tombs at Cairnholy (KRK 2 and 3),² the most easterly of known Gallovidian cairns. **Fourth**, at the time when the excavation was planned, the problem of possible relationships between the chambered cairns of the Carlingford Culture in the north of Ireland and those of Galloway remained unsolved.³ It seemed appropriate to examine the two cairns at Mid Gleniron as they are situated near the coast and closer to Ireland than are comparable tombs in Galloway. **Finally**, it was hoped to establish whether or not there had been any connection between the builders of the two cairns and the users of Neolithic artefacts which have been found in some quantity in the sands of Luce Bay. Not all these aims were achieved, but the excavations at Mid Gleniron have provided data relevant both to chambered cairns of multi-period construction and to the origins of tombs of the Clyde group.

ACKNOWLEDGMENTS

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THE SETTING⁴

The two chambered cairns are situated on the land of Mid Gleniron Farm, 2½ miles N.N.E. of the village of Glenluce in Wigtonshire (fig. 1). Both cairns lie at an altitude of 275 ft. O.D. on a gently inclined bench of till, a little more than a half-mile to the east of the Water of Luce. To the west of this bench a series of fluvio-glacial and alluvial terraces mark the descent to the river's broad flood-plain, while to the north, south and east the ground

² Letters and figures in parenthesis refer to inventories of chambered tombs in western Britain published in T. G. E. Powell et al. 1969, 273-328 where full references may be found. An explanation of the code-letters is given on pages xix-xxi of that publication.

³ J. X. W. P. Corcoran 1960, 130-32.

⁴ This section is based on a geomorphological appreciation of the immediate environs of Mid Gleniron kindly prepared for the writer by Mr Andrew Gibb.

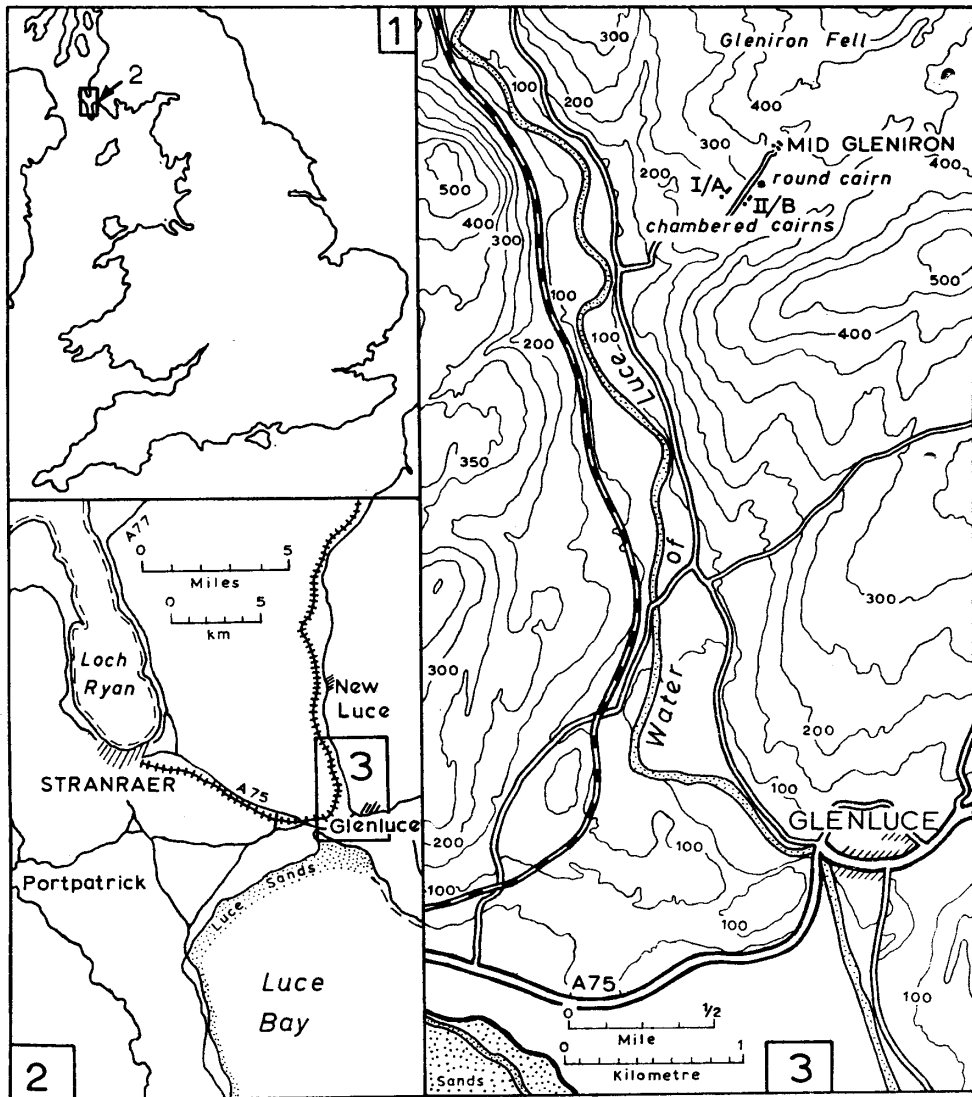


Fig. 1— Location Map.

rises to form an intermediate plateau surface lying between 300 and 700 ft. O.D., locally reaching a maximum elevation on Gleniron Fell of approximately 600 ft. O.D. The surface of this plateau is cut primarily across Ordovician and Silurian grits and shales, and is covered by hummocky, often discontinuous glacial drift, on which extensive areas of gentle gradient result in poor drainage.

On the improved land in the vicinity of the cairns, the composition of the local till may be seen to be a fairly friable, light and sandy loam, with many

stones. These stones vary in size from small pebbles, still present in considerable quantities in ploughed soil, to large boulders, upwards of 1 ft. in over-all dimensions. Large quantities are disposed in clearance cairns and dry-stone walls in the immediate vicinity. Igneous, metamorphic and sedimentary rocks may be identified, displaying considerable variation between angular, frost-shattered fragments and rounded, possibly water-rolled pebbles, suggestive of diverse origins. This diversity is reflected in the stone used in the construction of the cairns.

From the point at which the Water of Luce empties into Luce Bay to a position 6 miles upstream, one mile beyond its confluence with the Cross Water of Luce, a series of alluvial and fluvio-glacial terraces provide rich pasture, and in places intensively cultivated arable land. Apart from a single mound, Cairn MacNeillie, which lies at 160 ft. O.D. on the upper edge of the highest fluvio-glacial terrace (NGR NX 1725 6267) there are no known prehistoric remains on these potentially fertile terraces. This contrasts with abundant prehistoric remains on the higher ground to the east of the Water of Luce.

It is possible that some such prehistoric remains may have been destroyed by later agricultural activity on the lower terraces. It is more probable, however, that this apparent absence of prehistoric settlement was influenced by fluctuations of sea-level in Late Glacial and Post-Glacial times, attested by the presence at the mouth of the Water of Luce of 100 ft., 50 ft. and 25 ft. raised-beaches. On a world-wide scale the melting of ice-caps and valley glaciers released a volume of water which raised the levels of the oceans by several hundred feet. This eustatic rise of sea-level was compensated for locally by an isostatic rise of the land surface caused by the release of the weight of ice. Glacial readvance at times brought about a stabilisation of the two processes, and during these stable periods the so-called 'raised-beaches' were formed. The effect of these periods of stabilisation on the Water of Luce was to form a very effective bar across its mouth which, acting as a base level for the stream, brought about the accumulation of spreads of sand and gravel. Successive lowering of this base level encouraged fresh down-cutting by the stream, leaving the fluvio-glacial sands exposed as terraces.

There is little dating evidence for the upper raised beaches, but the formation of the 25 ft. beach is well documented. A radio-carbon date of 6159 ± 120 B.P. from Newton Stewart in Wigtownshire is derived from a middle strata of a deposit, the top of which lies at 23.8 ft. O.D.⁵ Marine organic remains, interbedded with mineral accumulations, suggest very variable estuarine conditions. It is also relevant to note in this context a date of 4740 ± 100 B.P. obtained from comparable deposits at Cushendun in Co. Antrim in the North of Ireland.⁶ While younger than existing dates for south-western

⁵ G. Jardine 1964.

⁶ H. Godwin and E. H. Willis, Cambridge University radio-carbon measurements III, *Amer. J. Sci., Radiocarbon Supplement III* (1961), 62.

Scotland, it compares with dates obtained from other parts of northern Britain. A third date of c.5500 B.P. from sediments in East Flanders Moss, Stirlingshire, gives a middle value to the possible range of dates.⁷

It is possible, therefore, that the higher fluvio-glacial and alluvial terraces, after inundation and re-emergence, remained either sufficiently saline or marshy, and so discouraged settlement or cultivation. The lack of appreciable gradient would support the latter hypothesis. Towards the mouth of the stream the prevalence of semi-estuarine conditions might have proved equally discouraging to potential settlers. A further possibility is indicated by the presence on both banks of the Upper Solway of numerous and extensive salt marshes, accumulated either at the head of bays, or behind spits and bars.⁸ A similar formation at the mouth of the Water of Luce, or behind the barrier represented by the 100 ft. raised beach, would have proved an effective deterrent to settlement.

These must remain hypotheses until an adequate series of soil-samples from the area have been analysed. Taken together, however, they suggest reasons for the apparent absence of early Neolithic settlement between Luce Sands and Mid Gleniron, particularly had the present flood-plain of the Water of Luce been under water at the time of early Neolithic colonisation.

MID GLENIRON I⁹

(figs. 2, 3, 4 and 5)

Prior to excavation the external appearance of Mid Gleniron I differed little from that described in the Royal Commission's *Inventory* for the county published in 1912.¹⁰ The cairn is built on a low ridge, and is orientated on an approximately north-south alignment. Including cairn material, which lay to the south of a lateral depression extending across the width of the cairn, it measured before excavation some 115 ft. in length. At the northern end, which was apparently 45 ft. wide, the upper part of four orthostats were visible, set in an arc, and seemingly formed part of the western side of a partially orthostatic and crescentic façade. To the south of the façade, but not contiguous with it, two large orthostats could be seen to form, together with a third smaller orthostat, part of the side-walls and the end-stone of a burial chamber opening from the north. There was a gap of 2 ft. 6 ins. between the façade and the northern ends of the orthostats, without visible evidence of intervening walling. Some 8 ft. to the south of the end-stone of the northern chamber, a lateral chamber opened from the west. To the south of this again, and 6 ft. south of the end-stone of the lateral chamber, were the remains of a third chamber, the entrance to which was hidden. The southern part of the cairn appears to have been disturbed since 1912, as the

7 J. B. Sissons 1967, 184.

8 J. R. Marshall 1962.

9 National Grid Reference NX 1870 6099.

10 RCAHM(S) Wigtown 1912, 94 (No. 260), fig. 65.

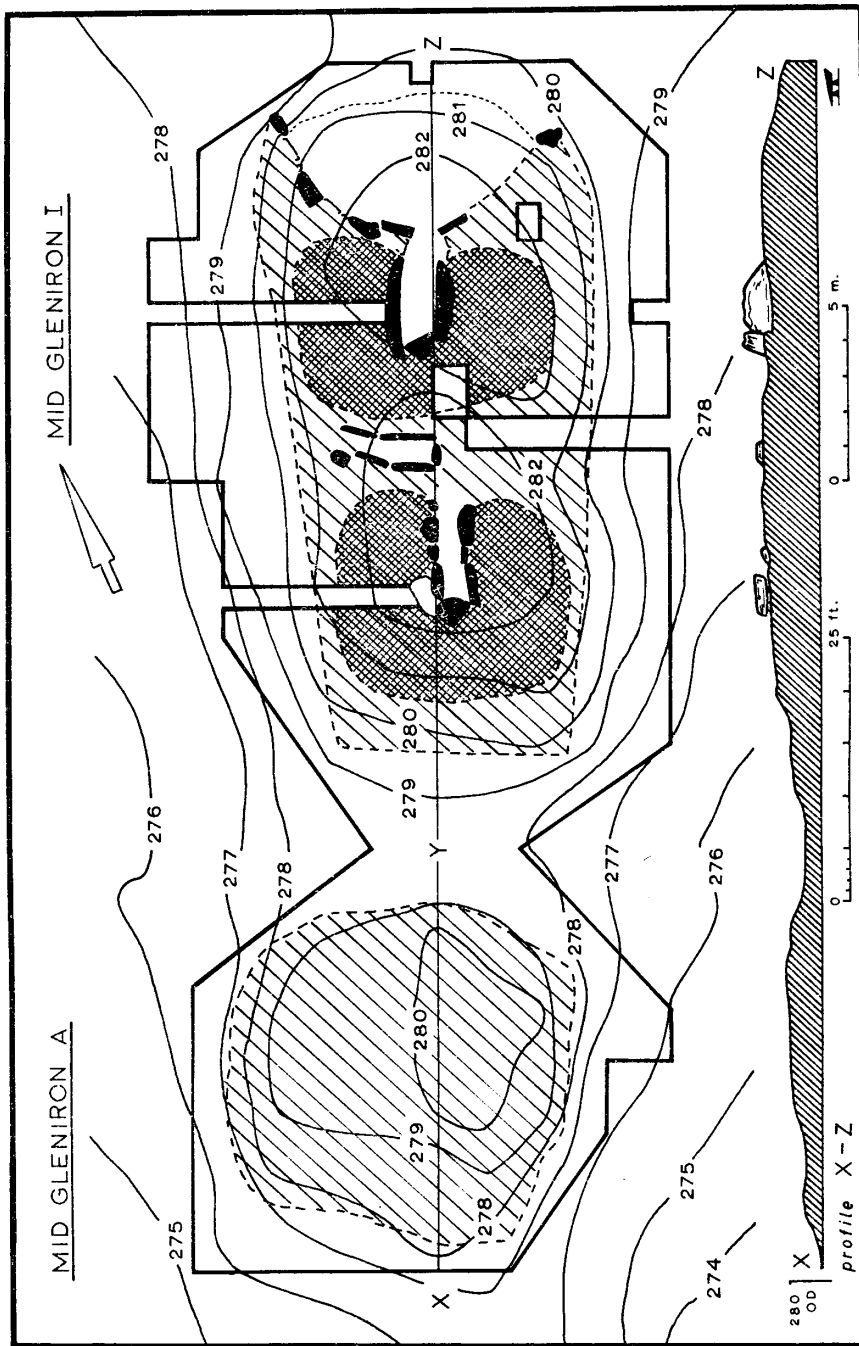


Fig. 2—Mid Gleniron I and A; Contour plan

position of a roofing stone, apparently belonging to the southern chamber, differed from that shown on the Commission's plan. Rather more of the southern chamber was visible in 1963 than was apparent in 1912, and it could be seen that the chamber was rectangular on plan, and apparently closed to the south.

The lateral depression lay 20 feet to the south of the end-stone of the southern chamber. Cairn material appeared to continue for a further 40 feet to the south of the depression, although apparently set on a slightly different axis from the main body of the cairn. At an early stage of excavation it was demonstrated that the depression marked the boundary between two independent cairns. The structure lying to the south of the depression was excavated in 1964, and was shown to have been an unchambered cairn. It may be referred to as Mid Gleniron A. An account of its excavation is printed elsewhere in the present volume of the *Transactions* (cf. *infra* p. 91).

DESCRIPTION

Although the first season's excavation was concentrated principally in the northern part of the cairn, cuttings made elsewhere in the mound at that time suggested that the southern chamber was contained within a smaller cairn, which subsequently was contained within the long cairn. This was later confirmed. As it appears that the southern chamber was the earliest of the three, it is convenient to describe first this chamber and its cairn.

Southern chamber and inner cairn

The chamber is rectangular on plan, is 9 ft. long internally, and has an average width of 2 ft. 3 ins. An attempt appears to have been made in recent times to remove one of the orthostats forming part of the eastern wall, as shown by its disturbed position and evidence of recent breakage. This may have been connected with the recent burial of a sheep, the bones of which were found among an infill of small stones. The eastern wall was built of three orthostats, and the western of four, the variation resulting from the use of orthostats of different sizes.

A large orthostat was placed at the outer end of each wall. When viewed from the north, and with a lintel and cairn material in position, the outer ends of these two orthostats would have presented a portal-like appearance, although the eastern (stone 6) is broad in relation to its height, and has an over-all length of 4 ft. 3 ins. The opposed stone 5 is more truly portal-like. Immediately to the south of stone 5 the side-wall is built of a low orthostat (4B), 2 ft. 9 ins. long and with an average height above floor level of 1 ft. 6 ins. Resting on it is a tabular block (4A), with a maximum thickness of 1 ft., which protrudes into the body of the cairn for a distance of 2 ft. (Pl. I, a). The construction is too massive to be regarded as dry-stone walling and, to a limited extent, resembles the arrangement at Clachaig (ARN 16) in Arran, where the

eastern side-wall is built of two orthostats, upon each of which a large slab was set in a vertical position.¹¹

At Clachaig, it may be supposed that this technique was used, in the absence of suitably large stones, to match the tall orthostats of the western wall, which had a maximum height of 8 ft. above the floor of the chamber. At Mid Gleniron I there would seem to have been little difficulty in obtaining in the immediate vicinity stone of modest dimensions to serve as a conventional orthostat. It is possible that this device was used to allow access to the chamber after the entrance was sealed. Stone 4A could have been removed by displacing the cairn material which partially covered it. As the orthostats on each side (3 and 5) are both a little taller than the combined height of 4A and 4B, it would not have been necessary to displace the roofing, if roofing stones covering this part of the chamber had been of sufficient length to span the gap between orthostats 3 and 5 and the opposite wall. There is no evidence, however, that the stone 4A had ever been removed in the manner suggested, although such a method of gaining access to a sealed tomb has been recorded elsewhere in Britain.¹²

The orthostats in the southern chamber are not set deeply into the subsoil. At most they stand in very shallow sockets, without packing stones. Some rest directly on the former ground surface. Stability was achieved by the choice of boulders, broad in relation to their length and width. The end-stone, for example, is a squat, flat-topped orthostat, triangular on plan.

Apart from one displaced roofing stone, lying to the west of the southern end of the chamber, there was no other evidence of roofing. From the position of this single roofing stone, it appears that it has been swivelled in recent times from its original position, which probably covered the area of the chamber adjacent to the end-stone. The length of the roofing stone would have been adequate to span the width of the chamber. There is no evidence of corbelling, and a series of stones comparable with the surviving roofing stone would have rested comfortably and securely on the side-walls, without any form of dry-stone walling. This would have allowed a headroom of between 2 ft. 6 ins. and 3 ft.

Paving survived undisturbed for most of the length of the chamber. Slabs of varying size were carefully arranged to provide almost complete cover for the floor of the chamber. Variations in thickness of the paving slabs and irregularities on the former ground surface were compensated for by placing smaller stones beneath the paving. In this manner a level surface was achieved (Pl. II, a).

The southern chamber was enclosed in an oval cairn, the overall dimensions of which are 21 ft. from east to west, and 20 ft. from north to south. The cairn is carefully built from rounded boulders, with a well-defined outer edge which, although crude in appearance, attains in places the stability of dry-stone walling (Pl. I, b). In the eastern sector, and close to the outer limits of the

¹¹ T. H. Bryce 1902, 86-87.

¹² e.g. in the eastern chamber at Dyffryn Ardudwy (MER 3), Merioneth: T. G. E. Powell 1963, 22,

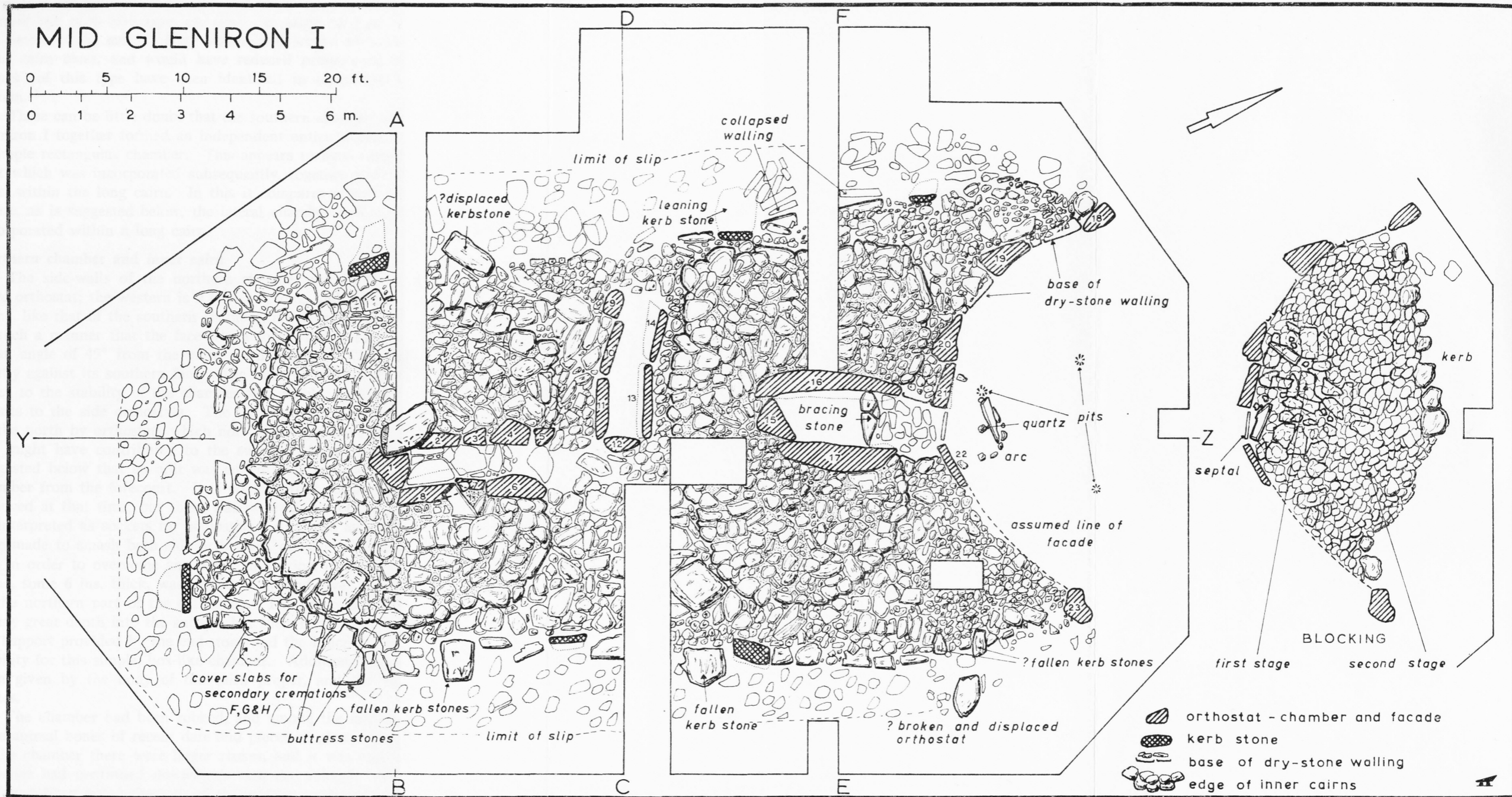


Fig. 3—Mid Gleniron I; Plan.

cairn, two flat slabs, both considerably larger than the stones forming the main mass of the cairn structure, are set at an angle of approximately 45° towards the centre of the cairn. They would have served to counteract thrust of the main cairn mass, and would have reduced pressure on the kerb. 'Buttress stones' of this type have been identified in chambered cairns elsewhere in Britain.¹³

There can be little doubt that the southern chamber and inner cairn at Mid Gleniron I together formed an independent entity, a small oval cairn enclosing a simple rectangular chamber. This appears to have been the initial structural unit which was incorporated subsequently, together with the other two chambers, within the long cairn. In this it compares closely with Mid Gleniron II where, as is suggested below, the lateral chamber and its enclosing cairn were incorporated within a long cairn.

Northern chamber and inner cairn

The side-walls of the northern chamber are each composed of a single, large orthostat; the western is 9 ft. 6 ins. long, and the eastern 8 ft. The end-stone, like that of the southern chamber, is triangular on plan. It is set askew in such a manner that the face which forms the end-wall of the chamber lies at an angle of 45° from the more usual position. Cairn material was packed tightly against its southern face. The massive solidity of this orthostat contributes to the stability of the chamber as a whole, particularly in the support it affords to the side orthostats. The latter do not appear to have been flanked to the north by orthostats which not only might have served as portal stones, but might have contributed to the support of the roof and side-walls. It is suggested below that an adit was added later in order to allow access to the chamber from the forecourt. It is possible that portal stones might have been removed at that time, but there was no evidence of any hollows which might be interpreted as sockets for orthostats. Although an attempt appears to have been made to smash both side orthostats, damage is slight.

In order to overcome any potential vertical instability a large, flat bracing stone, some 6 ins. thick, was placed at ground level to act as a basal support to the northern part of the orthostats. The orthostats themselves are not set to any great depth into the subsoil, but their relatively flat bases, together with the support provided by the end-stone and the bracing stone, ensured adequate stability for this simple, box-like chamber. Additional support would also have been given by the body of the cairn proper, and the weight of the roofing stones.

The chamber had been robbed, and among the infill of small stones there were animal bones of recent date and pieces of glass. Towards the lower part of the chamber there were larger stones, and it was apparent that earlier disturbance had continued downwards into the subsoil. A very small sherd of Beaker pottery lay at the foot of the western orthostat, and a large flint point was found in the lower infill.

¹³ e.g. at Tulach an t-Sionnaich, Caithness: J. X. W. P. Corcoran 1966, 10.

There is no surviving evidence of roofing. The greatest height of the western orthostat is 4 ft. 9 ins., and of the eastern 4 ft. 6 ins., which would have allowed adequate headroom. The greatest surviving height of the slightly damaged end-stone is also 4 ft. 6 ins. As the average width of the chamber is 3 ft. 6 ins., it is possible that this gap could have been closed by roofing slabs, without corbels. Neither side orthostat, however, has a flat top. Both have a curved upper surface, when seen from the side, the highest point being approximately the mid-point of each orthostat. In order to provide a level seating for the roofing stone, it would have been necessary to fill with small stones the gaps between the under surface of the roofing and the upper surfaces of the orthostats.

It would appear that adequate roofing for this chamber could have been achieved only by the use of a single capstone. Such a stone would have rested satisfactorily on the highest part of the upper surfaces of both side-walls and the end-stone. To prevent any tendency towards tilt at the entrance, where both side orthostats have a pronounced downward slope, smaller stones could have been positioned between the capstone and the orthostats. The weight of the capstone would also have contributed to the stability of the dry-stone walling. Minimum dimensions for such a capstone would have been 8 ft. 6 ins. long and 5 ft. wide. That stones of this size were available is demonstrated by the size of the two side orthostats, which are of similar dimensions.

Had more than a single capstone been used, it is difficult to visualise the manner in which the outer part of the chamber could have been roofed. From a point adjacent to the bracing stone northwards, the upper surface of each orthostat slopes downwards to such an extent that it would have been difficult, if not impossible, to retain in position, even with the aid of dry-stone walling, any roofing stone which was not supported by the end-stone. There was no evidence that the entrance had been flanked by portal stones. Had such portals existed, it would have been possible to employ more than one roofing stone. It is possible, however, that the outer part of the chamber was not roofed, the outer part of the side orthostats perhaps projecting to serve as pseudo-portals. The bracing stone lies at the point at which the downward slope of side orthostats becomes pronounced, and it is possible that this stone, which performed a necessary structural function, also served as a sill. Of the two suggestions, the use of a single capstone appears preferable.

The northern chamber is enclosed within a small cairn of oval plan, which curves inwards to the original entrance of the northern chamber. To the east, the plan of the outer limits of the cairn follows a regular curve. Southern and western edges are rather flattened, and the north-western and south-western limits are somewhat angular. The overall dimensions are 23 ft. from east to west and 17 ft. from north to south. The cairn is therefore wider than it is long.

The flattening of the southern edge may have been occasioned by a desire to prevent encroachment on the entrance area of the southern cairn, assuming

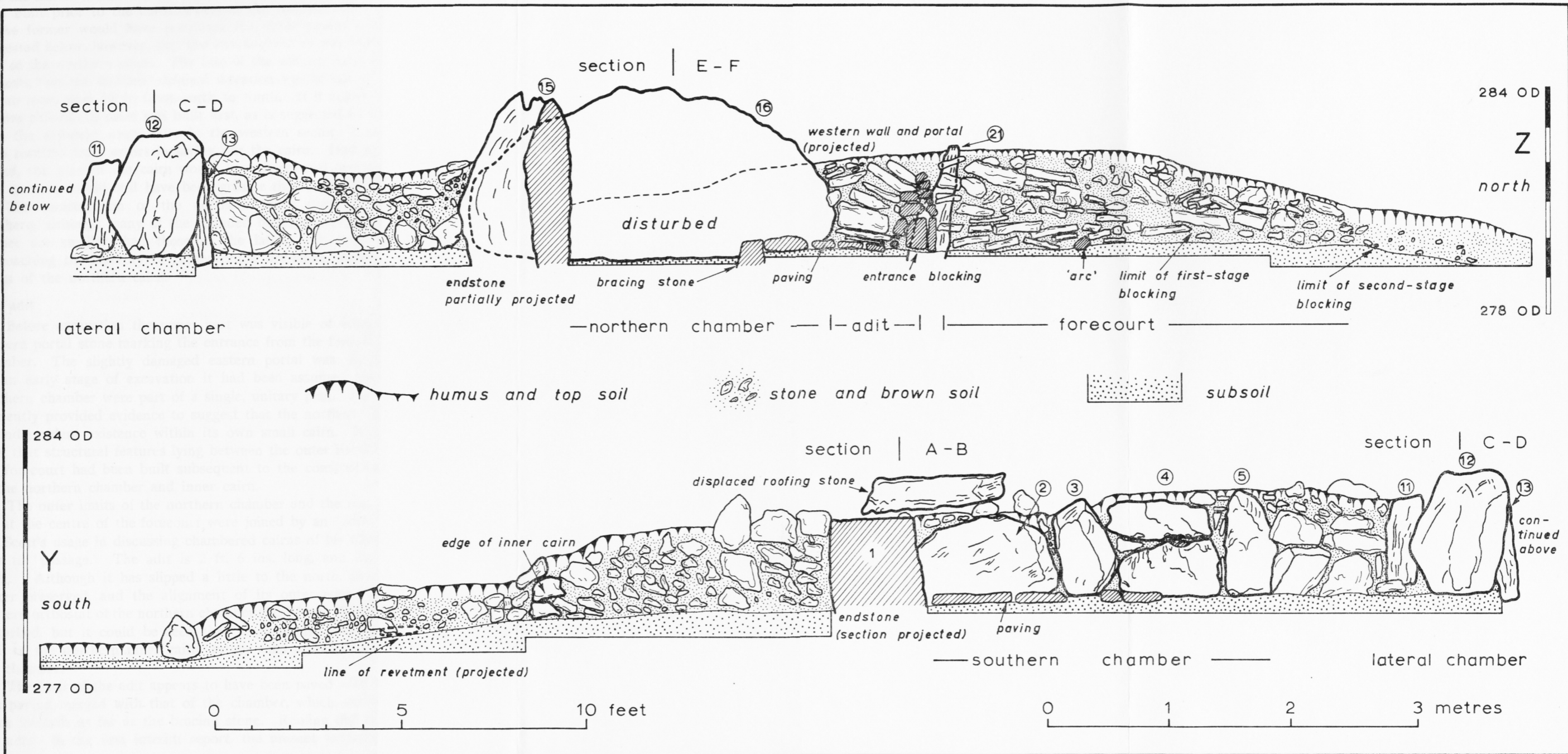


Fig. 4—Mid Gleniron I; Longitudinal section.

that the latter was already in existence. Alternatively, had the lateral chamber been built prior to the construction of the northern inner cairn, the presence of the former would have restricted the space available for the latter. It is suggested below, however, that the lateral chamber was built after the construction of the northern cairn. The line of the eastern curve of the latter further suggests that the builders' original intention was to construct a cairn, measuring no more than 17 ft. from north to south. If it could be assumed that the eastern side of the cairn was built first, as is suggested by its regularity of plan, then the apparent irregularity in the western sector, if not deliberate, might have resulted from errors in laying out the cairn. Had symmetry been maintained, the plan of the cairn would have been oval, but the dimensions from east to west would still have been greater than from north to south.

The construction of the northern inner cairn resembles that of the southern, although many of the rounded boulders which form the body of the former are smaller than those of the latter. A well defined kerb, again approaching the stability of rather crude dry-stone walling, defines the outer limits of the northern cairn.

The adit

Before excavation the upper part was visible of what appeared to be the western portal stone marking the entrance from the forecourt into the northern chamber. The slightly damaged eastern portal was uncovered subsequently. At an early stage of excavation it had been assumed that the forecourt and northern chamber were part of a single, unitary plan. Further excavation subsequently provided evidence to suggest that the northern chamber had enjoyed an independent existence within its own small cairn. It was apparent, therefore, that structural features lying between the outer limits of the chamber and the forecourt had been built subsequent to the construction and probable use of the northern chamber and inner cairn.

The outer limits of the northern chamber and the rear of the portal stones set at the centre of the forecourt were joined by an 'adit.' This term, following Scott's usage in discussing chambered cairns of his Clyde type,¹⁴ is preferable to 'passage.' The adit is 2 ft. 6 ins. long, and its walls are dry-stone built. Although it has slipped a little to the north, the western wall is the better preserved, and the alignment of its outer edge continues that of the western orthostat of the northern chamber (Pl. III, a). The eastern wall was more disturbed, but it could be seen that its southern limit was built against the kerb of the northern inner cairn, rather than against the eastern orthostat of the chamber.

The floor of the adit appears to have been paved with small, flat slabs, and this paving merged with that of the chamber, which survived for a short distance inwards as far as the bracing stone. Roofing did not survive *in situ* in the adit. In the first interim report, the present writer suggested that rudi-

¹⁴ J. G. Scott in T. G. E. Powell et al. 1969, 184.

mentary corbelling may have been used.¹⁵ Flat stones projecting into the adit, which had been interpreted as corbels, were recognised subsequently to be the upper and slightly displaced courses of the dry-stone walling of the adit. As the average width is 4 ft. 6 ins., the adit could have been roofed by a flat slab or slabs resting directly upon the side-walls, which survived to a height of 2 ft. 6 ins. The western portal stone is 2 ft. 9 ins. high. It is probable, therefore, that the adit had a low roof set at a height of approximately 2 ft. 9 ins. above floor level, and so providing the chamber with a short, low entrance.

As the absence of roofing suggests, the adit had been disturbed, although not to the depth of the disturbance of the greater part of the northern chamber. Among the infill of small stones and soil there were a few sherds of undecorated and decorated pottery, apparently Neolithic. Some very small sherds lay under the paving.

If a reason, other than ritual, is sought for the construction of the adit, it should perhaps be connected with the plan of the façade. The overall plan of comparable façades in south-western Scotland vary from the flattened form of Cairnholy I (KRK 2) to the semi-circular setting of Carn Ban (ARN 10). The long axes of the portal stones set at the centre of the façade, however, remain constant in that they usually lie at an angle some few degrees less than a right angle to the longitudinal axis of the cairn. It has been seen that the kerb of the northern inner cairn curves inward to the ends of the two side orthostats. It would therefore have been impossible to set the central orthostats of the façade, which are the portals, immediately adjacent to the side orthostats without producing a forecourt of rather funnel-shaped plan. In order to maintain a relatively flat alignment of the façade across the entrance, it was necessary to place at least one of the orthostats adjacent to the portals in a position contiguous with the kerb, but at a point before the latter curved inwards to the chamber.

The choice of rather thick stones for some of the orthostats of the façade perhaps resulted in a lengthening of the adit. Stone 20, the maximum thickness of which is 1 ft. 9 ins. is set contiguous with the kerb of the northern inner cairn at the point where the latter begins to curve inwards to the entrance. Had an orthostat of a thickness comparable with the adjacent portal stone (21), which has a maximum thickness of 1 ft. been used, the length of the adit might have been reduced proportionately.

The forecourt

Reference has been made to the variation in plan of the façades of some chambered cairns in south-western Scotland. Although the eastern half of the forecourt of Mid Gleniron I has been disturbed, it is apparent that the plan of the forecourt as a whole was semicircular rather than flat. The surviving orthostats, from the eastern portal stone (22) to the outermost stone in the

¹⁵ J. X. W. P. Corcoran 1963, 102, fig. 2.

western half of the façade (stone 18), together with their intercalary dry-stone walling, are set on an arc which almost approaches a precise quarter-circle (Pl. III, b). Disturbance of the eastern half of the forecourt apparently resulted in the removal of orthostats other than the eastern portal (stone 22) and the weathered stump of the outermost orthostat (stone 23). It was not possible to identify with certainty the sockets of the putative missing orthostats, although one possible hollow area, on which an orthostat may have stood, was located. This absence of true sockets was not unexpected, as it was apparent in the western side of the forecourt that rather thick orthostats had been chosen, in order that their bulk would contribute to stability without the necessity of setting them in sockets. It was possible, however, to distinguish between the infill of the forecourt and the body of the cairn, as well as an area of disturbance which lay between the two. This permits the assumed line of the façade in the eastern sector to be drawn, and suggests that the forecourt was symmetrically planned. The maximum width (taken as the distance between the outermost stones) is 25 ft., and the depth (taken as the distance between the entrance and a line drawn between the outermost orthostats of the façade) is 10 ft. The spatial relationship of stone 23 to stone 18 (the outermost stones of the façade) suggests that the forecourt was planned symmetrically. In the disturbed eastern side of the forecourt there would have been space for two orthostats.

The western arc of the façade was constructed from orthostats and dry-stone walling. The innermost orthostat (stone 20) of the façade proper is contiguous with the western portal. A panel of dry-stone walling separates stones 20 and 19, and a similar panel separates the latter from the outermost orthostat. Assuming that the plan of the forecourt was symmetrical, there were three orthostats, in addition to the portal, and two panels of intercalary dry-stone walling on each side. In its original state the façade would have presented a balanced and pleasing symmetry of structural elements. The basal width of the surviving orthostats, excepting the outmost stones 18 and 23, is approximately constant at 3 ft. The width of the basal courses of the two surviving panels of dry-stone walling is similar. Although the tops of some of the orthostats are damaged, the three orthostats, excluding the portal, have a maximum height of 4 ft. above the original ground surface. It is not known to what height dry-stone walling was built, but the relatively vertical sides of the orthostats could have supported walling built for the greater part of their height. In common with many cairns having semi-circular façades of this type, the portal stones of Mid Gleniron I are lower in height than the remaining orthostats of the façade. It may be assumed, again in common with many chambered cairns, that the entrance to the chamber was low and narrow. A lintel set on the highest point of the northern portal (stone 21) would have given a head room of 2 ft. 9 ins.

Some slight evidence of what may be regarded as ritual activity was recovered from the floor of the forecourt. A circular lump of quartz, roughly

dome-shaped and some 8 ins. in diameter, lay on the longitudinal axis of the northern chamber, 3 feet to the north of the entrance. It was surrounded by a semi-circular setting of small stones set into the old ground surface. The diameter of this setting, 5 ft. 6 ins., was aligned on the portal stones. Lying at an angle within, and partially overlapping, this complex, was a slender stone a little more than 3 ft. in length, and, with two exceptions, quite unlike the remaining stone in the forecourt (Pl. IV, b). Immediately to the west of the first of these three pillar-like stones, there was a small pit dug into the subsoil. Two similar pits, one in each sector of the forecourt, were also identified. It seems possible that the three pillar-like stones may once have stood upright in the forecourt. Although there were many fragments of charcoal and two small patches suggestive of burning *in situ* on the former ground surface in the forecourt, including the westernmost pit, there was no evidence either of ritual hearths or other deposits.

Abraded fragments of what is probably undecorated Neolithic pottery were found, together with a little charcoal, close to the base of stone 18 at the western tip of the façade. The only artefact of note found in the forecourt is a fine round-nosed scraper (fig. 6, c). There were several lumps of quartzite in the forecourt, many found adjacent to the line of the façade. As quartzite occurred frequently in the body of the cairn, it seems improbable that it had any particular ritual significance.

The blocking of the northern chamber and forecourt

Although the construction of the long cairn almost certainly preceded the blocking of the forecourt, it is more convenient to describe the latter before describing the construction of the cairn.

The entrance to the northern chamber and its adit was sealed by a very carefully built blocking of dry-stone walling set between the two portal stones. Four thin, and one slightly thicker, slabs rested on a thin vertical stone, some 12 ins. high. By itself, this arrangement was not stable, particularly as the vertical stone was not set into the subsoil. Support was provided at the rear by a crude, but structurally sound, wall (Pl. IV, a).

When in position, the blocking of the entrance would have enhanced the appearance of the façade, in the balanced contrast of orthostats and dry-stone walling. It is not known for what length of time the entrance blocking remained visible before the forecourt blocking was placed in position. Had the northern chamber been used for successive burials, it is possible that the entrance was closed after each interment by dry-stone blocking of the type surviving from the final blocking. It might be suggested that such an arrangement may have served as the background for ritual activity involving the three possible standing stones in the forecourt.

The final blocking of the forecourt concealed all structural and any surviving ritual features. This blocking appears to have been built in two stages.

First-stage blocking comprised heavy, flat slabs, with an average width of 2 ft., and carefully placed in the area adjacent to the portals. It extended laterally on the western side as far as orthostat 20, which adjoined the western portal, and on the eastern side to a comparable position. It also covered the arc of small stones and extended on the longitudinal axis for a distance of 7 ft. from the portals.

The second stage consisted of smaller stones, having an average width of 9 ins. These were laid over the first-stage blocking and extended as far as the outermost orthostats of the forecourt. In the western half of the forecourt the second-stage blocking was delimited by a kerb of boulders which extended inwards from the outermost orthostat. Owing to the disturbance in the eastern half there was no comparable evidence, but it seems probable that the kerb was continuous, and marked the outer limits of the forecourt blocking.

The Long Cairn

Although the forecourt has been described as if it were an independent structural entity, it should be regarded as part of the structural and ritual modifications which enclosed two existing small chambered cairns within a longer cairn. The forecourt would appear to have been a necessary architectural and ritual embellishment.

The long cairn has been disturbed and robbed in several places, but sufficient remains to demonstrate that it was straight-sided and that the rear end was also straight. The greatest length is 61 ft., and the greatest width taken at a line extending through the portals in the forecourt, is 30 ft. On account of the destruction of the south-western corner, an estimate only of the width at the rear end may be attempted; this appears to have been 25 ft.

These dimensions reveal that the cairn tapers from front to rear, but reference to the plan (fig. 3) suggests that this may have been unintentional, and that a rectangular plan may originally have been envisaged. The eastern side of the long cairn, which lies approximately parallel with the axes of the inner cairns, meets the rear end at a right angle. Although the south-western corner has been destroyed, it must originally have been set at an obtuse angle, as the western side is not parallel with the eastern. The reason for this would appear to have resulted from a desire to build a cairn of a size no larger than that necessary to enclose two existing cairns within a third. Although the two inner cairns share a similar alignment, their axes differ, that of the northern lying a little to the west of the southern. Symmetry of plan was conditioned in the northern part of the cairn by the lay-out of the forecourt. The line of the eastern wall was similarly determined by the position of the southern cairn—if the intention had been to produce a straight-sided cairn, the present alignment was the only one which would skirt the kerb of the southern inner cairn. In positioning the western wall in a similar relative position, the builders perhaps unconsciously produced an alignment which was not parallel with the eastern,

the misalignment being caused by the offset position of the southern cairn in relation to the northern. It is shown below that similar considerations may have operated in the lay-out of the long cairn of Mid Gleniron II.

The structure of the long cairn in the area between its kerb and those of the inner cairns was composed of stones of varied sizes, and apparently placed in position rather less carefully and with rather more air-spaces than in the case of the inner cairns. Unlike the inner cairns, the construction of which involved consideration of structural stresses from the chambers, the long cairn was for the most part little more than a casing. In view of the difficulties attendant on the interpretation of the lateral chamber discussed below, it may be significant that cairn material surrounding this chamber, which was not enclosed within an inner cairn, is composed of stones larger than average for the long cairn. Cairn stones between the façade and the northern inner cairn, for example, are relatively small, as the broad based orthostats used in the forecourt had a stability of their own, and would therefore have required little support from the body of the cairn. A large, cuboid boulder, having a maximum width of 3 feet, was placed against the south-eastern arc of the northern inner cairn. Its purpose is unknown and is not paralleled elsewhere in the cairn.

The revetment of the long cairn is composed of uprights and dry-stone walling (Pl. Va, b). On account of disturbance and recent agricultural activity right up to the original edge of the cairn, the dry-stone walling survives for the most part only in its basal course. In the area to the west of the northern inner cairn, however, there was evidence of dry-stone walling which appears to have collapsed forwards. This suggests that in places the walling may have been built of as many as five courses. Elsewhere in the cairn, the surviving basal course was composed of flat stones of varying thickness so that the number of courses may have varied, assuming that the intention had been to build walling of constant height.

The average height above ground level of the upright stones is approximately 3 ft. 6 ins., and their widths vary from 2 ft. to 3 ft. Several lean forward and some were found prostrate, as they were not set firmly into sockets. On the eastern side the uprights appear to have been set in such a manner that their centres were spaced between 7 ft. and 8 ft. apart, although in one place, to the south-east of the northern inner cairn, two uprights were set adjacent to each other. Disturbance on the western side has destroyed most of the relevant evidence, but here, also, there appears to have been a similar spacing. The spacing of uprights along the southern end is unknown, but the presence, close to the south-eastern corner, of a single orthostat, suggests that uprights may also have been incorporated into the kerb in this sector. There is no evidence of an extra-revetment, although there was some slip from the cairns. The outwards leaning orthostats and the forward collapse of dry-stone walling argue against the use of extra-revetment. It is possible,

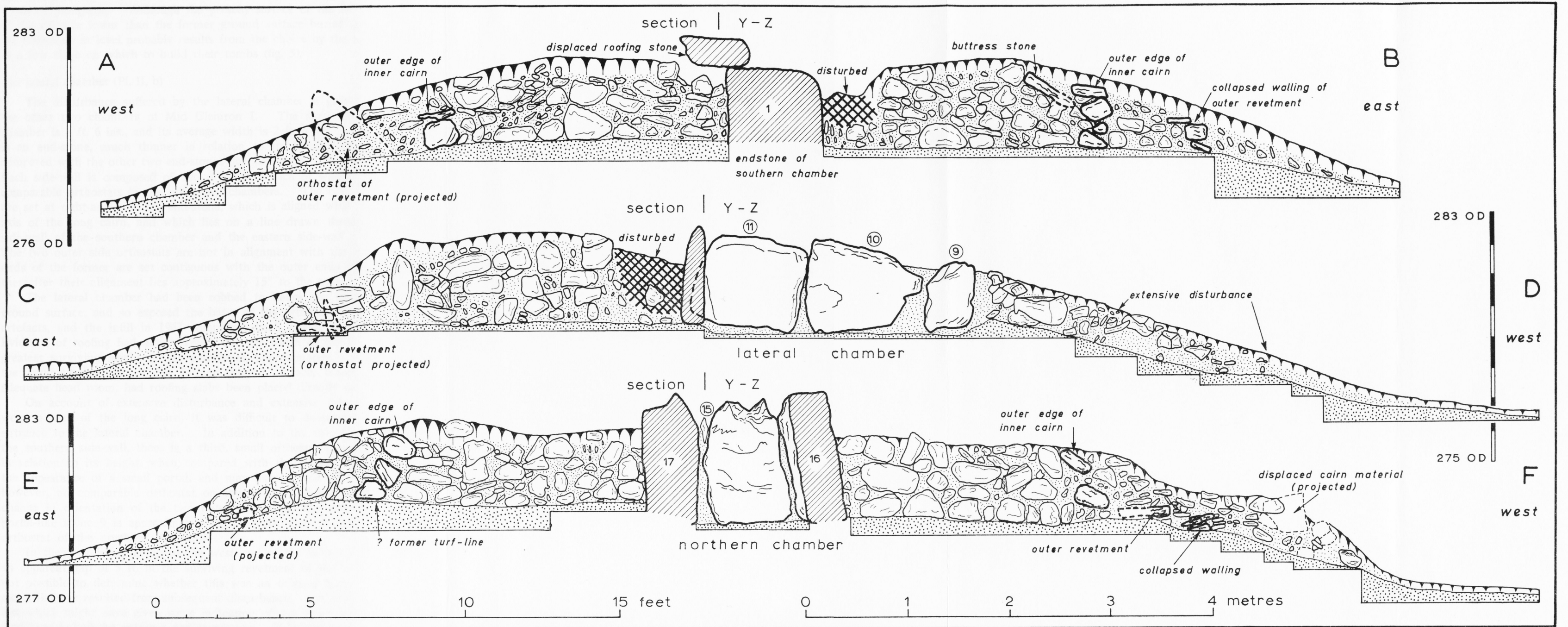


Fig. 5—Mid Gleniron I; Lateral sections.

but unlikely, that extra-revetment material might have been destroyed as a result of ploughing. Although the present surface of the field on each side of the cairn is lower than the former ground surface buried under the cairn, the difference in level probably results from the choice by the original builders of a low ridge on which to build their tombs (fig. 5).

The lateral chamber (Pl. II, b)

The disturbance suffered by the lateral chamber is greater than that of the other two chambers of Mid Gleniron I. The surviving length of this chamber is 8 ft. 6 ins., and its average width is 2 ft. 6 ins. At present there is an end-stone, much thinner in relation to its breadth and height, when compared with the other two end-stones but, like them, it is triangular on plan. Each side-wall is composed of two orthostats, each of which is thinner than comparable orthostats in the other two chambers. The two inner orthostats are set at right-angles to the end-stone, which is aligned with the longitudinal axis of the long cairn, and which lies on a line drawn through the western side-wall of the southern chamber and the eastern side-wall of the northern. The two outer side orthostats are not in alignment with the inner; the inner ends of the former are set contiguous with the outer ends of the inner, but thereafter their alignment lies approximately 15° to the north.

The lateral chamber had been robbed to below the line of the former ground surface, and so exposed the bases of the orthostats. There were no artefacts, and the infill in 1963 comprised small stones and clean, dry soil. Evidence of roofing had not survived, but the width of the chamber and the greatest surviving height of the orthostats, approximately 3 ft. 6 ins. above the assumed position of the former ground surface, would have allowed adequate head room, had roofing slabs been placed directly on the side-walls.

On account of extensive disturbance and extensive robbing in the mid-western area of the long cairn, it was difficult to determine details of the entrance to the lateral chamber. In addition to the two orthostats forming the southern side-wall, there is a third, small orthostat (stone 9), less broad in relation to its height, when compared with the former. This stone has the appearance of a small portal, and may have served as such. There is, however, no comparable orthostat on the northern side. Allowing for the change in orientation of the two outer orthostats, the western edge of the portal-like stone 9 is approximately in line with that of stone 14, the outer orthostat of the northern side-wall.

In the area immediately to the west end of the lateral chamber there is an apparent gap of 5 ft. in the surviving revetment of the long cairn. It is not possible to determine whether this was an original feature, or, as seems more likely, it resulted from subsequent disturbance. All evidence is similarly lost which might have given some indication of any structural features which may have linked the entrance and revetment. If it may be assumed that the

lateral had been built as part of the plan which produced the long cairn, some form of access to the chamber would seem appropriate. A narrow funnel-shaped 'forecourt' might be envisaged, but of this, and of any subsequent blocking, there is again no evidence. Finally, it is similarly uncertain whether, during the final stages of use of the tomb, the line of the revetment wall was built across the entrance area to the chamber, as in the comparable position in Mid Gleniron II.

The carving of a "cup-and-ring" which MacWhite recognised on one of the orthostats of the lateral chamber could not be identified.¹⁶ Near the upper right-hand corner of the northern face of orthostat 11, however, a number of solution holes were recognised. Some of the more weathered hollows resemble cup-marks, but the occurrence of solution holes elsewhere in the cairn, notably on the end-stone (15) of the northern chamber, but also on smaller stones forming the body of the cairn, suggests that such hollows are of natural formation.

HUMAN REMAINS

On account of disturbance, and more particularly the almost total clearance of the three chambers, the paucity of human remains which may be attributed to the primary use of the tomb was not unexpected. A few fragments of unburnt bone only were found in the southern chamber. As Mr Denston's identification suggests (cf. *infra* p. 87), the robustness of the fragments of bone suggests that they may have come from an adult male.

In his description of Mid Gleniron I written in 1873, the Rev. G. Wilson recorded that the southern chamber "was opened 30 years ago by the sappers and miners who found the thigh bones of a large man."¹⁷ Wilson's simple sketch-plan of the cairn does not include the roofing stone shown on the Royal Commission's plan,¹⁸ and it is probable that the cairn already had been robbed extensively by 1873. It is possible, however, that the unburnt bone found during the recent excavation belonged to the individual discovered by the sappers and miners around 1843.

A number of secondary cremations were found, particularly in the south-eastern part of the cairn. They are discussed below.

SMALL FINDS

Disturbance may also have resulted in the removal or destruction of artefacts, but a few small sherds and some flint artefacts appear to belong to the primary use of the tomb.

Pottery

a) **Undecorated.** A few small sherds and fragments of undecorated pottery were found in the forecourt, at the base of the westernmost orthostat of the façade (stone 18), and

¹⁶ E. MacWhite 1946, 70.

¹⁷ Society of Antiquaries Manuscript 578.333. I am indebted to Miss A. S. Henshall for referring me to this document.

¹⁸ RCAHM(S) Wigton 1912, fig. 65.

associated with evidence of burning. Other sherds lay in the upper and lower levels of the adit, in the northern part of the northern chamber, and below the paving. All are wall-sherds, the largest being $1\frac{1}{2}$ ins. (4.0 cm.) long. The average thickness is $\frac{3}{10}$ in. (7.0 mm.). There is neither evidence of the type of rim, nor of any suggestion of possible lugs or carination. The sherds from the forecourt have a sand-coloured outer and a grey-brown coloured inner surface, whereas those from the adit and northern chamber are brown-coloured on both surfaces. All these sherds, however, are similar in texture and

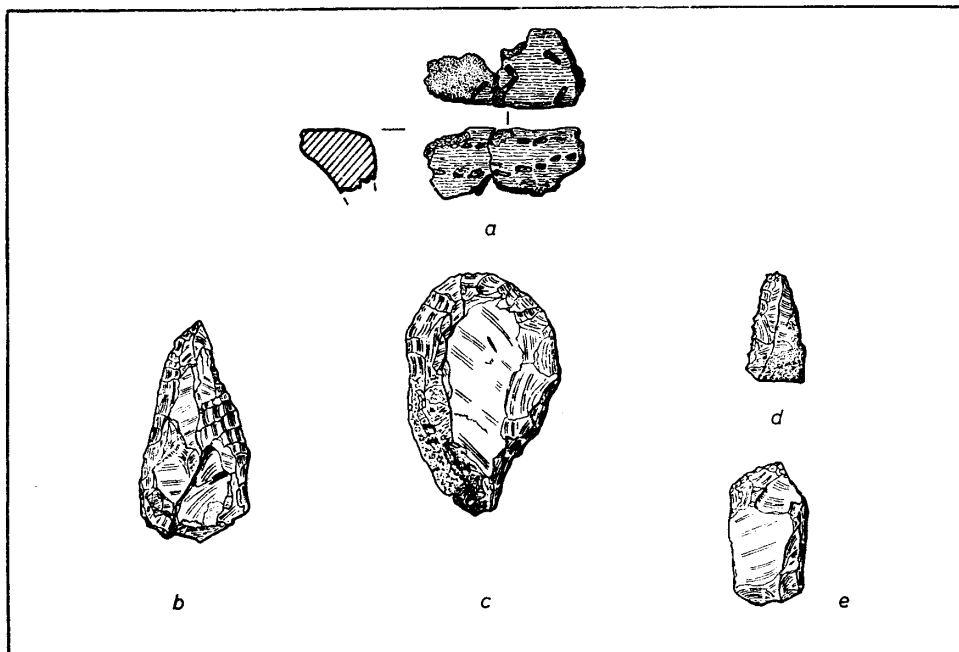


Fig. 6—Mid Gleniron I; Artefacts. Scale $\frac{1}{4}$.

filling. The fabric is sandy, and although most surfaces are abraded, one sherd has a smooth outer surface which possibly was burnished. The fine black body has a filler of very small fragments of quartz and a little mica. It is probable that these are sherds of undecorated Neolithic pottery.

Three undecorated wall-sherds display characteristics which differ from the former. Although these three also are abraded, they are much harder than the former, which might suggest that they had been fired at a higher temperature. The texture is sandy, has a grey-fawn coloured outer and a dark-grey inner surface. The filler is composed mainly of quartz with some mica. The sherds average $1\frac{1}{2}$ ins. (2.85 cm.) in length, and vary in thickness from $\frac{1}{4}$ in. (6.5 mm.) and $\frac{7}{16}$ in. (1.15 cm.). Although they were found in the adit of the northern chamber, they do not appear to belong with the fine, hard and undecorated rim-sherds found close by. The texture generally differs from the coarser cinerary urns discussed below, and the sherds appear to have come from an undecorated Neolithic pot.

In the body of the cairn to the east of the northern chamber three sherds of probable Neolithic pottery were found associated with the smashed and scattered remains of a cinerary urn (I). The texture of the former is sandy, and both the inner and outer surfaces are light-fawn in colour. Its outer surface is hard and smooth, and possibly

burnished. The very hard body has a filler composed of small particles, mostly of quartz and a little metamorphic crystalline rock, but not of mica. Although fragmentary and abraded, two are rim-sherds and suggest that there was a slightly out-turned and possibly lightly-rolled rim. It seems possible that these sherds had been thrown from the northern chamber. There is little doubt that they came from a small undecorated Neolithic pot, but of a different fabric from the sherds found in the chamber and the forecourt.

b) **Decorated.** Two sherds and a few fragments of rim were found at the northern end of the northern chamber. They are very hard and well fired, with a smooth medium-brown coloured inner and outer surface. The sandy body is dark purple-brown in colour and the filler is composed of varied small fragments of rock, including some crystalline metamorphic material, a little mica, but apparently no quartz.

The flat rim appears to have two circles of widely spaced oblique linear impressions, c. 3/16 in. (5.00 mm.) long. Below the rim on the outer surface there is an unknown number of rows of horizontally arranged comb-ornament. Too little survives to allow an estimate of the diameter of the remainder of the vessel. It would appear to be late Neolithic in date (fig. 6, a).

c) **Beaker.** A very small sherd, 7/10 in. (1.85 cm.) long and $\frac{3}{8}$ in. (9.5 mm.) thick, was found at the foot of the western orthostat (stone 16) of the northern chamber. The hard inner and outer surfaces are both reddish-brown in colour, the inner being a little darker than the outer. The body is black, fine and sandy in texture with a filling of small fragments of crystalline metamorphic rock and a little quartz. Traces of two lines of horizontal hyphenated impressions 5/16 in. (9.0 mm.) apart, may be seen on the outer surface. The texture, the black body sandwiched between reddish surfaces, and the decoration strongly suggest that this is a sherd of Beaker pottery.

Flint.

Three recognisable flint artefacts were found.

a) A large point of grey-coloured flint was found in the lower disturbed levels at the southern end of the northern chamber. The point is 2 $\frac{3}{10}$ ins. (5.85 cm.) long, and is made from a large flake, the underside being unworked. The upper surface has fine secondary working around the edges, except near the butt (fig. 6, b).

b) A large round-nosed scraper of pink-grey coloured flint, 2 $\frac{1}{2}$ ins. (6.35 cm.) long lay at former ground level in the western sector of the forecourt. The under surface is unworked, but there is fine secondary working around the curved end of the scraper (fig. 6, c).

c) A small blade of fawn-coloured translucent flint, 1 $\frac{1}{8}$ in. (2.85 cm.) long, which retains part of the cortex, lay on the paving of the southern chamber. The undersurface is unworked, but there is secondary working around the edges of the upper surface, one edge being serrated. It is possible that this was used as a knife, or perhaps as a sickle insert (fig. 6, d).

d) In addition, one lump of light-grey coloured flint, 1 $\frac{1}{2}$ ins. (3.80 cm.) long has secondary working along one edge, and may have been used as a scraper (fig. 6, e).

A second lump of similar flint also appears to have been utilised, but there is only slight retouch.

Four unworked pieces of flint were found in different parts of the body of the cairn.

It is perhaps relevant to quote from the first volume of the *Archaeological and Historical Collections of Ayr and Wigton* published in 1878 (page 11). Another (i.e., claystone celt, with polished face and flattened sides) 8 $\frac{1}{2}$ inches by 3 inches, was found about the year 1851 at Gleniron, New Luce, in clearing away the ruins of what was called an 'old kiln'—probably one of those prehistoric structures still termed in Galloway "Pict's Kilns."¹⁹ It is possible, although quite without proof, that this may refer to

¹⁹ I am grateful to Mr Alexander Morrison for drawing my attention to this reference.

some disturbance at Mid Gleniron in or near one or other of the two chambered cairns. It does suggest, however, that around the middle of the nineteenth century there had been some disturbance, perhaps the first modern disturbance, of the cairns. There is, of course, no evidence to prove that any such axe-head was found in any chamber of either Mid Gleniron I or II.

SECONDARY CREMATION BURIALS

There was evidence of secondary use of the cairn, although not of the chambers, for burial during the Bronze Age. It is possible to identify with certainty nine cremation deposits, and although some were found scattered, their remains may be isolated from neighbouring deposits. Mr Denston in the Appendix to this report provides full data on the individual cremations. A summary of his identifications only is given here, followed by a description of the associated pottery.

Burials

A The remains of this burial were scattered widely in the upper part of the inner cairn, east of the southern chamber. The centre of the deposit lay some 4 ft. east of stone 8. Identifiable fragments of cremated bone suggest that they were of an adult, but sex and age at death are unknown.

B Although rather more of this cremation survived than had burial A, it is possible only to identify the remains as probably adult, but sex and age at death are unknown. The urn in which the remains were found was packed very tightly and wedged in an upright position with some water-worn pebbles. It lay some 18 ins. east of the eastern revetment of the cairn, to the north of the south-eastern corner, and therefore beyond the limits of the cairn proper in slip from the cairn.

C This deposit was more scattered than burial B, but the centre of the scatter was very close to the south-eastern corner of the cairn, overlying the lower course of the revetment at that point. As with burial B, it was apparent that the urn had been wedged tightly in position, and as the base survives it is probable that the urn had been set upright. It is not possible to identify the age at death or sex of the individual whose cremated remains survive.

D It is not possible to identify either the sex of this individual or the age at death. The remains were scattered and apparently the enclosing urn had not been protected as adequately as those of burials B and C. As part of the base survived, it is possible that the urn had been set upright. The deposit of bones and sherds was scattered in the upper levels of the body of the outer cairn, to the west of burial B.

E This deposit also lay among the stones which make up the outer cairn, near its south-eastern corner. Like that of burial D, the cinerary urn does not appear to have been protected adequately. It is not known whether the urn had been upright or inverted, as little of the base survives. The age at death and sex are similarly unknown.

F, G, H These three deposits may be considered together as they were found set close together in a sub-rectangular pit, having an approximately east-west orientation, cut into the subsoil at the edge of the eastern revetment to the north of the south-eastern corner of the cairn (Pl. V, c). The three inverted urns were very tightly packed in their small pit, and were protected further by two cover slabs. Three green water-rolled pebbles, foreign to the site and perhaps chosen deliberately, were packed between urns F and H.

Urn F contained the remains of two individuals, possibly female, and perhaps between 16 and 18 years old at the time of death. **Urn G**, the only intact urn of the series, also held the remains of two individuals. It is not possible to determine whether there were two females or one male and one female, but both appear to have been between

14 and 21 years at death. The third urn from this deposit H, contained a single individual, possibly female, aged between 18 and 25 years at death.

I Unlike the other deposits, this lay to the east of the northern chamber, in the upper levels of the inner cairn surrounding that chamber. The deposit does not appear to have been protected adequately, as it was scattered. It is not known whether the urn had been upright or inverted. The cremated remains appear to be those of an adult, but sex and age at death are unknown.

Reference is made in the Appendix to scattered remains of cremated bone (J to Q). There are little data relevant to the identification of the individuals concerned, but it is probable that scatter J is part of burial A, scatter K part of burial B, L part of D, and M and N part of burial I. The remaining very small scatters of cremated bone clearly represent the result of disturbance, but as they were not associated with sherds of cinerary urn, there seems little reason to attribute them to any burial deposit other than those discussed above. Sherds of cinerary urn found with scatters J and K support the identification of these burial deposits with A and B respectively.

Pottery

A The overall dimensions and any decoration of this shattered urn are unknown, but the average thickness of the wall appears to have been $11/16$ in. (1.7 cm.). Both outer and inner surfaces are sand-coloured, and the sandy body is mostly brown in colour, but black in places. The filling is largely of quartz, and the texture generally is very hard.

B Sufficient remains to provide the following dimensions: Height, 12 ins. (30 cm.); Rim diameter (external), 7 ins. (17.8 cm.); Base diameter (external), 5 ins. (12.7 cm.); Wall thickness (average), $\frac{3}{4}$ in. (1.9 cm.); Base thickness, $\frac{7}{8}$ in. (2.15 cm.). This is a barrel-shaped urn with four horizontal cordons or mouldings, the uppermost lying $\frac{1}{2}$ in. (8.0 mm.) below the internally bevelled rim, the lowest c. $2\frac{1}{2}$ ins. (6.35 cm.) below the rim.

The outer surface of this hard textured urn is sandy-coloured, and the inner dark grey. The body is sandy in texture, and the plentiful filling of quartz penetrates both the outer and inner surfaces of the pot, which is otherwise smooth (fig. 7, B).²⁰

C The overall dimensions are unknown, but the diameter of the base was more than $3\frac{7}{10}$ in. (9.4 cm.), and $\frac{7}{8}$ in. (2.15 cm.) thick; the wall is approximately $9/16$ in. (1.4 cm.) thick. Both outer and inner surfaces are sand-coloured, the inner blackened in places, perhaps from contact with a cremation which had been inserted while still hot from the pyre. The body is sandy and varies in colour from black to dark-brown and grey. The filler is composed of large grits and pebbles, including some quartz measuring up to $\frac{3}{8}$ in. (1.0 cm.) in size. In places the filler projects beyond the surface of the pot. The type of rim and any decoration are unknown.

D Overall dimensions are unknown, but the internal diameter of the base is $3\frac{4}{5}$ ins. (9.8 cm.), and its thickness $15/16$ in. (2.3 cm.); the outer is abraded. The average thickness of the wall is $\frac{1}{2}$ in. (1.25 cm.). Both surfaces are medium-brown in colour, part of the inner being blackened. In places the fine, hard outer surface is smooth and perhaps burnished. The outer part of the sandy body is brown and the inner black. The filler is composed of relatively small fragments of quartz and crystalline metamorphic rock, which protrude from the inner surface of the base. Rim and decoration are unknown.

E The only measurements known relate to the wall, the average thickness of which is $\frac{3}{8}$ in. (1.7 cm.), although the maximum surviving thickness is $\frac{7}{8}$ in. (2.2 cm.). There is no evidence of either rim or decoration. Both surfaces are sand-coloured, and the inner is blackened in places. The outer surface is abraded, but the inner surface of some sherds is smooth. Some of the pebbles which make up the filler measure up to $5/16$ in. (9.0 cm.); both quartz and crystalline metamorphic rock may be identified. The body is sand-coloured, changing inwards to dark-grey.

²⁰ A description of this urn and of F, G, and H is given with illustrations (fig. 10) in A. Morrison 1968.

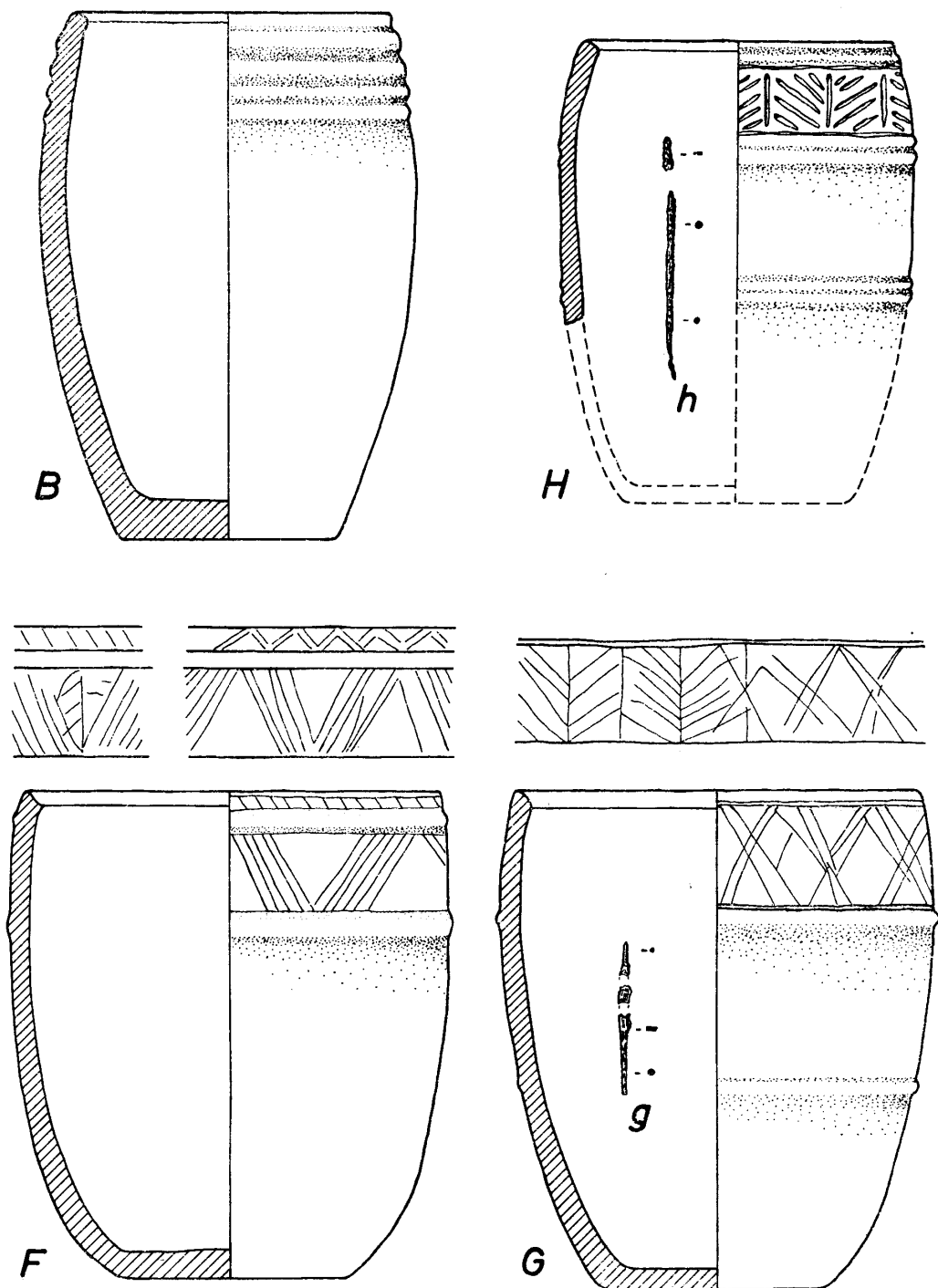


Fig. 7—Mid Gleniron I; Cinerary Urns B, F, G, H. Scale $\frac{1}{4}$.
Bronze Awl g and Bronze Pin h. Scale $\frac{1}{4}$.

F Although broken, the greater part of this urn survives. Dimensions are as follows: Height, $11\frac{1}{2}$ ins. (28.2 cm.); Rim diameter (external), $9\frac{1}{2}$ ins. (24.4 cm.); Base diameter (external), $5\frac{1}{4}$ ins. (13.2 cm.); Wall thickness (average), $\frac{1}{2}$ in. (1.25 cm.); Base thickness, $\frac{3}{8}$ in. (1.7 cm.). This is a squat barrel-shaped urn ornamented with two cordons set 2 ins. (5.1 cm.) apart, the upper set $\frac{1}{2}$ in. (1.25 cm.) below the internally bevelled rim. The area between the cordons is decorated by a pattern of groups of incised diagonal lines, normally five or six lines in each group, and so arranged as to produce reserved triangles with apexes alternately touching an upper and a lower horizontal incised line, which together encircle and frame this part of the design. At one point the overall design is interrupted by a panel of incised decoration which comprises a central vertical line with two curved and three straight diagonal lines. Two shallow horizontal incisions circle the pot above the cordon, the upper $1/10$ in. (2.5 mm.) below the rim, the lower c. $\frac{1}{2}$ in. (1.25 cm.). Their widths vary between 1.0 and 1.5 mm. and appear to have been made with a wooden implement, as when viewed under a microscope traces of what appear to be the impressions of wood-graining may be seen. Between the horizontal lines there are rows of straight incisions, set c. $\frac{1}{2}$ in. (1.25 cm.) apart, and arranged diagonally and sloping from top-left to bottom-right. They continue for approximately three-quarters of the circumference. The remaining area is decorated with a chevron pattern of double lines.

The outer surface is mostly pink-fawn in colour, with some blackened areas in the decorated zone. Traces of black, burned areas may be seen about half-way down the interior surface, which is fawn-coloured. The texture is fairly smooth on both surfaces, particularly near the decoration, which in places is partially obscured, perhaps as a result of smudging during burnishing. Some fairly large pieces of quartz and crystalline metamorphic rock were used in the filling, and some penetrate the surface of the pot. The body is sand-coloured (fig. 7, F).

G The urn is intact and its dimensions are as follows: Height, $11\frac{5}{16}$ ins. (28.9 cm.); Rim diameter (external), $8\frac{7}{8}$ ins. (22.5 cm.); Base diameter (external), 5 ins. (12.5 cm.); Wall thickness, $4/10$ in. (1.0 cm.); Base thickness, $\frac{1}{2}$ in. (1.25 cm.). This barrel-shaped urn is ornamented by two cordons set $3\frac{1}{2}$ ins. (8.9 cm.) apart, the upper lying $2\frac{1}{2}$ ins. (6.35 cm.) below the internally bevelled rim. Above the upper cordon there is a pattern of fine incisions which are semi-circular in cross-section, some 1.0 mm. in width, others very slight. The upper part of the decoration comprises two parallel lines encircling the pot, c. $\frac{1}{4}$ in. (3.75 mm.) apart, the upper lying c. $\frac{1}{4}$ in. (7.5 mm.) below the rim. The lower limit is marked immediately above the upper cordon by two further parallel lines for most of the circumference, and single and in parts missing, for the remaining quarter. Between the two sets of horizontal lines the main part of the decoration mostly comprises double-lined saltires, fairly regularly arranged for two-thirds of the circumference. The remaining area is filled with six panels formed of single vertical lines with intervening diagonal lines, giving a herring-bone effect. The vertical lines are set c. $1\frac{1}{4}$ ins. (3.15 cm.) apart, and the diagonal lines c. $\frac{1}{4}$ in. (7.5 mm.) apart. At one point a single saltire is incised over part of the right-hand limit of the herring-bone motive.

Both surfaces are fawn-coloured, the outer having a few patches of pink colour, and are relatively smooth, particularly the upper part of the outer surface which may have been burnished. The filling appears to be fine, but the texture and the colour of the body are unknown.

The mouth of the urn had been sealed with a 'plug' of hard clay, reinforced with small stones. The contents therefore were undisturbed and it could be seen that, apart from the remains of a bronze awl described below, they comprised cremated bone only, with a very small amount of fine dusty soil and a few flecks of charcoal. The bones were quite clean, and it seems probable that the remains had been taken carefully from the pyre, and perhaps placed in the urn while they were still hot, as the inner surface in places showed signs of scorching (fig. 7, G).

H Although the lower part of this barrel-shaped urn had been removed prior to excavation, sufficient remained to suggest that originally it may have been approximately $10\frac{1}{2}$

ins. (26.7 cm.) high, with a possible external basal diameter of approximately 5 ins. (12.5 cm.). Other dimensions are: Rim diameter (external), 7 in. (17.8 cm.), and Wall thickness, $\frac{3}{8}$ in. (9.5 mm.).

There are two double horizontal cordons, the upper some 2 $\frac{1}{4}$ ins. (5.7 cm.) below the internally bevelled rim, and the lower 5 $\frac{1}{2}$ ins. (14.0 cm.). There is also a less pronounced single cordon $\frac{1}{4}$ in. (3.25 mm.) below the rim. Between this and the upper double cordon there is a pattern of deeply incised motives comprising panels of five diagonal lines set between vertical lines, and so arranged to form a herring-bone motive. The panels are enclosed within an upper and a lower deeply channelled line.

Both surfaces of the urn are fawn-coloured, the outer being quite smooth. The fawn-coloured body has a filler of small fragments of quartz and crystalline metamorphic rock (fig. 7, H).

Part of the stem and a fragment of a bronze pin, described below, was found in this urn.

I The only known measurement is the average thickness of the wall of the urn, which is $\frac{1}{2}$ in. (1.25 cm.). The smooth outer surface is light-fawn in colour, and the inner black. Some fragments of quartz and crystalline metamorphic rock, which measure up to $\frac{1}{8}$ in. (9.0 mm.), penetrate the outer surface, many sherds of which are much abraded. The body of the vessel is dark brown in colour.

Bronze

a) Awl with cremation G (fig. 7, g)

Three fragments of a corroded bronze awl were found in the intact urn G. The awl has an expanded central portion, rectangular in cross-section, 3.5 mm. in greatest width, which apparently was hammered and perhaps ground. The largest fragment, 9/10 in. (2.35 cm.) long, includes part of the central portion, from which it tapers at its surviving broken end, to a circular cross-section, some 2.0 mm. in diameter. It is not known whether this continued to a point. Part of a point, however, survives, 1.0 cm. long, and this appears to taper from the expanded central portion.

The surviving fragments suggest that they came from an asymmetrical awl, but the shorter pointed end may have resulted from use, and perhaps was ground down to retain its point. Apart from this asymmetry, it compares with an awl found with a cremation and a Food Vessel at Carrickinab, Co. Down in the north of Ireland. As Thomas shows in an appendix to the report of the burial, the latter belongs to his type 1B (square or rectangular centre, both ends with circular cross-section).²¹ Of the 15 examples known to him from burials in England, five have been found with Beakers, and seven others dating from Late Neolithic-Early Bronze Age contexts, two of which were found with Food Vessels and two with cinerary urns. Five were associated with female burials, and perhaps three with males. Although most of the burials were inhumations, one of these associated with a cinerary urn, from Tynings Farm T.12, Somerset, was a cremation.

It is of interest to note that part of the decoration of the Food Vessel from Carrickinab compares with sherds of an apparent Food Vessel found in Mid Gleniron II (cf. *infra*. p. 68).

b) Stem of ? pin with cremation H (fig. 7, h)

Two parts of a corroded bronze artefact were found in urn H. The surviving length of the larger is 2 $\frac{1}{5}$ ins. (5.6 cm.). The wider end appears to be approximately square in cross-section (between 2.5 and 3.0 mm. wide), and tapers to circular cross-section, the narrowest surviving cross-section measuring 2.0 mm. across. The narrower end is highly corroded and distorted, perhaps as a result of being subjected to a high temperature. It is possible that it had been burnt on the pyre. The smaller fragment also appears to be part of a stem.

Taken together they are larger than the type of awl referred to above, and may be part of the stem of a bronze pin.

²¹ A. E. P. Collins and E. E. Evans 1968.

DISCUSSION

In default of relative chronological evidence derived from an adequate sequence of artefacts, any interpretation of the building sequence of Mid Gleniron I must rely on a consideration of structural features alone. It is almost impossible to avoid a subjective appraisal, but the writer believes that the following interpretation is the one which most adequately follows from evidence derived from excavation. It is possible that future excavation of comparable structures may necessitate some revision, and, indeed, the shortage of comparable data derived from excavation inhibits any discussion of wider implications.

Mid Gleniron I comprises a number of structural features. There are three small, rectangular chambers, two of which open from the north and are enclosed with oval cairns. The third chamber opens from the west, and apparently lacks a comparable cairn. All three structural units are enclosed within a straight-sided cairn, having a north-south orientation with a northward facing façade, through which access to the northern chamber was possible.

It is difficult to believe that this complex structure was built as a single unit. At very least, the southern chamber and its enclosing cairn must have had an independent existence, but of unknown duration. Otherwise, how would access to the chamber have been gained, once the southern inner cairn had been incorporated within the long cairn? It might be argued that access would have been possible by some sort of "drop-entry" in front of the chamber. If such an argument were to be accepted, it would be necessary to offer some parallel from within the chambered tomb tradition of Europe. The writer has been unable to find any such parallel in chambered tombs built at ground level; a different tradition might have obtained in rock-cut tombs, but such tombs are unknown in Britain.

Recent excavation in Britain provides a limited parallel to the arrangement of chambers at Mid Gleniron I. At Dyffryn Ardudwy (MER 3) in Merioneth, a Portal Dolmen, contained within a small, oval cairn, was subsequently enclosed within a straight-sided, long cairn, which also incorporated a second chamber. The two chambers are set in tandem on the longitudinal axis of the long cairn, in such a way that the entrance to the Portal Dolmen faced into the body of the long cairn, and towards the rear of the second chamber. The excavator of Dyffryn Ardudwy believes that the Portal Dolmen and its cairn formed an independent structure subsequently incorporated in the long cairn.²² That such an arrangement was perhaps not uncommon in western Britain is also suggested by the similar arrangement of the two chambers at Presaddfed in Anglesey (ANG 2).

It would appear, therefore, that the southern inner cairn was not simply

22 T. G. E. Powell 1963.

a structural feature supporting thrust from the southern chamber, but that originally it was an independent structure. It has already been suggested that the inner cairn surrounding the northern chamber was similarly an independent structure. It is more difficult to sustain this argument, but the following facts may be considered. In the first place, composition of the northern inner cairn appears to differ from that of the long cairn. It might be argued from this that the inner cairn was built simply as a structural device to absorb thrust from the chamber, and that it did not have an existence independent of the long cairn. The size of the inner cairn, however, would seem excessively large in relation to the chamber which, by virtue of its simple construction, was inherently stable. There is no evidence, for example, to suggest that it had a corbelled roof, which might have needed some additional structural support from the cairn structure. The contrast, for example, between the inner cairn at Mid Gleniron I and the close-set oval wall surrounding the more complex chamber at Nympsfield (GLO 13) in Gloucestershire is obvious.

Finally, excavation at Mid Gleniron demonstrated that the outer limits of the northern inner cairn joined the entrance to the northern chamber, not at the portals set at the centre of the façade, but at the northern end of each side orthostat. This would seem to imply that the adit between the orthostatic chamber and the façade was built at some time subsequent to the chamber proper. Had the chamber and adit been built as part of a single operation, then it might be supposed that an inner cairn built for purely structural reasons would have been constructed in such a manner that it gave support to the somewhat unstable walls of the adit. Taken together as a structural entity, the arrangement of megalithic chamber and short, dry-stone built adit of the type and proportions present at Mid Gleniron I, has no known parallels in the megalithic tradition in Britain. It differs from the type of Passage Grave recognised in some cairns in the Cotswold-Severn region, where such chambers are entered from the side of the long cairn.²³ If it is accepted that the adit was built subsequent to the chamber proper, then it must also be concluded that the northern cairn was originally an independent structure.

It has been suggested that the purpose of the adit was to link the entrance of the northern chamber with the façade. Without the interposition of the adit it would not have been possible to build the type of forecourt which apparently was becoming part of the structural and ritual tradition in south-western Scotland at that time. The adit probably belongs to the period of construction which saw the erection of the façade and the building of the long cairn. The façade would appear to have no *raison d'être* without the long cairn. A free-standing façade built in front of the northern inner cairn would lack parallels in Britain. Further, the use of uprights and intercalary dry-stone walling in both façade and revetment argues for unity of design.

23 J. X. W. P. Corcoran in T. G. E. Powell et al. 1969, 58-61.

The position of the lateral chamber within the building sequence so far envisaged is difficult of interpretation. If it is accepted that both the southern and northern inner cairns were originally independent structures, the lateral chamber should post-date them. It might be argued, however, that the lateral chamber was the earliest of the three. Against this is the apparent absence of an independent cairn for the lateral chamber. It seems improbable that, had one existed, it would have been removed, and it would similarly be unlikely that the lateral chamber had been free-standing. There is no evidence which might suggest that the lateral chamber was inserted in the already existing long cairn, although disturbance in this area has destroyed any relevant evidence.

Taking into account these factors, it is suggested that the lateral chamber was built as part of the final building phase, that of the façade and long cairn. The cairn stones backing this chamber are on average larger than those of the long cairn proper, and are best considered as a stabilising structural feature belonging to this final phase.

It is not possible to offer any reason for the construction of the lateral chamber. Once the long cairn was built, the southern chamber presumably ceased to be used for burial. Access to the northern chamber, however, was still possible, as shown by the adit and the portal stones at the centre of the façade. It might be suggested that the need for additional room for burial prompted the construction of the lateral chamber. Alternatively, if it were to be assumed that the builders of the long cairn belonged to a different group from those who built the northern inner cairn, it is possible that the latter continued to use the northern chamber, whereas the newcomers may have used the lateral chamber.

Considerations of more general application arising from the excavation of Mid Gleniron I may conveniently be deferred until Mid Gleniron II has been described.

MID GLENIRON II²⁴

(figs 8, 9 and 10)

Prior to excavation Mid Gleniron II was a low, grass-covered mound, orientated approximately north-south. It appeared to be at least 50 ft. long, its greatest width was approximately 35 ft., and its maximum height 5 ft.²⁵ At the southern end the upper parts of six small orthostats projected above the surface of the mound. They were set on a shallow arc. An apparent gap in the centre suggested the existence of a terminal chamber, but there were no surface indications of any such structure. The upper parts of two small orthostats set at right angles to the longitudinal axis of the mound appeared to mark the position of a small lateral chamber opening from the east. The presence of a modern field wall, which was built approximately at right angles to the longi-

²⁴ National Grid Reference NX 1880 6094.

²⁵ From the description in RCAHM(S) Wigtown 1912, 96 (No. 263), it appears that Mid Gleniron II and Mid Gleniron A were both thought to have been part of a single long cairn.

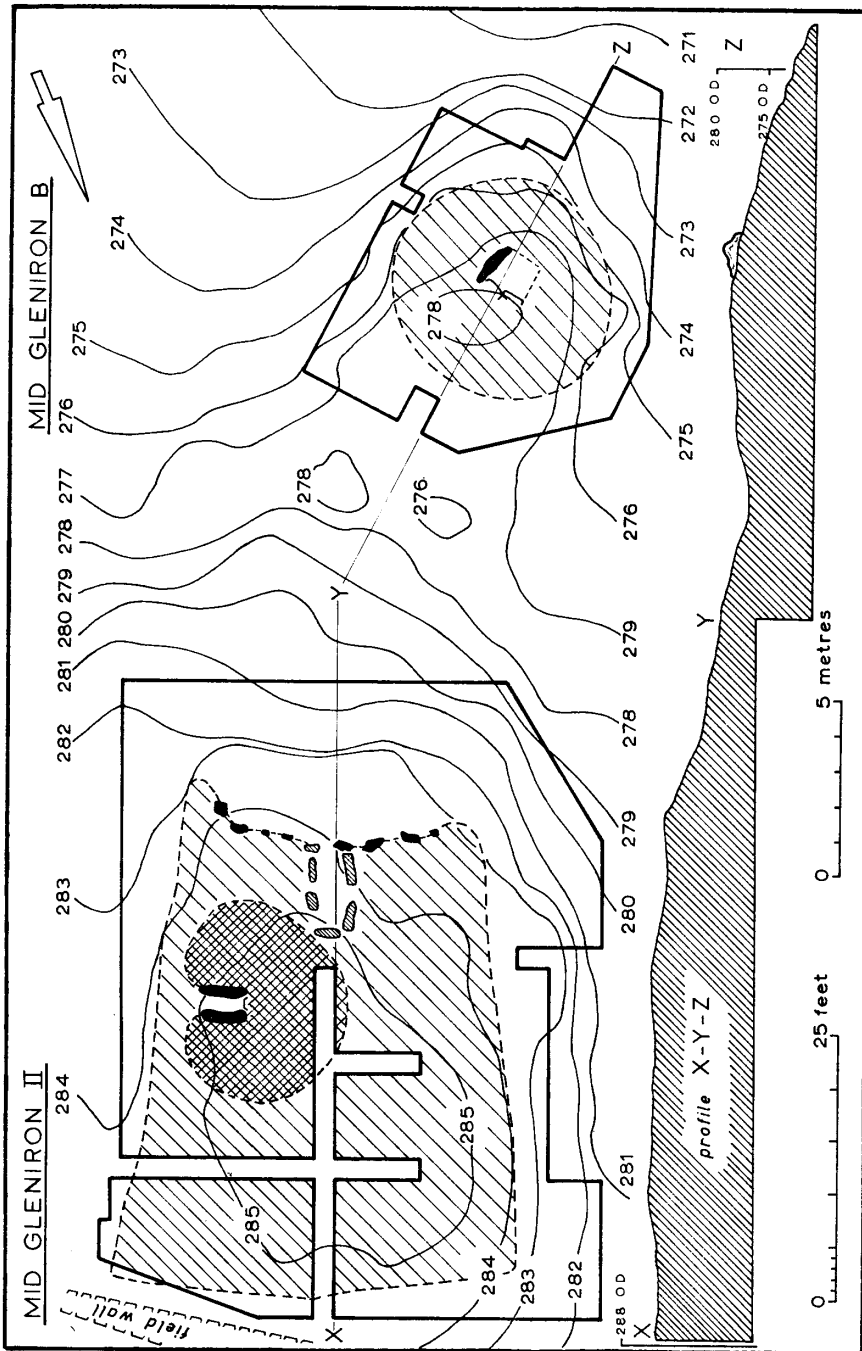


Fig. 8—Mid Gleniron II and B; Contour plan.

tudinal axis, and the northermost surviving limit of the cairn, suggested that the cairn might originally have been longer than its apparent length in 1963.²⁶ There was, however, no evidence of any continuation of the cairn in the field to the north of the wall. Excavation subsequently revealed that the northern edge of the cairn lay immediately to the south of the wall.

Evidence derived from the excavation of Mid Gleniron I suggested that Mid Gleniron II may similarly have been of multi-period construction. This was subsequently verified. It is convenient to describe the cairn in the assumed order of construction.

DESCRIPTION

Lateral chamber and inner cairn (Pl. VIIIb, c)

The chamber, which subsequently was to become the lateral chamber of Mid Gleniron II, is small. The side-walls are each formed of a single orthostat, the northern being 4 ft. long, and the southern 4 ft. 7 in. The northern orthostat is at present tilted inwards, but assuming that it originally was upright, the width of the chamber would have been no greater than 1 ft. 8 ins. There is no evidence of an orthostatic end-stone. Despite disturbance at the rear of the chamber, however, an apparent basal course of dry-stone walling suggests that the end-wall was dry-stone built. A few fragments of apparently Neolithic pottery lay under this basal layer.

Entrance to the chamber does not appear to have been marked by portal stones, but, as in the case of the two inner cairns of Mid Gleniron I, the kerb of the inner cairn turns inwards slightly to meet the outer ends of the side orthostats. At each side of the entrance, however, close to the position at which the kerb turns inwards to meet the orthostats of the chamber, there was originally a small, vertically set stone. That on the south side remains *in situ*, but leans forward slightly. Its original height was approximately 18 ins. Its northern counterpart is prostrate, but is of similar proportions.

Roofing did not survive in any form. The small size of the chamber suggests the improbability of any type of roofing other than one set directly on the upper surface of the side-walls. A single flat slab would have served as an adequate capstone. The greatest height above floor level of the southern orthostat is 3 ft. 2 ins. In its assumed original position, the northern orthostat would have been of a similar height. The latter has an upper surface more evenly horizontal than that of the southern orthostat, but stability for a roofing slab could easily have been achieved where necessary by the insertion of small stones between the roof and the orthostat. Such a roof would have allowed a headroom of a little more than 3 ft., which seems adequate for a chamber of such modest proportions.

The enclosing cairn is ovate on plan, with a pronounced flattening on the eastern side, at each side of the entrance. Overall measurements are 19 ft.

²⁶ S. Piggott and T. G. E. Powell 1949, 142, fig. 16, 144.

from north to south, and 15 ft. from the rear of the cairn to the entrance. The cairn is built of carefully set stones of varied size, and is edged by a low, rudimentary dry-stone wall, which formed a well-defined kerb. In the south-western quadrant one of the kerb-stones was firmly set in a vertical position, but apart from this and the two stones near the entrance, vertical stones were not used in the kerb.

The chamber had been robbed to the level of the sub-soil, and was filled with clean, dry soil and a few small stones. The area between the kerb and the outer ends of the orthostats was blocked by stones of a size comparable with those of the kerb. The construction of the blocking also resembles that of the kerb, and when closed, the cairn would have been surrounded by an unbroken kerb, the position of the entrance being indicated by the two upright stones already mentioned. A number of flints and some sherds of undecorated Neolithic pottery lay beneath the blocking on the original ground surface. Close to the northern fallen upright, and now partially covered by it, was a slightly hollow area, some 2 ft. 6 ins. in diameter, of fire-reddened soil marking the position of a fire lit on the old ground surface at the entrance to the chamber.

The small chamber and its enclosing cairn appear to form a single, structural unit, which subsequently was enclosed in a straight-sided cairn. The latter also enclosed a terminal chamber fronted by a shallow façade. Although the three structural elements, the terminal chamber, the forecourt and the cairn, appear to have been built as part of a single building operation, they may conveniently be described separately.

Terminal chamber (Pl. VI)

Prior to excavation entrance to a terminal chamber was suggested by an apparent gap in the façade. This was subsequently confirmed, but disturbance and destruction had been so extensive that not a single orthostat survived intact. The sole surviving structural component of any size is the broken stump, some 9 ins. high, of the western portal (stone 8), which is set diagonally to the longitudinal axis of the chamber. Elsewhere, fragments only of orthostats survived, as in sockets 7, 12 and 16. Two large broken, shattered and displaced fragments of the end-stone partially overlay socket 14, and part of what may have been the shattered northern portal stone lay on the cairn to the north of its presumptive socket (7).

Sockets for the orthostats of the chamber had been dug into the subsoil to an average depth of 9 ins. The edges of the sockets were quite clearly defined, and packing stones for the missing orthostats survived *in situ*. Small fragments of charcoal were found in most of the sockets. Whereas it is not possible to offer a precise reconstruction of the plan of the chamber, the arrangement of the sockets suggests that the chamber was rectangular on plan, approximately 8 ft. long, and had an average width of 3 ft. The side-walls each appear to have comprised two orthostats, there appears to have been a

single end-stone, and there were two portal stones. The gap between each pair of sockets originally supporting the side walls suggests that the basal width of the sockets may have been less than the maximum over-all width of the missing orthostats. In each of the two gaps, stones were found which would have contributed to the support of such orthostats, which presumably were not flat based. The end-stone of the terminal chamber was erected close to the upright stone in the kerb of the inner cairn, to which reference has been made. The floor of the chamber was level, and there were no indications of any socket for a transverse septal slab.

There was no evidence of roofing. As the original height of the chamber is unknown, it is not possible to offer any hypothesis as to the type of roofing which might have been used. The width of the chamber would have made it possible for roofing stones to have been set directly on the side-walls. This suggestion is supported by the choice of small, low orthostats in the façade, as it seems improbable that such an unimpressive structure would have fronted a high-roofed chamber.

The area originally occupied by the terminal chamber was filled with loose earth and many stones of varying sizes. The latter contrasted with the more firmly set stones of more uniform size, which comprised the body of the cairn in the immediate vicinity of the chamber. A rough, but stable, backing wall appears to have been built behind each side-wall of the chamber. There is no evidence of any inner structural wall enclosing the terminal chamber, but there would have been insufficient room to build one, if it is accepted that the inner cairn was already in position. The absence of the inner wall enclosing the chamber supports the hypothesis that the roof of the latter was relatively simple. Otherwise, some support around the chamber would have been necessary.

A number of sherds of prehistoric pottery was found in the disturbed upper levels of the chamber area. Sherds of two pots may be identified, an apparent Peterborough bowl of Mortlake type, and a Food Vessel. There were also a few minute fragments of burnt bone.

Forecourt (Pl. VII)

A very shallow façade flanks the entrance to the terminal chamber. Although the over-all plan gives the impression of a crescentic setting, the orthostats of each side of the façade are set in an almost straight line. The outermost orthostat of the eastern side (stone 3) alone projects forward of the entrance for a distance of 1 ft. 6 ins. Were it not for this, the façade would be almost straight. The over-all width is 21 ft.

All the orthostats of the façade lean forward. Of these, none at present would measure more than 2 ft. 9 ins. in height, if set vertically. The majority appear to have been smashed in recent times. The outermost orthostat on the eastern side, however, appears to be unbroken and, if vertical, would be 2 ft. 3 ins. high. There is similarly no evidence of recent breakage on stone

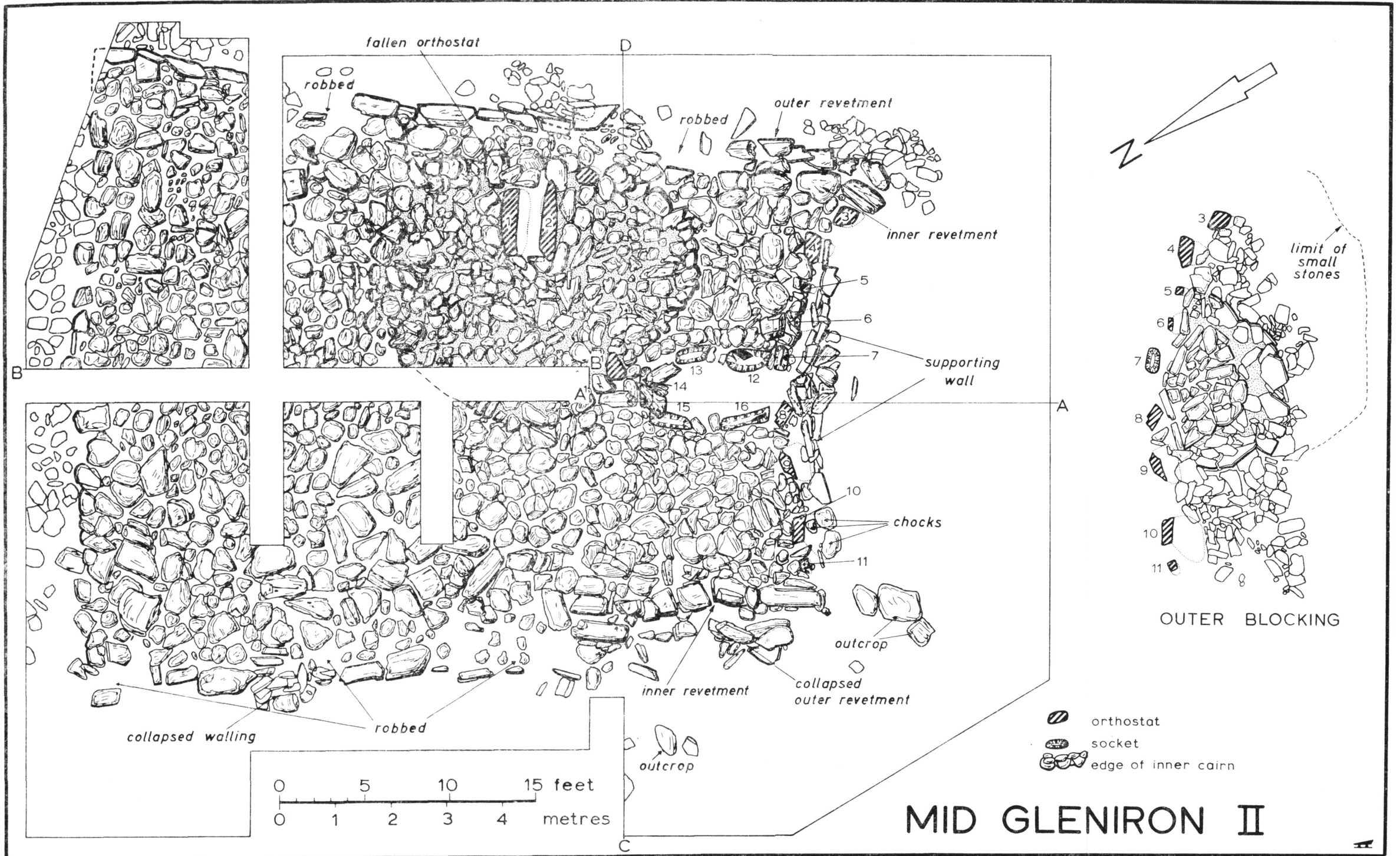


Fig. 9—Mid Gleniron II: Plan.

10, which would be 2 ft. 8 ins. high, if vertical. Judging from the very small basal cross-section of stones 5 and 6, the former only 9 ins. square, it seems improbable that any of the orthostats in the façade exceeded 3 ft. in height. There is no evidence to suggest that height increased from the outer orthostats inwards. The comparable orthostats in Mid Gleniron I also appear to have been of relatively uniform height.

Roughly built, but stable, dry-stone walling survives between orthostats 4 and 5 and between 5 and 6 in the eastern side of the façade (Pl. VII, c). Somewhat disturbed walling was identified between orthostats 9 and 10 in the western side. It is probable, therefore, that this type of walling originally was built between each pair of adjacent orthostats. Owing to the spacing of orthostats, with an average gap of 1 ft. 3 ins. between each pair, some form of stabilising wall would have been necessary to retain the weight and thrust of the body of the cairn. The surviving remains of the intercalary walling are vertical.

The façade does not appear to have been stable, as shown by the forward inclination of all its orthostats. Assuming that the orthostats were originally vertical, this instability probably developed during the period of use of the cairn, and is demonstrated by a wall, apparently built to prevent any further displacement of the orthostats. The wall extended in a shallow arc from stone 4 to stone 10. As the outermost orthostats of the façade lean forward only slightly, it was unnecessary to extend the wall in order to support them. Lying near the edge of the cairn, little pressure would have been exerted on these terminal orthostats. The maximum height of the wall was 1 ft. 9 ins., the number of courses varying with the thickness of stone used, but not exceeding six courses. Between the base of the wall and those of the orthostats there was a gap of some 9 ins.; the upper parts of the leaning orthostats were in contact with the upper courses of the wall. This demonstrates that the wall was not built up against vertical orthostats.

The building of the wall appears to have been a precaution rather than a necessity as the orthostats remained stable during excavation, even after the removal of the wall. With the exception of the western portal (stone 8), the base of which survived, firmly set in its socket, the orthostats of the façade were afforded inadequate vertical support. Stones 3 and 4, for example, were not set in sockets, but were propped up by small stones at their bases. It was believed perhaps that the body of the cairn would have given adequate support to the orthostats.

The temporal relation of the wall to the blocking of the forecourt is unknown. The wall would have been superfluous, had its construction been followed immediately by the blocking of the forecourt. On account of extensive disturbance at the entrance to the chamber, there is no evidence of any blocking which may have been built between the portals. If, however, the period between the construction of the wall and that of the blocking in the forecourt had been

of any considerable duration, and if access to the terminal chamber had been required during that period, there should be some evidence of an original gap in the wall in front of the entrance. In this position, in fact, a large boulder, 2 ft. 3 ins. long, unlike the other stones from which the wall was built, lay on the former ground surface. The wall was built up to each side of the boulder, and two courses of walling overlay it. When the forecourt was blocked, the boulder would have formed an integral part of the wall, but it is possible that prior to this there had been a gap in the wall which was finally closed by placing the boulder in position, and by incorporating it into the wall. Immediately to the west of the boulder there appeared to be a straight joint in the wall, emphasised by a basal stone of a thickness greater than average for the wall as a whole. There was no similar feature on the eastern side, but had the boulder been manoeuvred into position against a straight edge marking the beginning of the western side of the wall, it is unlikely that the junction between boulder and wall to the east would have been exact. Evidence of a similar straight edge would perhaps have been masked by modifications attendant on the incorporation of the boulder in the wall.

It is suggested, therefore, that until the final blocking of the forecourt was placed in position, there was a gap in the wall. There was, of course, no structural necessity for the wall to continue across the entrance. It is also possible that the incorporation of the boulder marked the formal blocking of the chamber. With the wall already in position, the original portal stones perhaps had lost their original function, and so it was the gap in the wall which was blocked, and not the original entrance. To emphasise, as it were, the blocking of the entrance, four flat slabs, the longest of which was 1 ft. 9 ins. long, were placed in a leaning position against the wall, and so masked the boulder.

Blocking of the forecourt (Pls. VIIa, VIIIa)

The sole surviving evidence for ritual from the ground surface of the forecourt was an area of burning, 2 ft. 6 ins. in greatest extent, marked by fire-reddened soil and charcoal, which lay in front of the façade between stones 8 and 9, and partially overlain by the wall. Once the wall had been built across the façade, and the entrance to the chamber closed, there was no structural necessity for placing further blocking in the forecourt. The very shallowness of the forecourt made the addition of such extensive blocking superfluous.

It may be suggested that custom or ritual dictated the regular planning of the inner part of the blocking. This comprised a carefully laid, platform-like arrangement of between three and four layers of flat slabs built up against the central part of the 'precautionary' wall for a distance each side of the longitudinal axis of 3 ft. 6 ins. Its outer edge was curved on plan, and extended southwards for a maximum distance of 4 ft. The maximum height above the floor of the forecourt was 1 ft. 6 ins.

This inner blocking was in turn masked by the outer, which was also built of flat slabs laid over and against the inner blocking, and concentric with it. The outer blocking was approximately semi-circular on plan, and extended to

the south for a distance of 7 ft. Its diameter was 10 ft. The regular arrangement of the inner and outer blocking appears to have been masked by a mantle of smaller stones which extended for the full width of the façade. In contrast to that of Mid Gleniron I, the outer limits of the 'mantle' were not defined by a kerb.

A number of sherds of decorated and undecorated Neolithic pottery were found among the interstices of the blocking, where they appear to have been deposited as part of ritual activity connected with the closing of the forecourt. The majority lay in the eastern half of the forecourt, very few were found in the western. This does not appear to have resulted from later disturbance, which was confined to small areas in the eastern half. A leaf-shaped flint arrow-head was found lying close to the outer limits of the eastern sector of the blocking. These finds are described below.

The Cairn

The limits of the long cairn are marked by an outer revetment, giving a plan which increases in width from approximately 30 ft. at the southern end to 39 ft. at the northern. Its maximum length is 47 ft. The revetment appears to have been dry-stone built, without any vertical components. It survives for the most part only in its basal course, but the position of slip in a number of places suggests that in its original form it would have been at least 3 ft. high, dependent on the number of courses of dry-stone walling used (Pl. VIII, b).

Although the revetment has been robbed in several places, the surviving side-walls appear to have been built up against an earlier revetment. This may have been prompted by two factors, the instability of what may have been the original revetment, and the difficulty of enclosing the earlier oval cairn within the long cairn. Mid Gleniron II was built on the crest of a slight rise in ground level. This appears to have aggravated the instability of the somewhat poorly constructed western dry-stone wall, which lacked the stabilising influence of associated upright stones. As a result, there was a tendency for the wall to collapse down the slope. The collapse may have begun during the period of use of the cairn, and the outer wall built in an attempt to stabilise it. This attempted remedy appears to have been ineffective, and is shown by the subsequent collapse of the outer wall, notably at the south-western end of the cairn.

It was not possible to identify with certainty the inner wall throughout the complete perimeter of the cairn. The least ambiguous evidence lies in the southern part of the cairn, on both the eastern and western sides. The southern limits of the inner wall were each built against the respective outermost orthostats of the façade, in such a manner that each wall projected a distance of 1 ft. beyond the end of the façade. On each side, the line of the inner wall appears to have been aligned with the longitudinal axis of the cairn. Identification of the inner wall in the northern part of the cairn is more ambiguous, but there is some evidence to suggest that this inner wall continued along the northern end of the cairn. Near the north-western corner, for example, some flat slabs, of greater than average size, appear to mark the corner of the inner wall. These

larger stones may have been chosen in order to minimise the effects of slip which might have been anticipated at that point. Near the north-eastern corner, too, there appears to be some evidence of an inner wall, apparently aligned on the putative inner wall in the south-eastern quadrant of the cairn.

The interpretation of the inner and outer walls is further complicated by the relationship of the long cairn to the inner cairn. The final plan of the long cairn has an outward splay from south to north, perhaps in order to accommodate the inner cairn. On the other hand, the alignment of the putative inner wall was such that it would also have incorporated the inner cairn on the eastern side, as it appears to have been aligned on the entrance to the chamber of the of the inner cairn.

If it may be assumed that an inner wall originally defined the limits of the long cairn, a reason for the outward splay in plan of the outer wall should be sought. Towards the north-western corner there appears to have been more slip than from the more solidly built inner wall near the south-western corner. In order to enclose this slip it would have been necessary to build the outer wall further to the west. It seems probable that the original intention was to build the outer wall against the line of the inner, as may be seen from their relative positions in the southern part of the cairn. In order to preserve symmetry of plan, it would have been necessary to adjust the line of the eastern outer wall.

Had the inner wall originally been intended as the sole revetment, the appearance of the entrance to the lateral chamber would have been altered, following the construction of the outer wall. The inner wall to the south is built up against the kerb of the inner cairn in such a way that the entrance to, or the blocking of, the lateral chamber would have been visible, had an outer revetment not been added. The choice of rather more flat slabs for the outer revetment, which at this point was built some 2 ft. outside the kerb of the inner cairn, would have presented the appearance of an unbroken dry-stone wall. It is not known whether the chamber of the inner cairn had finally been blocked by the time the latter was enclosed within the long cairn. Had it remained open for at least part of the period before the final use of the composite cairn it might be inferred that the decision to add the outer revetment was at least in part prompted by a desire to improve the appearance of the revetment of the eastern side of the cairn by the addition of a more regularly built dry-stone wall. The construction of the outer revetment may, therefore, have been associated with the final use of the cairn as a whole. It might even be suggested that the carefully built final blocking of the forecourt was accompanied by the construction of the final revetment. This would perhaps be all the more appropriate in the case of cairns such as Mid Gleniron I and II, which apparently lacked extra-revetment material deliberately built against the revetment wall.

The composition of the long cairn resembles that of the inner cairn, although many of the stones of the former, notably in the northern part of the cairn, are larger than those of the inner cairn. Around the southern and eastern arcs of the circumference of the inner cairn, it could be seen that cairn material forming

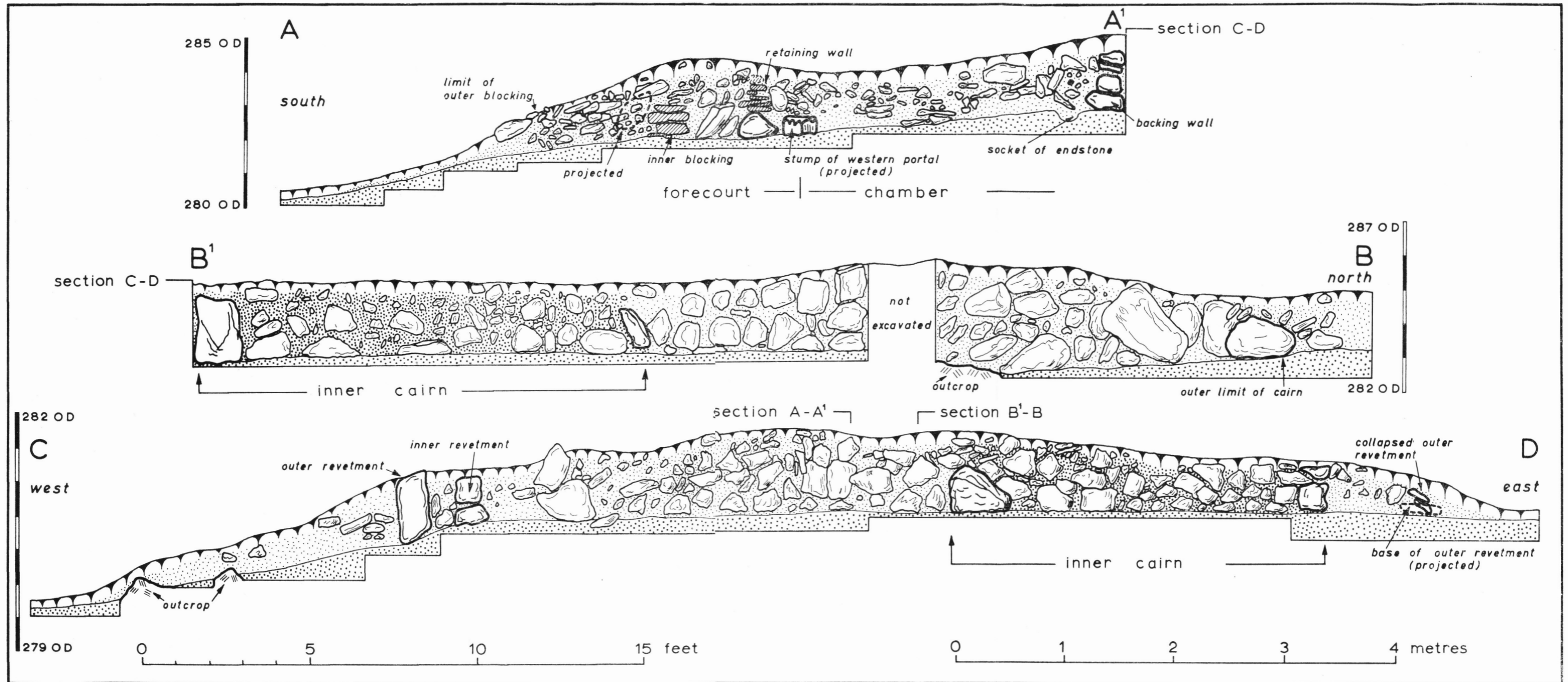


Fig. 10—Mid Gleniron II; Sections.

the body of the outer cairn had been set carefully in an inclined position against the kerb. Three flint flakes and two sherds of prehistoric pottery were found in the body of the cairn. One of the latter lay on the former ground surface.

SMALL FINDS

Most artefacts were found in the forecourt and near the eastern edge of the cairn, close to the lateral chamber. A single sherd, a few fragments of pottery and a flint flake were found in the lateral chamber, and sherds of two pots, one of Peterborough ware and a Food Vessel, lay in the disturbed area of the terminal chamber. Two sherds were found in the body of the straight-sided cairn. Apart from minute and unidentifiable fragments of burnt bone, found in the disturbed area of the terminal chamber and near the outer revetment close to the lateral chamber, neither human nor animal remains survived.

Pottery

a) **Lateral chamber.** A single, very friable wall-sherd and nine small fragments all belonging to the one vessel, lay on the former ground surface under the surviving basal layer of the dry-stone walling which formed the rear of the lateral chamber. The thickness of the sherd tapers from $9/32$ in. (7.0 mm.) to $7/32$ in. (5.5 mm.). Both surfaces are hard, dark grey-fawn in colour, the outer apparently burnished. Some of the fragments which retain only one surface are rather more pink in colour. The texture of the body is fine and sandy, hard and well-fired, and has a filler of very small, close-packed fragments of quartz and mica.

Although distinctive morphological features cannot be identified, comparison with other sherds of similar pottery found in Mid Gleniron II, suggests that this is sherd of undecorated Neolithic ware.

b) **Adjacent to kerb of inner cairn.** Two small deposits of wall-sherds, each associated with flint, lay on the former ground surface, close to the kerb of the inner cairn which encloses the lateral chambers, to the south of the entrance. The average thickness of the sherds is $\frac{3}{4}$ in. (9.5 mm.) and the texture, filler and colour closely resemble those of the sherd found under the dry-stone walling of the lateral chamber.

c) **Revetment of straight-sided cairn.** A number of sherds lay on the former ground surface beneath, and among the flat stones which form the revetment of the straight-sided cairn to the south-east of the entrance to the lateral chamber. The majority of sherds, although varying in thickness, resemble those described at a) and b) above. In general, the sherds are much abraded and very friable, sandy in texture with some evidence of a burnished outer surface. The filler is composed mostly of very small fragments of quartz, with a little mica. Some sherds also included fragments of crystalline metamorphic rock in their filler.

Among them were two small sherds and possible fragments of rim, but of a size too small to allow any estimate of the diameters of the vessels. One appears to be a piece of a slightly rolled rim (fig. 11, a). The inner surface is much abraded, and it was found with the inner surface lying flat against a larger wall sherd. The second rim appears to have a rather more hooked profile (fig. 11, b). Among these deposits was a single sherd with evidence of a simple shoulder (fig. 11, d).

It was possible to join together a number of small abraded sherds which appear to have been part of a vessel which differs somewhat from the remainder found in this area. The average thickness of more than $7/16$ in. (1.1 cm.) is greater, and although the sandy body and filler of quartz and a little mica resemble those of the remainder found in this area, it is harder and the outer surface is smooth and burnished. The

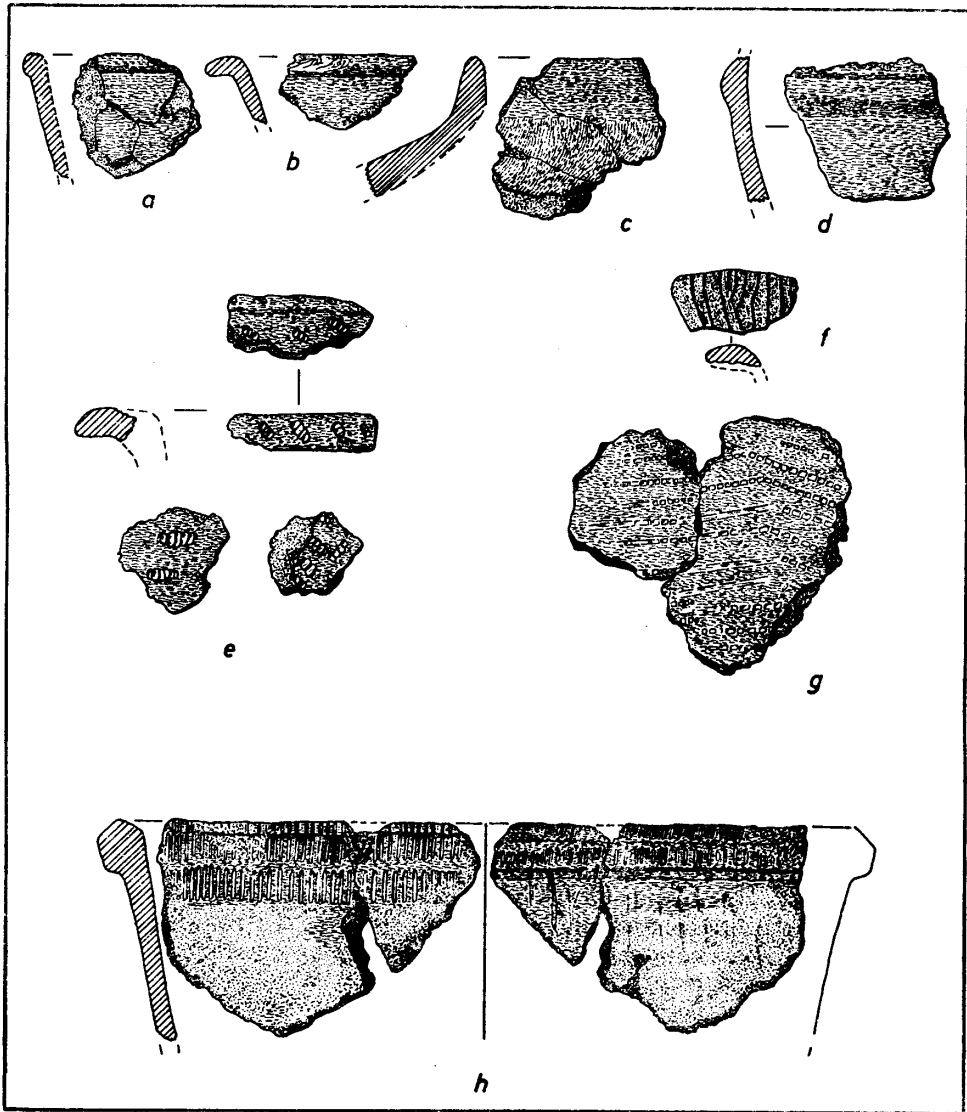


Fig. 11—Mid Gleniron II; Pottery. Scale $\frac{1}{2}$.

inner surface is abraded. These sherds appear to have belonged to a jar with a vertical neck and simple rim (fig. 11, c).

All the sherds found in the area of the revetment near the entrance to the lateral chamber appear to be of undecorated Neolithic pottery. Their abraded condition suggests that they may have lain on the former ground surface for some, probably short, time before being sealed beneath cairn material.

d) **Area of terminal chamber.** A number of sherds belonging to two pots lay scattered at different levels throughout the area of the destroyed terminal chamber. On account

of this disturbance it was impossible to determine any stratigraphical relationship between the two. The pots appear to be respectively a bowl of Peterborough ware and a Food Vessel.

i) Peterborough ware (fig. 11, g). This vessel is represented by a quantity of small sherds, the largest measuring $1\frac{1}{2}$ ins. (3.8 cm.). All but two sherds belong to the body of the pot. Its shape is unknown, but the curvature of a few sherds suggests that it may have been a bowl. The two rim sherds are too small to allow an estimate of diameter.

The colour of the surviving parts of the sherds is sandy-fawn throughout. The body is of fine, compact sand, with a filler of large, rounded pebbles and more angular fragments

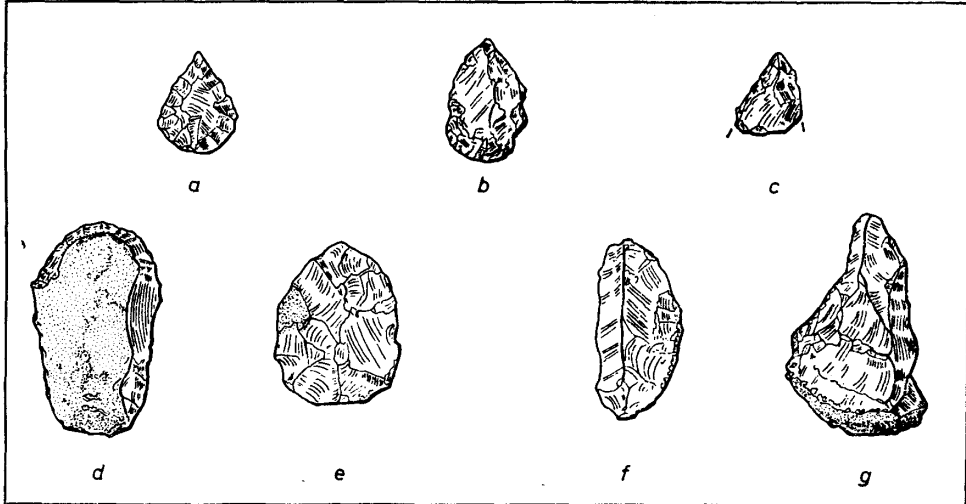


Fig. 12—Mid Gleniron II; Flint. Scale $\frac{1}{2}$.

of crystalline metamorphic rock measuring up to $\frac{3}{8}$ in. (9.5 mm.). The sherds are all abraded, and it seems probable that the inner surface and the body have disintegrated completely, leaving only the finer, harder clay of the outer surface, which appears to have been added as a slip. The outer surface is also much abraded, and the broken edges of individual sherds and even the decoration are rounded and smoothed, perhaps the result of prolonged exposure to wind and rain. If so, it is not known whether this occurred before or after the destruction of the terminal chamber. It may be remarked, however, that the sherds of Food Vessel found in the same area do not display comparable weathering.

The rim is represented by the rounded edge of what probably was an everted 'ledge' rim. The surviving part of the upper surface and the outer edge are each decorated by a single diagonal row of whipped-cord impressions. Between approximately one-quarter and one-third of the surviving wall-sherds are decorated with similar impressions. The small size of the individual sherds prevents a reconstruction of the overall design, but the proportion of decorated to undecorated sherds suggests that part only, perhaps the upper, of the vessel was decorated. In all but one instance the impressions appear to be arranged parallel with each other. One sherd, however, retains a V-shaped arrangement of the impressions.

The surviving features may each be paralleled closely among sherds found in Luce Sands.²⁷¹ There can be little doubt that the former belong to a pot of Peterborough ware, probably a Mortlake bowl.

²⁷¹ Unpublished: Hunterian Museum, University of Glasgow. I am grateful to Mr E. W. MacKie for drawing my attention to this.

ii) **Food Vessel** (fig. 11, e). This is represented by wall-sherds only, 7/16 in. (1.1 cm.) thick. The texture is fine, hard and has a smooth sand-coloured outer surface. Its inner surface is rather more sand-grey in colour, with some darker areas. The fine, grey, sandy body has a filler composed mostly of very small fragments of quartz and some crystalline metamorphic rock. Surviving decoration consists of lines of comb-impressed ornament, apparently arranged in a series of linked multiple chevrons.

Apart from the decoration there are no other morphological features, but the texture differs markedly from both that of the Neolithic sherds found in Mid Gleniron II and that of the cinerary urns from Mid Gleniron I. Texture and decoration may more closely be paralleled among Food Vessels, such as that from Portpatrick in Wigtownshire.²⁸ Comb-impressed ornament arranged in a pattern of multiple-chevrons occurs on a Food Vessel from Carrickinab, Co. Down, in the north of Ireland. Among its associated artefacts was a bronze awl similar to that found with urn G from Mid Gleniron I (cf. *supra* p. 53).

e) **Forecourt**. A number of sherds were found in the forecourt. Although they lay at levels varying from the former ground surface to a little more than 1 ft. above that level, with few exceptions the sherds were restricted to the more easterly part of the area occupied by the semi-circular blocking described above (cf. *supra* p. 62). Some sherds were found inserted between stones of the blocking. In contrast, sherds were not found either below or among the stones of the walling built to support the façade.

At least two types of pottery may be distinguished from surviving rim-sherds; undecorated and decorated.

i) **Undecorated sherds**. There are at least four rim-sherds which are very small and much abraded, but both simple and hooked forms appear to be represented. They were associated with small wall-sherds of very fine, hard pottery, the thickness of which varies between 5/32 in. (4 mm.) and 5/16 in. (8 mm.). The texture of most of these sherds is hard, sandy, with a filler of very small fragments of quartz. There is some evidence of burnishing.

These rim-sherds lay on the former ground surface beneath the blocking.

ii) **Decorated sherds**. Two types of decorated rim may be identified. The first is represented only by two thin, abraded fragments of the upper part of an apparently everted 'ledge' rim, decorated with fine transverse fluting (fig. 11, f). The texture is similar to that of the undecorated wall-sherds found on the former ground surface below the blocking. These rim-sherds were found associated with similar sherds, including one with an apparent shoulder, but lay among the stones of the blocking.

The second type of decorated pottery is represented by a number of sherds which were found on the former ground surface and among the stones of the blocking. The largest and best preserved sherds (fig. 11, h) were found immediately outside the entrance to the terminal chamber. At least two vessels are represented but they compare closely with each other.

The surfaces are sand-coloured with either a sand-coloured or dark-grey body. The texture is fine, hard and sandy, with a filler of very small fragments of quartz and a little mica. Although most sherds are much abraded, from some of the better preserved sherds it may be seen that the outer surface and at least part of the inner were smoothed, and perhaps a slip was added. It is also possible to see from some sherds that the faceted or angled rim was added separately to the wall of the vessel. The outer diameter of the rim is approximately 8 ins. (20.4 cm.), the rim is ½ in. (1.25 cm.) thick, and the average thickness of the wall is ¼ in. (6.25 mm.). Although none of the surviving sherds displays a shoulder, the curvature of the wall below the rim suggests that these were shouldered bowls.

Decoration consists of fine, straight incisions arranged radially on the facets of the rim, and in two vertical rows immediately below the rim in the interior. On account of abrasion, it is not known whether the outer surface was decorated, although there are faint traces of what might have been fine vertical fluting immediately below the rim.

f) **Body of cairn.** Two sherds were found in the body of the cairn. One, a very small abraded fragment, lay on the former ground surface near the northern end of the cairn. The other, larger, sherd lay among cairn material. Both are featureless, but may be part of one vessel. The surfaces are pink-coloured with a dark-grey body, and a filler of widely spaced small fragments of quartz. It is possible that both sherds had been refired. Unabraded areas are hard, smooth, with evidence of slip. The larger sherd is $\frac{3}{8}$ in. (9.5 mm.) thick.

These sherds do not compare at all with those found elsewhere in the cairn.

Flint and Chert

A number of flakes and lumps of flint were found in the body of the cairn. The largest concentration lay under and among the stones of the revetment, close to the entrance of the lateral chamber, and many were associated with sherds of pottery. Many flakes and lumps retain part of the cortex of nodules of beach-pebble flint from which they were struck. One of the larger flakes has retouching around part of the edge (fig. 12, g), and two others show signs of use.

There are four certain, and part of a fifth possible, flint artefacts, and one chert arrowhead.

a) **Leaf-shaped arrowheads.** The only find of flint from the forecourt is a small leaf-shaped arrowhead (fig. 12, a). It lay in the eastern part of the forecourt, under and close to the edge of the blocking. The arrowhead is $1 \frac{1}{32}$ in. (2.65 cm.) long, and its maximum thickness is $\frac{1}{8}$ in. (3.25 mm.). It is made of translucent, fawn and pink mottled flint.

A roughly worked leaf-shaped arrowhead of weathered yellow chert lay under the revetment to the south-east of the entrance to the lateral chamber. It is $1 \frac{1}{4}$ in. (3.2 cm.), long, and its maximum thickness is $\frac{1}{4}$ in. (6.5 mm.) (fig. 12, b).

Among flint found under the revetment in the same area were seven fragments of burnt flint. The largest appears to be worked, and may be part of a leaf-shaped arrowhead (fig. 12, c).

b) **Scrapers.** A large round-nosed scraper of flint lay in the disturbed area of the terminal chamber. Its upper surface retains a large area of cortex, and the under surface is unworked. It is $2 \frac{3}{16}$ in. (5.5 cm.) long, and its maximum thickness is $\frac{3}{8}$ in. (9.5 mm.) (fig. 12, d).

A rather more roughly worked flint ovate scraper was found among waste material under the revetment to the south-east of the entrance to the lateral chamber. It is $1 \frac{11}{16}$ in. (4.3 cm.) long, and its maximum thickness is $\frac{7}{16}$ in. (1.1 cm.) (fig. 12, e).

A fine, lunate flint scraper or knife was found in the same area. It is $1 \frac{13}{16}$ in. (4.6 cm.) long, and its maximum thickness is $\frac{5}{16}$ in. (8.00 mm.) (fig. 12, f).

DISCUSSION

The structural features of Mid Gleniron II may conveniently be considered in relation to those of Mid Gleniron I. Similarities and differences are both apparent.

Both cairns appear to be of multi-period construction, in which an inner cairn or cairns were enclosed in a later structure. In its final state the length of each cairn exceeds its width, each has a straight end and sides, defined by a revetment. A terminal chamber, which in neither cairn was the earliest structure, is entered from a carefully blocked forecourt, through a façade built of orthostats and intercalary dry-stone walling. Each cairn has a lateral chamber.

Although the axis of both cairns has an approximately north-south orienta-

tion the forecourt of Mid Gleniron I is at the northern end, and that of Mid Gleniron II at the southern. The lateral chamber of the latter cairn opens from the east, and that of Mid Gleniron I from the west. These contrasts appear to have resulted from the sequence of construction in each cairn. The lateral chamber of Mid Gleniron II, for example, was earlier than the terminal, whereas at Mid Gleniron I the lateral chamber appears to have been built at a relatively late stage within the structural sequence.

The choice of orientation for the forecourt of Mid Gleniron I presumably was governed by the position of existing structures. If it may be accepted that the two inner cairns and their chambers were originally independent structures set in tandem, then it would have been impossible to have built the long cairn in any position other than that actually built. The low ridge on which the cairn was built was perhaps a factor influencing choice of site by the original builders. When the time came for the construction of the façade, the decision to retain access to the northern chamber appears to have determined the position of the forecourt at the northern end of the cairn.

Different considerations appear to have applied in the case of Mid Gleniron II. It would have been possible to have built the second chamber in front of, and in line with, the earlier, and so have produced an east-west orientation, with a forecourt at the east. Although there is a downward slope some 10 feet to the west of the rear of the inner cairn, by analogy with Mid Gleniron I there would have been sufficient level ground on which to have extended the long cairn to the rear of the inner cairn. It may have been that in each instance, the builders of the straight-sided cairn wished to retain access to an earlier chamber, while themselves adding a new chamber. At Mid Gleniron I access to the northern chamber was retained, and the lateral chamber apparently added. It would not have been possible here, both to have graced the latest chamber with a forecourt, assuming that the lateral chamber had been the last to be built, and to have built a conventional long cairn. Had it been decided to allow access to the original chamber of Mid Gleniron II, a tandem arrangement of the earlier and the later chamber would have been unsuitable. It is possible, however, that the decision to include the earlier chamber as a lateral in the composite structure was not influenced by any such considerations. Whatever the reason or motive, when the choice was offered of either a southern or a northern forecourt, the former was chosen.

Any opinion expressed as to the relative competence of the builders of each cairn is necessarily subjective. There is little doubt, however, that the standard of construction exhibited in the long cairn of Mid Gleniron I exceeds that of the neighbouring cairn. The contrast is particularly noticeable in the construction of the respective façades. Whereas that of Mid Gleniron I displays a high competence in both planning and execution, that of Mid Gleniron II appears to have lacked stability to such an extent that it was felt necessary to build a supporting wall as a precaution against total collapse. Although, on account of later disturbance, rather less evidence is available for the respective revetments, it

appears that in this respect, too, Mid Gleniron I was superior. A distinction between the techniques used here, however, must also be taken into account, as at Mid Gleniron I 'post-and-panel' technique was used, and dry stone walling alone at Mid Gleniron II.

On the basis of these observations it is not possible to determine any precise chronological relationship between the two cairns. Inadequacies in construction might equally be interpreted either as the work of inexperienced builders, or as evidence of waning skill. The paucity of Neolithic artefacts in Mid Gleniron I is a further hindrance to interpretation.

While allowing these limitations, the following sequence may be offered as an hypothesis. The small size and simple method of construction of the lateral chamber of Mid Gleniron II suggest that this may have been the earliest tomb. Some support for this is provided by the absence of decorated pottery, not only from the chamber itself, but also from the area immediately outside the entrance. It is possible, but cannot be proved, that some of these sherds had been cleared from the chamber. Some at least lay under the revetment of the straight-sided cairn.

The second tomb may have comprised the southern chamber and inner cairn of Mid Gleniron I. Although there are more than one orthostat in each side-wall, these orthostats are small and the chamber itself is relatively small. Reasons have been offered for suggesting that this chamber is the earliest of the three at Mid Gleniron I (cf. *supra* p. 54).

The northern chamber and inner cairn at Mid Gleniron I may have been built next. Had the practice of enclosing small cairns within straight-sided cairns already been accepted by this time, it would be reasonable to assume that the construction of the northern chamber might in that case have been contemporary with that of the straight-sided cairn, as appears to be so at Mid Gleniron II. At Mid Gleniron I, however, it has been suggested that the northern inner cairn had an independent existence for some, perhaps short, period of time (cf. *supra* p. 55). Although the side-walls of this chamber are each formed by a single orthostat, these orthostats are more massive than those of the lateral chamber in Mid Gleniron II. This at least suggests increasing competence in handling stones of truly megalithic proportions.

It is more difficult to attempt to assign priority in the construction of the straight-sided cairns and façades. They may have been approximately contemporary. Certain factors nevertheless appear relevant. The lateral chamber of Mid Gleniron I and the terminal chamber of Mid Gleniron II appear to have resembled each other in their use of two orthostats in each side-wall. The absence of post-and-panel technique in the straight-sided revetment of Mid Gleniron II might suggest that this had been built prior to the arrival of this technique in the area, and that the final stage of construction at Mid Gleniron II therefore preceded that of Mid Gleniron I. The use of rudimentary post-and-panel technique in the façade of Mid Gleniron II, however, perhaps argues against this. Interpretation based on a comparison of the two façades is neces-

sarily subjective, but it does seem reasonable to argue that the superior construction and choice of larger orthostats of the façade of Mid Gleniron I were the work of experienced builders. There is no evidence, of course, that any such experience had previously been gained at Mid Gleniron II. It may have been gained elsewhere.

The dissimilarity in the final blocking of the respective forecourts perhaps suggests some difference of ritual tradition. Potsherds appear to have been incorporated intentionally in the blocking at Mid Gleniron II; they are absent at Mid Gleniron I. The three small putative monoliths in the forecourt of the latter were not paralleled at Mid Gleniron II.

A *terminus post quem* for the closure of the forecourt of Mid Gleniron II is provided by sherds of undecorated and decorated Neolithic pottery which lay among the blocking. Comparable evidence is not available for Mid Gleniron I. The decorated rim-herd, which appears to belong to a ceramic tradition later than that of the sherds from the forecourt of Mid Gleniron II, from the adit of Mid Gleniron I might suggest that the latter continued in use after the forecourt of Mid Gleniron II had been blocked. This is by no means certain, for this sherd may represent later disturbance, hinted at by the Beaker sherd in the northern chamber, and perhaps comparable with that suggested by the occurrence of Peterborough and Food Vessel sherds in the disturbed area of the terminal chamber at Mid Gleniron II. The few sherds of apparently undecorated Neolithic pottery in the forecourt of Mid Gleniron I are of little help in this context, as they lay on the former ground surface and were not incorporated in the blocking.

Sherds of Food Vessel from Mid Gleniron II, and perhaps the Beaker sherd from Mid Gleniron I, suggest that the terminal chambers of both cairns may have been re-used in the earlier part of the second millennium B.C. The body of the cairn of Mid Gleniron I, but not that of Mid Gleniron II, was used for later burial by people who placed the cremated remains of their dead in cinerary urns. It is possible that Mid Gleniron I retained some ritual significance at that time and this supposition is supported by the close proximity of the burial cairn of Mid Gleniron A. Not all Bronze Age funerary activity in the area was confined to Mid Gleniron I. Some 125 yards to the north-east of Mid Gleniron II is a large, circular and apparently undisturbed cairn.²⁹ Although it is not possible to be certain without excavation, it is probable that this cairn dates from the Bronze Age.

CONCLUSION

Reference was made in the introduction to factors which influenced the decision to excavate the two chambered cairns at Mid Gleniron Farm. The two cairns have been compared and evidence of multi-period constructions discussed. It remains, in conclusion, to set briefly the results of the excavation within a wider context, principally that of chambered tomb and Neolithic studies generally in the south-west of Scotland.

²⁹ RCAHM(S) Wigtown 1912, 94, No. 260, fig. 62.

Scott has published recently an extended study of the Clyde cairns of Scotland.³⁰ In its developed form a tomb of this type comprises a megalithic burial chamber divided into two or more segments by a septal slab or slabs, and set at one end, commonly the more easterly end, of a straight-sided cairn. The cairn is frequently trapezoidal on plan, and may be of a length considerably in excess of that necessary to enclose the chamber adequately. The chamber is approached through a concave forecourt, the façade of which is built normally of orthostats and intercalary dry-stone walling. This 'post-and-panel' technique of using uprights and walling may also be employed in the revetment.³¹

Accepting as criteria the morphological features of a Clyde cairn as defined above, it is apparent that neither tomb at Mid Gleniron conforms in every particular. Both cairns have façades of post-and-panel construction, that of Mid Gleniron II being far less competently built than that of its neighbour. There is a revetment built of uprights and dry-stone walling around Mid Gleniron I, but the components are not arranged as regularly as in true post-and-panel technique. Although the final stage of construction included the building of straight-sided cairns, neither is truly trapezoidal on plan, nor of a length comparable with that of developed Clyde cairns. None of the chambers is segmented. These facts suggest that the final stage of construction had been reached at both Mid Gleniron I and II after the tradition of building a façade in post-and-panel technique had reached Galloway. It also seems possible either that this stage had been reached prior to the arrival of the long trapezoidal mound in the area, or that, if knowledge of it had been available, it had not been adopted.

The chambered cairns of Galloway are located in an area peripheral to, and south of, the main concentration of Clyde cairns in Argyll and Arran.³² Assuming that some at least of the influences which contributed to the development of the Clyde cairn came from the south, it is not surprising that as a group Gallovidian chambered cairns lack a homogeneity of plan. It may be supposed that some such tombs, or at least the earlier components of multi-period cairns, are to be numbered among the earliest to have been built in Scotland. Some may have ceased to be used before the fully developed type of Clyde cairn had evolved. Tombs which display all the features of a developed Clyde cairn in fact are unknown in Galloway, although some tombs, in addition to those at Mid Gleniron, possess one or more of the Clyde cairn's structural characteristics. This need not imply that such tombs in Galloway had been influenced from the Clyde area proper. It is possible that some of these structural features had been adopted in Galloway as knowledge of them and their cult implications were borne through the area.

Scott's study of the Clyde cairns now allows certain tombs in Galloway to be seen in a more meaningful context. In particular, his discussion of the possible structural history of the two cairns at Cairnholy (KRK 2 and 3) is apposite to any consideration of the relevance of the two at Mid Gleniron.³³

30 in T. G. E. Powell et al. 1969, 175-222, with Inventory of Clyde cairns, *ibid.*, 309-28.

31 The term 'post-and-panel' was used first by S. Piggott 1954, 157.

32 Scott, *op. cit.*, fig. 61.

33 *ibid.*, 193-97.

He suggests that the present rear compartment of Cairnholy I was part of the primary monument, a simple box-like chamber which he terms a **protomegalith**. To it were added successively a pair of portal stones, an antechamber with portals and finally a crescentic façade of post-and-panel construction. The construction of the latter would presumably have been contemporaneous with that of the long cairn. This sequence must remain hypothetical without further excavation, but Scott cites possible parallels elsewhere in the Clyde province.

Few unaltered protomegaliths are known to exist in south-western Scotland. Two reasons for this may be suggested. In the first place, small and simple structures may easily have been destroyed in more recent times without leaving any trace. This would seem more probable, were it to be accepted, as seems not unlikely, that early tombs would have been built relatively close to the coast. This in turn might imply that they were situated in areas which in more recent times might have invited destruction for reasons of land usage, rather than disturbance incidental to pillage, which may be observed in some of the more massive inland and upland cairns. Within the Clyde area Scott has identified unaltered possible protomegaliths at Cairnmore, Ballochry in Argyll, and at Little Dunagoil in Bute. To these, the writer would add the remains of what appears to have been a simple chamber at Newton, Anwoth (KRK 1) in Kirkcudbright. It is not a protomegalith according to Scott's strict definition, but it does not appear to be the remains of an elaborate structure. Like the other two, it is situated near the shore, in this case to the south of Cairnholy. It is possible, too, that the chambered structure of Mid Gleniron B should be considered in a comparable context (cf. *infra*. p. 94).

The second reason for the paucity of unaltered protomegaliths or simple burial chambers generally is that some undoubtedly were incorporated subsequently in larger structures. This apparently was so in the case of both cairns at Mid Gleniron. As Scott has argued, both cairns at Cairnholy similarly may have been of multi-period construction and comparable sequences may be suspected in the structural history of some other Clyde cairns.

Appreciation of the wider significance of multi-period construction therefore may contribute something to the solution of the long-standing problem of origins of localised types of tomb in Britain and Ireland generally, and not only in south-western Scotland. Rather than seek unprofitably for precise external parallels for the sometimes large and complex chambered cairn to be found in certain relatively well-defined areas, it appears now more reasonable to enquire whether or not there is evidence of multi-period construction. Indeed, since 1960, a number of tombs beyond the Clyde region have been proved by excavation to have been of multi-period construction.³⁴

³⁴ e.g. Dyffryn Ardudwy (MER 3) Merioneth: T. G. E. Powell 1963 Wayland's Smithy (BRK 1) Berkshire: R. J. C. Atkinson 1965 Annaghmare, Co. Armagh: D. M. Waterman 1965 Barnes Lower, Co. Tyrone: A. E. P. Collins 1966 Tulach an t-Sionnaich, Caithness: J. X. W. P. Corcoran 1966, 5-22.

Surface indications³⁵ and re-examination of earlier excavation reports³⁶ may suggest the existence of others. With the realisation that the Neolithic period in Britain and Ireland extended over more than one millennium, it is obvious that there would have been adequate time in which localised types of tomb could have developed. Some of the more simple forms may have been built relatively early in the period. At a time when incoming agriculturalists were learning to exploit the potential of their chosen areas of settlement, perhaps with a growing population supported by increasingly successful exploitation of the environment, there would have been greater opportunity of building more complex forms. This process may have gained additional vigour, had the area received peoples or ideas derived from outside that area.

As Scott has suggested, the long trapezoidal cairn and the façade of the developed Clyde cairn were adopted from external sources and grafted on to a segmented chamber derived locally from the protomegalith. The trapezoidal cairn, dry-stone and post-and-panel construction may have originated in the Cotswold-Severn region and spread to the Clyde area by way of north-western Wales.³⁷ On the other hand, no known cairn in Galloway, with the exception of Cairnholy I (KRK 2), has a truly long cairn comparable with either those of the Cotswold-Severn region, or that of the fully developed Clyde cairn.³⁸ It may be significant that Cairnholy I is situated towards the eastern limit of known distribution of chambered tombs in Galloway. It is not impossible that some influences derived from the long barrows of eastern England may have crossed the Pennines to contribute to developments in Galloway, although not necessarily in south-western Scotland generally. A possible link may eventually be recognised in the little studied long cairns of Dumfriesshire.³⁹

Apart from the use of post-and-panel construction, however, other influences of possible Cotswold-Severn derivation may be identified in Galloway. These are to be seen, for example, in cairns such as High Gillespie and Caves of Kilhern in Wigtownshire, and Drannandow in Kirkcudbright.⁴⁰ Each may be of multi-period construction, and each has lateral chambers more appropriate to Cotswold-Severn than to Clyde practice. Further north in Ayrshire, the long cairn at Cuff Hill also has lateral chambers, and has affinities with Cotswold-Severn cairns.⁴¹

The adoption of the concave façade in the Clyde area is regarded by Scott as a result of influences derived from Ireland.⁴² It is not germane in the present limited context to discuss in detail factors relevant to Clyde cairns as a whole. Although Scott does offer evidence which supports the hypothesis of influences derived from Ireland having affected developments in the western

³⁵ e.g. Long cairns of Na Tri Shean type in Scotland: A. S. Henshall 1963, 75. Certain long cairns in the Cotswold-Severn region: J. X. W. P. Corcoran in T. G. E. Powell et al. 1969, 73-104, *passim*.

³⁶ e.g. Ty Isaf (BRE 5), Brecon: Corcoran *op. cit.* 84-86.

³⁷ *ibid* 102-103.

³⁸ Comparative plans and brief descriptions of chambered cairns in Galloway are assembled conveniently in S. Piggott and T. G. E. Powell 1949, 142-44.

³⁹ J. G. Scott in T. G. E. Powell et al. 1969, 321-22.

⁴⁰ See footnote 38.

⁴¹ Scott, *op. cit.*, 211-12.

⁴² *ibid*, 210.

part of the Clyde area,⁴³ the question of the origins of the crescentic façade still remains open to discussion. Even were it to be proved that this type of façade was derived from Ireland, the problem of the origin of the façade in Ireland itself would remain.

The forecourt as a structural, and presumably ritual, element is a recurrent, although a not universal feature of several classes of chambered tomb from the Mediterranean to Britain and Ireland. For this reason it is difficult to suggest immediate prototypes for those on each side of the North Channel. Excavation, however, has revealed that the entrances to two Portal Dolmens in Wales were each flanked by façades. That at Dyffryn Ardudwy (MER 3) in Merioneth appears to have been a simple structure, consisting of a rough walling of horizontally laid stones.⁴⁴ The façade at Pentre Ifan, Pembrokeshire, is more massive, and includes large orthostats.⁴⁵ A similarly orthostatic façade somewhat V-shaped on plan, appears to flank the Portal Dolmen at Garne Turne in the same county.⁴⁶ These last two tombs demonstrate that the entrance to relatively simple chambers, lying to the south of both the Clyde and Carlingford areas, may be flanked by an orthostatic façade. Dyffryn Ardudwy is significant on account of its deposit of early Neolithic potsherds,⁴⁷ which serves to counter-balance the unreasonably late date frequently attributed to the origin of Portal Dolmens.⁴⁸ Taken together, these facts suggest that a tradition of building façades, perhaps already partially orthostatic, may already have been in existence in the Irish Sea littoral, from which both Carlingford and Clyde traditions may later have drawn. The trapezoidal cairn adopted by both of these traditions appears to have been derived independently from a common source. The derivation of the façade may have followed a similar pattern.

Considerations such as these may be relevant to the apparently anomalous situation at Mid Gleniron. Whereas the façade of Mid Gleniron II is shallow, that of Mid Gleniron I is markedly concave. Typologically early façades in the Clyde region appear to be almost flat, as at Crarae (ARG 11) in Kintyre and Monamore (ARN 9) on Arran. In both cairns the façades are of post-and-panel construction. At Beacharra (ARG 27), also in Kintyre, the façade is of similar plan, but is built entirely of dry-stone walling. The façade of Mid Gleniron II compares with all three on plan, but more particularly with the last two. In each of these three, the line of the façade is almost straight, apart from the outer section on the right (viewed from the forecourt), where it curves slightly forward of the relatively straight alignment. Scott would consider shallow façades of this plan as belonging to the transition from the Early to Mid Neolithic in the area. The absence of a truly trapezoidal cairn at Mid Gleniron II need not be significant in such an early context.

The absence of such a cairn at Mid Gleniron I, which has a fully concave

43 *ibid.*, 216-17.

44 T. G. E. Powell 1963, 21.

45 W. F. Grimes 1948.

46 W. F. Grimes 1932, 91.

47 Powell, *op. cit.*, 23.

48 e.g. R. De Valéra 1960, 64.

façade of competent post-and-panel construction is less easy to understand if Scott's derivation from Ireland is accepted. He suggests that the fully concave façade was adopted in the Clyde area at the transition from Middle to Late Neolithic, and at a time when the long trapezoidal cairn was in general use. At Mid Gleniron I, however, it would imply that a protomegalith remained in use at that time. While this is not impossible, the alternative suggestion that the concave façade may have been derived from further south along the Irish Sea at an earlier date would resolve this apparent anomaly. It is perhaps relevant to note that at Ballynamona Lower in Co. Waterford in the south-east of Ireland, the entrance to a segmented chamber was flanked by a small, partially orthostatic façade, but apparently lacked a truly long cairn.⁴⁹ The chambered cairn at Shanballyedmond in Co. Tipperary, which lies further inland, has comparable features.⁵⁰

It need not be assumed therefore, that influences which contributed to the development of the Clyde cairn proper necessarily were adopted in Galloway. This is implicit in Scott's rejection of the term **Clyde-Solway** cairn in favour of **Clyde** cairn.⁵¹ Apparent lack of homogeneity of plan does not allow the chambered tombs of Galloway to be grouped together or referred to as the **Galloway Culture**. In common with the peninsulas of Cornwall, south-western and north-western Wales, Galloway appears to have been something of a transit area through which influences derived from a number of external sources seem to have passed, without producing a distinctively local type of tomb.

Any discussion of possible contacts between groups of chambered tombs must rely largely on a consideration of morphological similarities among the tombs themselves and to a lesser extent on the interpretation of any artefacts found. This is inevitable, not only on account of extensive disturbance and robbing of burial chambers, but also because of the relatively small number of tombs which have been excavated competently. Even in the case of undisturbed chambers, however, artefacts which may be found may post-date by generations or even centuries the construction and original use of the tomb, for many chambered tombs appear to have been intended for collective burial over a period of time. Such a problem of interpretation is magnified in the study of multi-period tombs. It is rarely possible in Britain to relate grave furniture to the successive use of a tomb as has been attempted in the case of Beacharra (ARG 27) in Kintyre⁵² and Cletraval in North Uist.⁵³

Potentially the most useful artefacts for discussion from Mid Gleniron are the sherds found among the blocking of the forecourt of tomb II. There can be little doubt that they were put there, probably intentionally, at the time when the blocking was placed in position. The blocking in the area of the entrance to the terminal chamber was laid carefully, and this would appear to be associated with the end of the primary use of the tomb, that is the use for burial

49 T. G. E. Powell 1938.

50 M. J. O'Kelly 1958.

51 J. G. Scott in T. G. E. Powell et al. 1969, 175-80.

52 *ibid.*, 199-201.

53 W. L. Scott 1935.

of the chamber by its builders or, more likely, the descendants of the builders. The construction of the chamber, the façade and straight-sided cairn therefore must at least be contemporary with, or more probably earlier than, the manufacture of the pottery from which these sherds were derived.

The most meaningful are the decorated rim-sherds described on page 68. It is unfortunate that close parallels for the pottery with incised decoration appear at present to be unknown (fig. 11, h). The relatively undeveloped form of the rim, the thin walls, fine texture and filling, the delicacy of the decoration and absence of cord-ornament, together suggest that this pottery should antedate the use of Peterborough or allied wares in Galloway. Some of the features of the sherds from the blocking of the forecourt of Mid Gleniron II may be matched in a general manner within the known corpus of British Neolithic pottery. The shape of the pot, if indeed it had a shoulder, is paralleled at Windmill Hill in Wiltshire, where some pots of this type had closely set vertical incisions on the rim and the inner and outer surfaces above the shoulder.⁵⁴ Somewhat similar pottery is known elsewhere in southern and eastern England, as at Hurst Fen in Suffolk.⁵⁵ In each case, however, the lines of incisions on the inner surface are longer than those at Mid Gleniron II, and there is no known parallel for the double row of shorter lines. Owing to abrasion it is, of course, not certain that the outer surface below the rim of the pottery from Mid Gleniron was decorated. Although the method of construction of the rim by the addition of extra strips of clay, is similar to that of some pots from Windmill Hill,⁵⁶ the rims from the latter site and those from Hurst Fen do not have the sharply 'faceted' or angled cross-section of the Mid Gleniron sherds. Decoration across the rims of the English pots is continuous and not separated into shorter incisions as at Mid Gleniron.

There is a certain similarity between the profile of faceted or angular rims from Mid Gleniron and those from Knockiveagh in Co. Down in the north of Ireland. Decoration on the inner face of the latter sherds also is reminiscent of Mid Gleniron in that there are two rows of vertical lines. The lines, however, are not arranged as regularly as those of Mid Gleniron and appear to be fluted rather than sharply incised. There is also decoration on the upper two facets of the rim, one with closely set lines of fluting and the other with a single line of shallow impressions.⁵⁷ In view of the uncertainty of whether or not the outer surface of the sherds from Mid Gleniron were decorated, it may be noted that the relevant sherds from Knockiveagh are not decorated below the rim on the outer surface.

It would appear, therefore, that this type of pottery from Mid Gleniron has certain but not precise affinities with some pots from southern and eastern Britain and north-eastern Ireland. Were all these pots to be considered as

⁵⁴ I. F. Smith 1965, 68, fig. 26, P 164, P 174.

⁵⁵ J. G. D. Clark, E. S. Higgs and I. H. Longworth 1960, 235-39.

⁵⁶ Smith *op. cit.* 46-47.

⁵⁷ A. E. P. Collins 1957, 13-15, fig. 3, 1. Miss A. S. Henshall has drawn my attention to a sherd with faceted rim and decoration similar to that from Mid Gleniron II found in Culbin Sands, Moray, and now in the National Museum of Antiquities.

belonging to a distinct type, such pottery would form a very small class within the Neolithic ceramic tradition of Britain and Ireland as a whole. Beyond remarking its widespread distribution and its occurrence in different types of structure, further discussion is of little value, except to note that radio-carbon assay suggests that this pottery belongs to the earlier part of the Hiberno-British Neolithic.⁵⁸

Two small sherds of a different type of pottery were also found in the forecourt among the blocking stones. They appear to be fragments of the upper part of what may have been an everted "ledge" rim, decorated with fine transverse fluting (fig. 11, f), and may be compared with a similar sherd from the forecourt of a Clyde cairn at Monamore (ARN 9) on Arran.⁵⁹ Although pottery with this type of rim-decoration has generally been regarded as comparable with, if not derived from, Lyles Hill ware of Ireland, Scott has suggested recently that most Scottish exemplars should be termed **Rothesay** ware, and a parentage sought in southern Britain, perhaps partly in the pottery of Abingdon tradition.⁶⁰ The sherds from Mid Gleniron II are too small to be certain of the shape of the pot from which they were derived, although an associated sherd which may have belonged to the same vessel appears to have a slight carination. It is, therefore, not possible to compare them satisfactorily with any particular form of British pottery. Scott's fully developed Rothesay ware, however, would appear to date from the Middle Neolithic, and it may be that the sherds from Mid Gleniron II belong to an earlier phase, if any connection between the other type of decorated pottery from the forecourt and that from Knockiveagh is allowed. Rims with fluted rippled decoration are known on Grimston ware in Yorkshire.⁶¹ This type of pottery was found in the long barrow on Willerby Wold,⁶² from which radiocarbon dates of 3010 ± 150 B.C. (BM-189) and 2950 ± 150 B.C. (BM-188) have been obtained.⁶³ Fluted or rippled decoration, therefore, would appear to have been in use in eastern England during the first half of the third millennium B.C.

The only other meaningful sherds from Mid Gleniron II belonged to what appears to have been a jar with a short vertical neck and simple rim (fig. 11, c). They lay on the former ground surface below the stones of the straight-sided revetment near the entrance to the lateral chamber and either antedate, or are contemporary with, the building of the revetment. They seem to be broadly contemporary with the pottery from the forecourt.

There are few known pots of this type in Britain, but in view of possible influences in Galloway derived from the Cotswold-Severn region it may be

⁵⁸ Windmill Hill 2950 ± 150 B.C. (BM-73), 2570 ± 150 B.C. (BM-74). The latter date would appear to be more appropriate to this ware. Knockiveagh 3060 ± 170 B.C. (D-37).

⁵⁹ E. W. MacKie 1964, 25-26, fig. 4, 3.

⁶⁰ J. G. Scott in T. G. E. Powell et al. 1969, 205, 218. I am grateful to Mr Scott for allowing me to read in advance of publication a forthcoming discussion of Rothesay ware to be published as part of the excavation report of the Clyde cairn at Glenvoidean (BUT 1) on Bute, excavated by Miss Dorothy Marshall and Mrs Isobel Taylor.

⁶¹ N. Newbigin 1937, 194, 211, pl. XV, No. 10; S. Piggott 1954, 117.

⁶² T. G. Manby 1963, 187-89.

⁶³ T. G. Manby 1967.

significant that a similar pot was found at Nympsfield (GLO 13) in association with a bowl reminiscent of Ebbsfleet ware.⁶⁴ As Lynch remarks, the former has a certain resemblance to a vessel from the chambered cairn at Capel Garmon (DEN 3) in Denbighshire, an outlier of the Cotswold-Severn group.⁶⁵ A vessel of similar shape, but with an ornament of zig-zag incisions in Ebbsfleet style was found in a disturbed area of the passage of the Cotswold-Severn tomb at West Kennet (WIL 5), and compares with others from south-eastern England, including the type-site of Ebbsfleet in Kent.⁶⁶ Smith compares an undecorated bowl of similar type from Windmill Hill with plain necked jars from Maiden Castle, Dorset and possibly Hembury, Devon, where there are no indications of Ebbsfleet ware.⁶⁷ The period of use of the relatively uncommon necked jar may have extended from a time contemporary with the use of Hembury ware to that of Ebbsfleet ware. At Windmill Hill the earliest sherds of Ebbsfleet ware were contemporary with Windmill Hill ware, and from one part of the site there is a radiocarbon date of 2570 ± 150 B.C. for this phase.⁶⁸ The simple rim of the vessel from Mid Gleniron might suggest a relatively early date.

Affinities of the few meaningful sherds from Mid Gleniron II suggest that the primary use of the cairn may have ended perhaps around 2500 B.C. Construction of what had become the lateral chamber, and its cairn, would have been earlier. The remaining sherds of apparently undecorated pottery lack any diagnostic features, and appear to belong to a class of plain, sometimes carinated, pots which were widespread in Britain during the earlier part of the Neolithic. The flint artefacts similarly are generalised types, the analogues of which are widespread.

Reference has been made to the paucity of Neolithic artefacts from Mid Gleniron I. The only comment which may be allowed is that the few undecorated sherds compare with those of the neighbouring cairn. There is a possibility that the northern chamber remained in use at a time when pottery with a heavy, decorated rim (fig. 6, a) was current. Absence of comparable pottery from the forecourt, however, argues against this. The affinities of this ware are more likely to have been contemporary with the sherds of Mortlake ware which were found in the disturbed area of the terminal chamber of Mid Gleniron II. It has been suggested that the latter should be attributed to later interference, perhaps contemporary with the Food Vessel, sherds of which were found in the same disturbed area.

It may seem inappropriate to look to southern and eastern England for parallels to artefacts from Mid Gleniron, but this is inevitable in the limited state of knowledge of the Neolithic period in regions nearer to Galloway. There can be little doubt, however, that during the Neolithic period in Britain

⁶⁴ E. M. Clifford 1938, 192, fig. 3.

⁶⁵ F. Lynch in T. G. E. Powell et. al. 1969, 161.

⁶⁶ S. Figgott 1962, 36, P. 8.

⁶⁷ I. F. Smith 1965, 57, 60, fig. 19, P. 79.

⁶⁸ *ibid.*, 11. This may be compared with a radiocarbon date of 2710 ± 150 B.C. (BM-113) for Ebbsfleet ware at the type-site.



Plate I—Mid Gleniron I: Upper—Southern chamber, showing west wall, from N.-E.

Lower—Southern chamber and north-eastern quadrant of inner cairn, from N.



View from this side.



Plate II—Mid Gleniron I: Upper—Southern chamber, paving, from S (view from side).

Lower—Lateral chamber, from W.



Plate III—Mid Gleniron I: Upper—Northern chamber, west wall of 'adit,' from E.

Lower—Façade, from N.-E.



Plate IV—Mid Gleniron I: Upper—Portal blocking, from N.
Lower—Quartz, 'pillar-stone' and 'arc,' from S.-W.



Plate V—Mid Gleniron I: Upper—Eastern revetment, east of north chamber, from N.-E.
Middle—Western revetment, west of north chamber, detail from N.-W.
Lower—left to right, Urns G. H. F., from S.-E.



Plate VI--Mid Gleniron II: Upper--Terminal chamber, with blocking in background, from N.

Lower--Terminal chamber, blocking removed, from S.

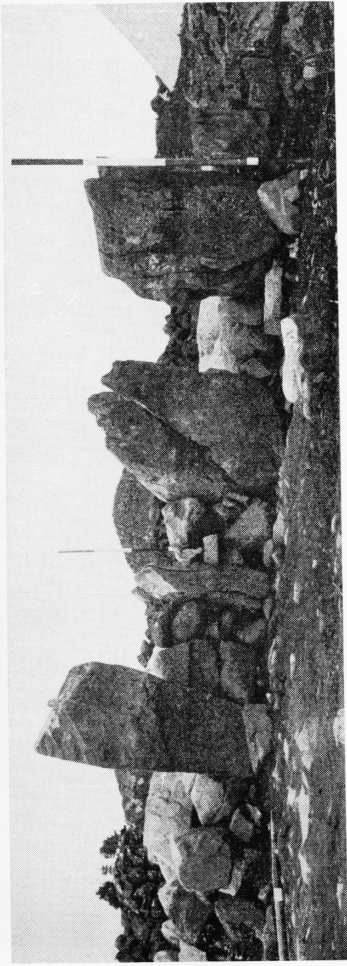
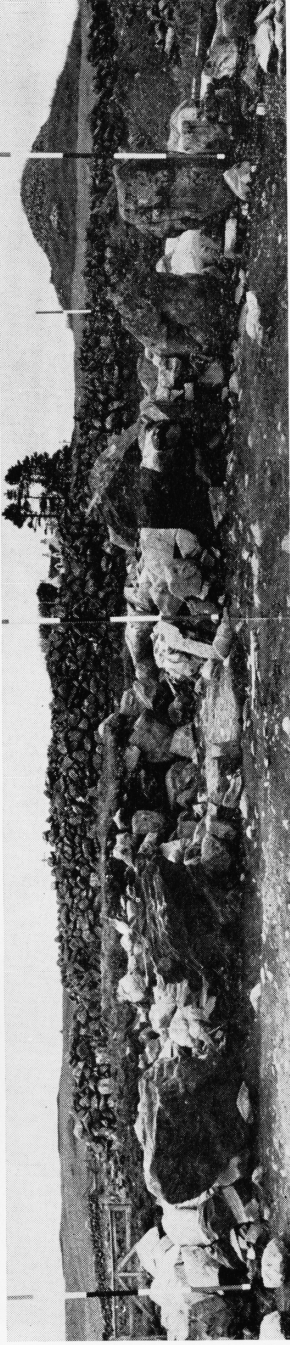
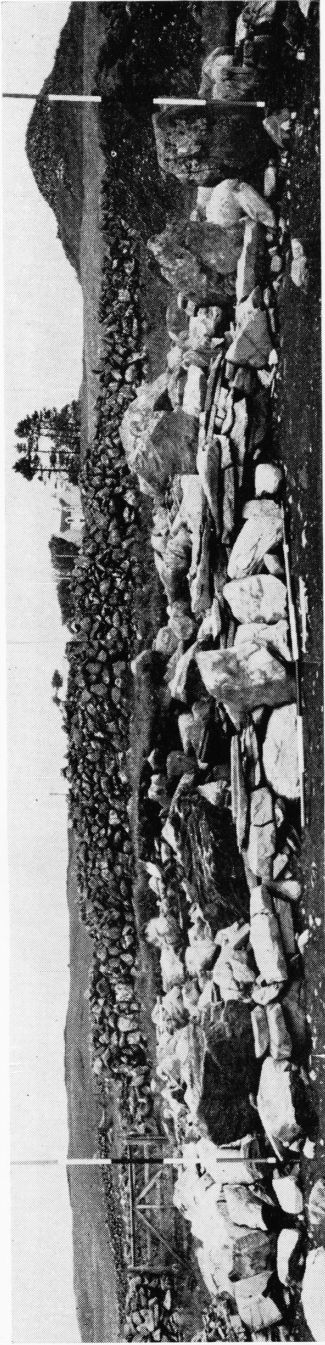


Plate VII—Mid Gleniron II:
Upper — Façade with 'precautionary' wall and entrance blocking, from S. Middle — Façade, blocking removed, from S. Left — Façade, eastern sector detail, from S.



Plate VIII—Mid Gleniron II: Upper—Inner Blocking, from N.
Middle—Lateral chamber, with blocking and outer revetment, from E.
Lower—Lateral chamber, blocking removed, from E.



Plate IX—Mid Gleniron A: Upper—Inner stone-setting, from S.

Middle—Mid Gleniron B: Orthostat and paving, from W.

Lower:—Basal course of north-eastern wall, from S.-W.

there was considerable movement of peoples and ideas, as is shown, for example, by the distribution of polished stone axe-heads. Such parallels as have been suggested, therefore, may not be invalid. One important fact which emerges from a study of artefacts from Mid Gleniron is that in neither cairn was there any evidence of the use of Beacharra ware, which is the most distinctive ceramic of the earlier Clyde cairns.⁶⁹ This at least supports the contention, based on a study of the cairns themselves, that influences which may have contributed to the development of the Clyde cairn proper did not necessarily affect Galloway to any significant extent.

Finally, brief reference may be made to two minor factors which had influenced the decision to excavate at Mid Gleniron. As far as possible relationships between the chambered cairns of Galloway and those of the Carlingford Culture in the north of Ireland are concerned, it has been shown that there are arguments for regarding the former as distinct from the developed Clyde cairn. As there are closer similarities between the Clyde and Carlingford cairns, it is perhaps irrelevant to attempt to link the latter with those of Galloway. Reasons have been given for suggesting that the façades at Mid Gleniron may have had an origin independent of Ireland. Beyond that, none of the known burial chambers in Galloway is comparable with that of the typical Carlingford cairn. There are grounds for believing that the evolution of the Carlingford cairn may have followed a development comparable with, but independent of, that of the Clyde cairn. Both may have shared common influences which produced in turn the concave façade and the long trapezoidal cairn. The segmented chamber of the Carlingford cairn may have developed from the Portal Dolmen. But the implications of this hypothesis are not germane to the present study.

The paucity of artefacts found at Mid Gleniron makes it unnecessary to draw comparisons with Neolithic pottery and other artefacts found in Luce Sands. The undecorated sherds, including rims, from Mid Gleniron may be compared with some pots from Luce Sands, but all are of a very generalised and widespread type.⁷⁰ Rim sherds with fine fluted decoration have been found in Luce Sands, although the rim appears to be more rounded than that of Mid Gleniron II.⁷¹ There do not appear to be parallels for the faceted or angled rim-sherds with fine incised decoration from Mid Gleniron II. The closest parallels ironically are those between sherds of Mortlake ware with whipped cord ornament found in Luce Sands⁷² and in an apparently secondary position at Mid Gleniron II.

⁶⁹ J. G. Scott in T. G. E. Powell et al. 1969, 198-205.

⁷⁰ I. J. McInnes 1964, 40-87.

⁷¹ *ibid.*, 64, fig. 2, No. 54.

⁷² *ibid.*, 68, fig. 5, No. 119. Also unpublished sherds in the Hunterian Museum, University of Glasgow.

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APPENDIX

CREMATIONS AND UNBURNT BONE FROM MID GLENIRON I

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The examination of the material follows the technique used on previous occasions by the writer (C. B. Denston 1965, 1966, 1967, 1968), and is based on procedures in cremation reports by F. P. Lisowski (1956) and by N. G. Gejvall (1947, 1948). The primary aim in a study of this type is to try to determine the age, sex and number of individuals cremated.

Estimation of number, sex and age

The number of individuals identified from material of a cremation is usually established by the presence of certain definite duplicated skeletal parts, or a great dissimilarity in the thickness of certain bones, or the fact that epiphyseal union had taken place where some bones were concerned, while in other similar bones epiphyseal union had not taken place. Assessment of the sex of an individual from cremated remains is a very precarious procedure unless there are preserved definite portions of bone from which the sex can be ascertained. The possible sex can be diagnosed from the robustness of certain bones, but the conclusion is only a tentative one. A possible age at death can be suggested by the degree of union of the cranial sutures, and again by noting if epiphyseal union had taken place. Features of the vertebrae and pubic symphysis, and the state of eruption and attrition of the teeth can also reveal a possible age at death; all these features however may not have survived the combustion.

The writer, in the case of these cremations, has dispensed with giving details of bone which were recognizable as coming from specific parts of individual bones. Instead of the larger amounts of cremated bone, a brief résumé of the remains has been given, and

the weight and percentages of the various bones of all the cremations have been recorded in table form.

Cremation A

Fragments of skull and of long bone could be identified among the remains. No skull fragments though could be placed as coming from specific areas or the long bone fragments from certain bones. The sex, and age at death of the individual represented by the remains, was undeterminable; but was possibly an adult. The overall length of the fragments was from a few millimetres to 48 mm.

Cremation B

Fragments recognizable, were of the cranium, mandible, teeth, innominate bone, vertebrae and long bone. Some pieces of the cranium and mandible could be observed as coming from specific areas, but no long bone fragments could be identified with certainty as belonging to individual bones. The overall length of the fragments was from a few millimetres to 67 mm. Again the sex, and age at death of the individual was indeterminable, but from the evidence of the thickness of some cranial fragments, and the appearance of some molar sockets in a fragment of a mandible, suggested the possibility that the individual was an adult.

Cremation C

The amount of fragments was very few, but some small pieces could be recognised as being of the skull. These fragments ranged in overall length from a few millimetres to 39.0 mm. The sex, and age at death was undeterminable.

Cremation D

Of the bone fragments recognisable, most were of long bone, with a few fragments of skull and a piece of a scapula. The overall length of the fragments was from a few millimetres to 37.0 mm. Again the sex, and age at death of the individual was undeterminable.

Cremation E

Again, a small amount of fragments. Some pieces of skull and long bone were recognisable, but the majority of the remains were unrecognisable as belonging to specific bones. These fragments ranged in overall length from a few millimetres to 32.0 mm. The sex and age at death was undeterminable.

Cremation F

Two individuals were represented by these remains. Evidence for this was the presence of duplicated portions of bone, these being petrous portions of temporal bones, mandibular condyles, and zygomatic bones. The degree of robustness, or lack of robustness of long bone fragments, and the size of the body portions of two vertebrae suggested the possibility of female sex. The thickness of the cranial fragments, size of the petrous portions of temporal bones and mandibular condyles, also suggested the possibility of female sex. Supporting the evidence of the features mentioned was part of a talus, the neck and head of a femur, the superior border of an orbit, and a mastoid process, all very likely belonging to female skeletons. A possible age at death was suggested by a femur head, where a ring was visible which indicated the epiphysis had united with the neck portion not many months before death. This would make the individual quite young, and supporting this were distal extremities of a fibula and an ulna displaying the union of epiphysis and shaft were not quite completed. The possible age at death of the individual, or individuals, the bones with which the epiphyses belonged would be approximately 16-18 years. As the long bone fragments displayed no difference in robustness, and the cranial remains were of uniform thickness with sutures open, this suggested that both the individuals were of a similar age. Quite a number of large fragments of bone were preserved among the remains, two pieces of cranium measuring 58.0 x 37.0 mm., and 55.0 x 51.0 mm. respectively. The larger long bone fragments measured in length from 50.0 mm. to 96.0 mm. The overall range of the fragments was from a few millimetres to 96.0 mm.

Cremation G.

Again, two individuals were represented by the remains, as duplicated portions of bones were found, these being of zygomatic bones, mandible, radius, odontoid process of axis, and ischium of innominate bones. Supporting female sex, was a portion of a sacrum with a wide alae and two small mastoid processes and half of a small clavicle. For possible male sex, a glenoid fossa of a scapula and a petrous portion of a temporal bone. It is possible then the remains could represent a male and a female, especially as some cranial fragments were a bit thicker than others but this in itself is not positive proof. Equally possible, was that both individuals were females, as a number of vertebral bodies were preserved, some of which were of lumbar vertebrae and would seem too small, to belong to male skeletons. These remains also were no more robust than those of cremation G which have been suggested as female. Again it is possible the individuals were of a young age at time of death. Some extremities of metacarpal bones were preserved displaying the epiphyses had fused to the shafts, with no sign of the join. This could happen any time in between 14-21 years (D. R. Brothwell 1963) according if male or female, and as quite a number of cranial fragments were preserved, some of which were quite large and displayed open sutures the individuals could have been young adults. Two cranial fragments were also preserved, these ranging in length from 60.0 mm. to 117.0 mm.

Cremation H

Some of the fragments from this cremation were of larger proportions than any fragments from the other cremations. This made it more easy to recognise fragments belonging to specific bones. There were not recognisable duplicate pieces, so suggesting one individual. Features of these recognisable portions of bone suggested the feasibility that the individual was of female sex. Extremities of radii were preserved, also the neck and head of a femur all displaying no signs of epiphyses, suggesting the individual was an adult. Supporting this, was the basal portion of the occipital bone displaying no evidence of the basi-sphenoid suture. Cranial fragments preserved, some of which were large and displayed open sutures, suggested the individual was of a young age, the age possibly being in the region of 18-25 years. The largest cranial fragment measured 70.0 x 62.0 mm. Some of the long bone fragments were quite large, these ranging in length from 55.0 mm. to 125.0 mm.

While examining the remains of the skull, a round abscess cavity was noted at the root apex of a tooth socket in a fragment of mandible, possibly the socket for the first left molar.

Cremation I

Recognisable fragments were of the skull, ribs, vertebrae, radius, innominate bone and miscellaneous fragments of long bone. The sex was indeterminable, but it is possible the individual was an adult. The slender evidence for this was a small fragment of cranium which displayed some fusion of a suture. The overall length of these remains was from a few millimetres to 35.0 mm.

Included with these remains was a lower third molar tooth, possibly of sheep, and an immature astragalus of cattle.

Scattered Cremated Bone (J-Q)

No direct evidence was found to associate any of these minor scatters of bone, or that they could be attributed to any of the larger deposits. The remains of all the cremations were of a similar lightish brown to a darker brown colour, so it is possible that all the scatter material could belong to one cremation, or similarly an individual scatter to one principal deposit. No evidence of sex or age at death could be gleaned from any of these remains.

Scatter J

Some of these fragments could be recognised, these being of cranium, one tooth root, a vertebra, and some miscellaneous long bone.

Scatter K

A few fragments only.

Scatter L

Recognisable fragments were of cranium, one tooth root, and miscellaneous long bone.

Scatter M

A few fragments only.

Scatter N

A few fragments only.

Scatter O

A few fragments only.

Scatter P

Some cranial fragments were recognisable, and miscellaneous long bone fragments.

Scatter Q

These remains consisted mostly of miscellaneous long bone fragments, three of the pieces measuring in length 35.0 mm., 43.0 mm., and 61.0 mm, respectively.

Unburnt Bone from South Chamber

All of these pieces of bone were human. Three of the fragments were of cranium, one of which was part of a frontal bone displaying the fronto-nasal suture, superciliary ridge and part of a superior margin of the orbit. The other two could not be placed with certainty but came from either frontal or parietal bones. Another fragment was possibly a portion of a mandible displaying a tooth socket. Three more fragments were of postcranial bone, two of the shaft and the other possibly of the distal extremity of a femur. The rest of the remains were small fragments and could have come from any bone of a skeleton. By the evidence of the robustness of the bone fragments, and what would have been a prominent superciliary ridge, the individual represented by the fragments was possibly an adult male.

MID GLENIRON I**Cremation A**

Table I. The weight and distribution of the total identified and unidentified cremated remains

	gm.	% Total
Skeletal Material	68.3	53.1
Identified Total	60.4	46.9
Unidentified Total	128.7	100.0

Table II. The weight and distribution of the identified remains

	gm.	%	% Total
Skeletal Material			
Skull	9.8	14.3	7.6
Miscellaneous long bone	58.5	85.7	45.5
Identified Total	68.3	100.0	53.1

Cremation B

Table I

	gm.	% Total
Skeletal Material		
Identified Total	317.5	56.7
Unidentified Total	242.3	43.3
Total	559.8	100.0

Table II

	gm.	%	% Total
Skeletal Material			
Skull	94.4	29.7	16.8
Innominate bone	15.0	4.7	2.6
Vertebrae	10.5	3.3	1.8
Miscellaneous long bone	197.6	62.3	35.5
Identified Total	317.5	100.0	56.7

Cremation C

Table I

	gm.	% Total
Skeletal Material	-	-
Identified Total	-	-
Unidentified Total	64.0	100.0

Cremation D

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	52.7	44.7	Skull	7.9	15.0	6.7
Unidentified Total	65.2	55.3	Scapula	4.3	8.2	3.6
Total	117.9	100.0	Miscellaneous long bone	40.5	76.8	34.4
			Identified Total	52.7	100.0	44.7

Cremation E

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	30.3	36.3	Skull	17.8	58.7	21.3
Unidentified Total	53.2	63.7	Miscellaneous long bone	12.5	41.3	15.0
Total	83.5	100.0	Identified Total	30.3	100.0	36.3

Cremation F

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	986.4	54.8	Skull	199.1	20.2	11.1
Unidentified Total	812.1	45.2	Radius and Ulna*	34.1	3.5	1.9
Total	1798.5	100.0	Humerus	31.0	3.1	1.7
			Fibula	11.8	1.2	0.7
			Femur	32.0	3.2	1.8
			Innominate bone	57.3	5.8	3.2
			Vertebrae	47.5	4.8	2.6
			Metacarpals, Metatarsals,	33.0	3.4	1.8
			Phalanges	5.9	0.6	0.3
			Talus	30.7	3.1	1.7
			Ribs	504.0	51.1	28.0
			Miscellaneous long bone	986.4	100.0	54.8
			Identified Total	986.4	100.0	54.8

*Four definite distal pieces of ulnae, but rest of the fragments were so alike they have all been clumped together

Cremation G

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	1303.7	74.8	Skull	296.4	22.7	17.0
Unidentified Total	440.0	25.2	Radius + Ulna	67.4	5.2	3.9
Total	1743.7	100.0	Humerus	42.1	3.2	2.4
			Femur	91.5	7.0	5.3
			Tibia	30.0	2.3	1.7
			Fibula	12.6	1.0	0.7
			Innominate bone	110.7	8.5	6.4
			Vertebrae	118.5	9.1	6.8
			Sacrum	14.4	1.1	0.8
			Metacarpals, Metatarsals,			
			Phalanges	56.3	4.3	3.2
			Ribs	60.0	4.6	3.5
			Scapula	14.7	1.1	0.8
			Clavicle	9.2	0.7	0.5
			Patella	7.9	0.6	0.5
			Miscellaneous long bone	372.0	28.6	21.3
			Identified Total	1303.7	100.0	74.8

Cremation H

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	1129.8	71.6	Skull	219.1	19.4	13.9
Unidentified Total	447.1	28.4	Radius	38.1	3.4	2.4
Total	1576.9	100.0	Ulna	26.5	2.3	1.7
			Humerus	34.0	3.0	2.1
			Femur	171.2	15.1	10.9
			Tibia	75.5	6.7	4.8
			Fibula	15.8	1.4	1.0
			Innominate bone	102.3	9.0	6.5
			Vertebrae	70.0	6.2	4.3
			Scapula	26.6	2.4	1.7
			Metacarpals, Metatarsals,			
			Phalanges	41.3	3.7	2.6
			Carpal bones	4.2	0.4	0.3
			Tarsal bones	34.8	3.1	2.2
			Patella	7.3	0.6	0.5
			Clavicle	7.5	0.7	0.5
			Ribs	56.2	5.0	3.6
			Miscellaneous long bone	199.4	17.6	12.6
			Identified Total	1129.8	100.0	71.6

Cremation I

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	174.3	57.8	Skull	45.8	26.3	15.2
Unidentified Total	127.1	42.2	Ribs	5.6	3.2	1.9
Total	301.4	100.0	Vertebrae	4.0	2.3	1.3
			Radius	3.3	1.9	1.1
			Innominate bone	2.8	1.6	0.9
			Miscellaneous long bone	112.8	64.7	37.4
			Identified total	174.3	100.0	57.8

Cremation J

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	57.9	64.4	Skull	5.9	10.2	6.6
Unidentified Total	32.0	35.6	Vertebrae	3.0	5.2	3.3
Total	89.9	100.0	Miscellaneous long bone	49.0	84.6	54.5
			Identified Total	57.9	100.0	64.4

Cremation K

Table I		
Skeletal Material	g.m.	% Total
Identified Total	-	-
Unidentified Total	1.4	100.0
Total	1.4	100.0

Cremation L

Table I			Table II			
Skeletal Material	g.m.	% Total	Skeletal Material	g.m.	%	% Total
Identified Total	22.4	39.0	Skull	5.9	26.3	10.3
Unidentified Total	35.0	61.0	Miscellaneous long bone	16.5	73.7	28.7
Total	57.4	100.0	Identified Total	22.4	100.0	39.0

Cremation M

Table I		
Skeletal Material	gm.	% Total
Identified Total	-	-
Unidentified Total	1.5	100.0
Total	1.5	100.0

Cremation N

Table I		
Skeletal Material	gm.	% Total
Identified Total	-	-
Unidentified Total	0.7	100.0
Total	0.7	100.0

Cremation O

Table I		
Skeletal Material	gm.	% Total
Identified Total	-	-
Unidentified Total	8.6	100.0
Total	8.6	100.0

Cremation P

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	17.4	77.3	Skull	5.0	28.7	22.2
Unidentified Total	5.1	22.7	Miscellaneous long bone	12.4	71.3	55.1
Total	22.5	100.0	Identified Total	17.4	100.0	77.3

Cremation Q

Table I			Table II			
Skeletal Material	gm.	% Total	Skeletal Material	gm.	%	% Total
Identified Total	10.2	93.6	Miscellaneous long bone	10.2	100.0	93.6
Unidentified Total	0.7	6.4	Identified Total	10.2	100.0	93.6
Total	10.9	100.0				

EXCAVATION OF TWO BURIAL CAIRNS AT MID GLENIRON FARM, GLENLUCE, WIGTOWNSHIRE

By J. X. W. P. CORCORAN, F.S.A.,
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S U M M A R Y

MID GLENIRON A. This was a much disturbed circular cairn in which a capping of small stones covered a basal layer of larger boulders, arranged in either an annular or a penannular setting. In the centre remains were found of cremated human bone, possibly belonging to a single individual, and perhaps contained in a cinerary urn.

MID GLENIRON B. A small closed chamber, probably built of opposed orthostats and opposed dry-stone walling, was set at the centre of a circular cairn of large stones. The only artefact, a flint scraper, does not allow the construction of the cairn to be dated, but it is suggested that it may have been contemporary with the neighbouring chambered cairns, Mid Gleniron I and II.

The two cairns described in this report were excavated as part of the programme which had been planned primarily in order to examine the chambered cairns, Mid Gleniron I and II. An account of the excavation of the latter cairns is given elsewhere in the present volume of these *Transactions* (cf. *supra* p. 29). It is felt that, although the information derived from Mid Gleniron A and B is limited, it is of sufficient interest to be published separately, and not merely in the form of an appendix to the larger report.¹

MID GLENIRON A

The position of this structure, some 13 ft. to the south of Mid Gleniron I is described on page 35. Prior to excavation it had appeared to some observers that the two cairns together formed a single structural unit, measuring more than 100 ft. in over-all length. A transverse hollow, however, suggested to the writer that two separate structures might have been linked together to form a composite monument. Excavation indeed revealed that there were two independent structures, but that the two had not been joined. It seems possible that the builders of Mid Gleniron A wished to position it as near as possible to the chambered cairn. In this they may have been prompted by motives comparable with those which led to the insertion of secondary cremations in the body of Mid Gleniron I.

Mid Gleniron A had been disturbed, and this probably accounted for a hollow in the centre of the mound which, prior to excavation, gave the cairn the appearance of being a banked enclosure. For a time the possibility was allowed that it might even have been a hut-circle, with an entrance from the

¹ A description of the setting of Mid Gleniron A and B is given in the report on Mid Gleniron I and II (cf. *supra* p. 30).

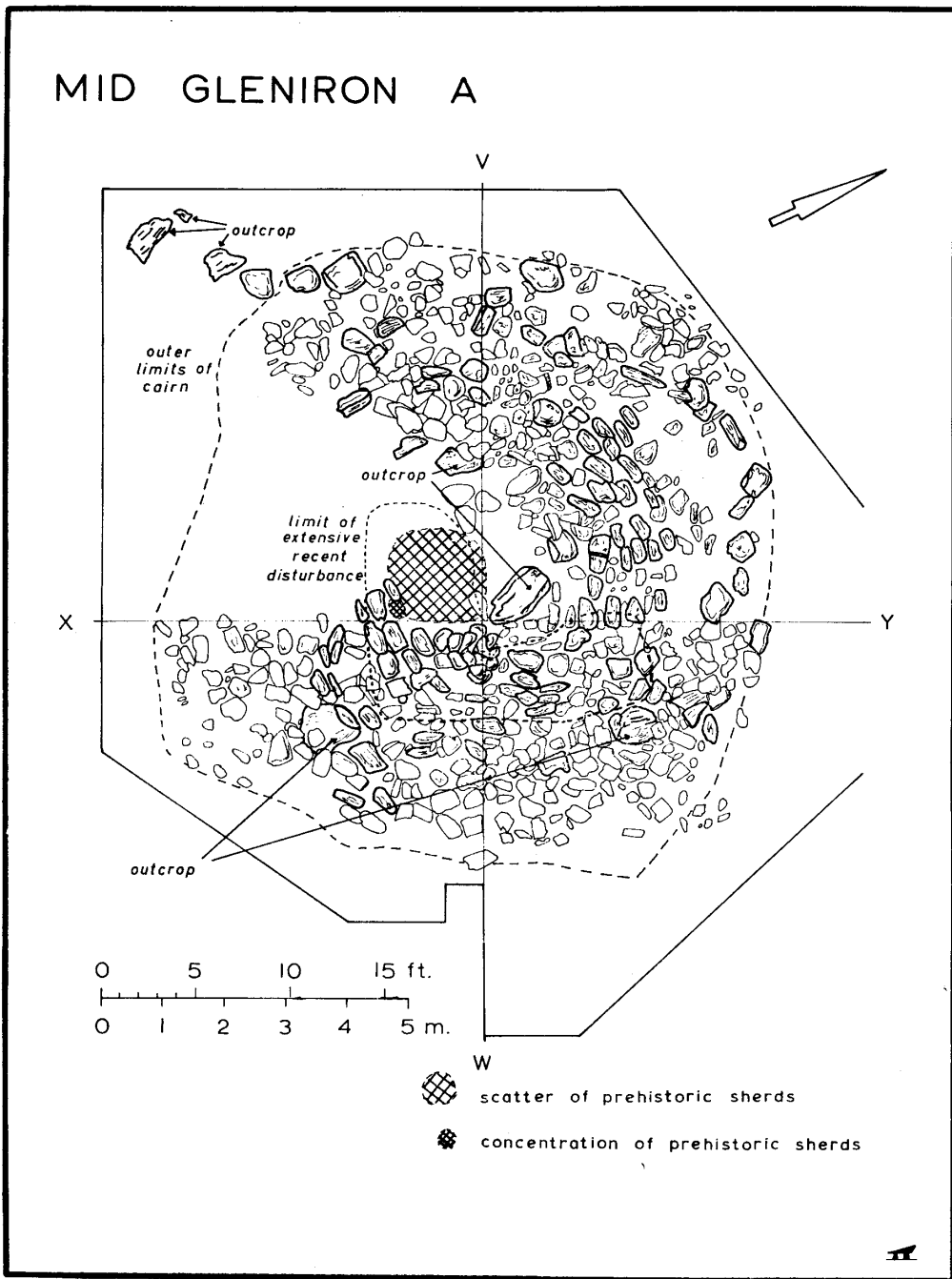


Fig. 1—Mid Gleniron A; Plan.

south, the smaller stones in the interior having resulted from field clearance. In the centre of the mound an L-shaped zone of small stones which was not covered, as was the remainder of the structure, by turf or humus represented the most recent disturbance which had penetrated almost to the former ground surface. Finds of recent date included potsherds, fragments of a spectacle lens, and an iron spanner. The appearance of burnt human bone and very small sherds of prehistoric pottery subsequently indicated that this had been a burial cairn.

The structure was simple, and appears to have comprised two components, an inner and an outer. The inner consisted of a single layer of small boulders, between 1 ft. 6 in. and 2 ft. in length, and set on the former ground surface in such a manner that the longitudinal axes of many of these stones tended to lie concentrically with the circumference of the setting as a whole (fig. 1). It is not certain whether a break in this basal layer resulted from disturbance in the southern sector of the cairn, or whether this had been an original feature. Had there been an intention to rob the cairn in recent times, this might more readily have been achieved from the south. What is certain, however, is that the basal layer did not extend into the central area. It was, therefore, either annular or penannular on plan. The diameter from east to west was approximately 23 ft.

The outer component was a capping of small stones, approximately 6 ins. in greatest extent, and therefore smaller than those which formed the basal layer. Although at the time of excavation this capping measured some 33 ft. from east to west and 30 ft. from north to south, it is possible that its approximately square plan had resulted from disturbance and slip, particularly as the cairn had been built at the southern end of a ridge running from north to south. The cairn originally was probably circular on plan. Maximum surviving height was 2 ft., and it is improbable that the original height was much in excess of this figure. The outer limits of the basal layer of larger stones may have been incorporated in a rudimentary kerb. This would have been desirable on the eastern and western sides where the sloping ground surface would have induced instability, as is suggested by slipped cairn material (Fig. 2).

The central area was in the main free of larger stones, and it is possible that the burial deposit or deposits had been placed here. Cremated bone and potsherds were scattered, and there was no evidence of the manner of deposition. There were no pits, neither was there evidence in the form of intact or broken slabs to suggest that the burials had been enclosed in a cist or cists. The main concentration of bone and sherds was centred to the south and south-west of an outcrop, around which the basal layer of larger stones had been positioned. A small concentration of stones larger than average for the central area, appear to have been associated with the scattered remains of this burial deposit. They lay close to the inner limits of the basal layer at this point. In this area, too, there were quantities of small water-rolled pebbles and quartzite.

It is possible therefore, that cremated remains, perhaps enclosed in a cinerary urn, had been placed on the former ground surface. Although the possibility that they may have been placed in a cist cannot be rejected entirely, it seems more probable that the burial deposit or deposits had been covered by stones larger than those normally found in the central area. The final act appears to have been the placing in position of the smaller stones which formed the capping of the cairn.

FINDS

a. **Bone**—As Mr Denston demonstrates in the Appendix, it is possible that all the fragments of bone from the centre of the cairn could have derived from a single deposit. The remains may have been those of one individual, possibly either a child or, if an adult, a young female.

b. **Pottery**—A quantity of small sherds and fragments of pottery were found scattered in the central area of the cairn, mostly associated with cremated bone. The sherds appear to be homogeneous, and presumably belong to a single pot which was smashed and scattered in recent times.

The few diagnostic features which may be identified suggest that this was a cinerary urn. This is borne out by the texture and filling of relatively large angular fragments of crystalline metamorphic rock and small pieces of quartz in the sandy, dark-grey body of the pot. Both inner and outer surfaces are smooth and pink-fawn in colour. The base appears to have been flat, but there is no certain evidence of the shape of the rim. Some sherds display traces of a cordon, and a few others have a decoration of twisted-cord. The arrangement of the pattern is uncertain, but one sherd has two parallel lines of twisted-cord ornament, and another part of a V-shaped arrangement of the ornament.

c. **Flint**—A single flake of unworked, but probably burnt, flint was found in the central area in association with sherds and cremated bone.

MID GLENIRON B

Mid Gleniron B lies a little more than 45 ft. to the south-south-west of the façade of Mid Gleniron II. Before excavation it appeared to be a circular cairn, and a single large orthostat-like stone which projected above the surface of the mound suggested that there might be a central megalithic chamber. There were no surface indications of a passage. The area to the west of the putative orthostat had clearly been disturbed in recent times as it was marked by small stones piled up to a level higher than the surface of the mound on the opposite side of this upright stone. Among these stones, which were not covered by turf or humus, as was the remainder of the mound, were bones of a recently buried sheep.

Excavation revealed a circular cairn some 22 ft. in mean diameter. The cairn was built of boulders, the largest measuring more than 2 ft. in greatest extent, and approximately 2 ft. 9 ins. in maximum surviving height. Apart from

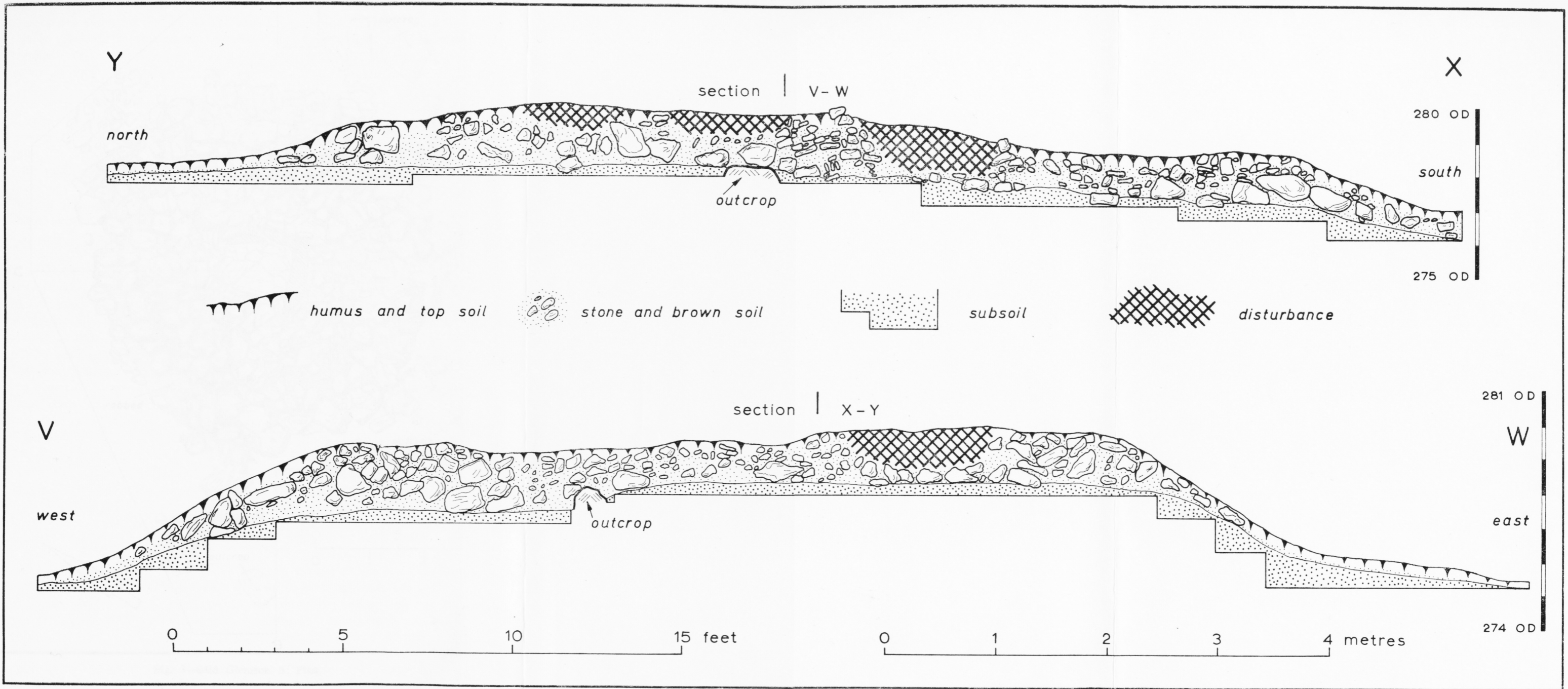


Fig. 2—Mid Gleniron A; Sections.

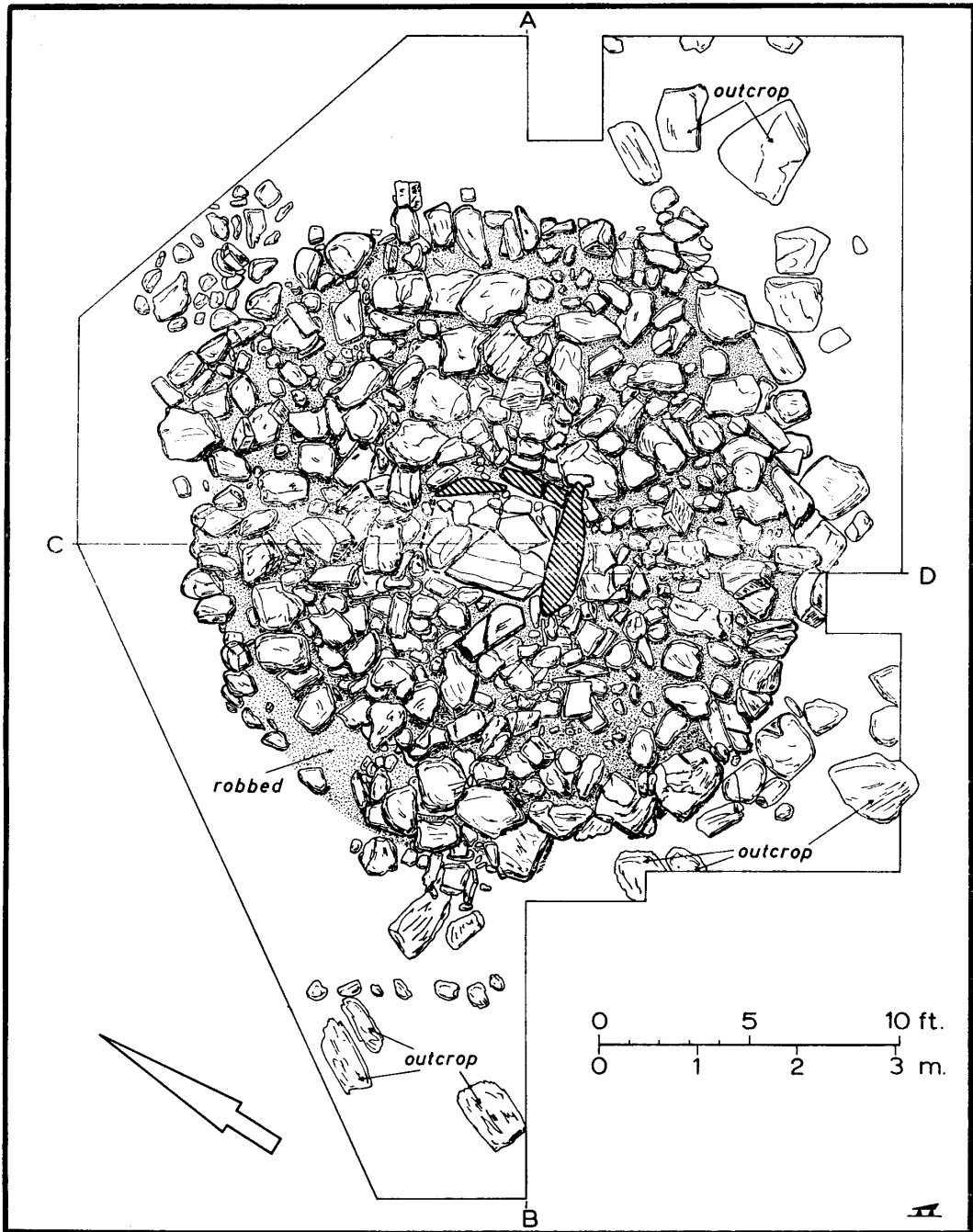


Fig. 3—Mid Gleniron B; Plan.

the disturbed central area, in which there was a layer of rich loamy soil underlying the bones of the sheep, there was little soil in the make-up of the mound. The basal layers appears to have been arranged in a series of concentric rings around the central area. Use of large stones in the construction of the cairn made superfluous a kerb of stones of a size different from those of the body of the mound. The edges of the cairn were well-defined, and there was little evidence of slip, despite its situation at the southern end of a small ridge which slopes to the south (fig. 3 and 4).

The large vertical stone visible before excavation proved to form the south-eastern side of a closed chamber. It is 4 ft. 5 ins. long, its maximum height is 3 ft. 5 ins. and its greatest thickness is 1 ft. 2 ins. The upper part has been damaged, presumably in an attempt to remove it, and its original shape is unknown. It is probable that it would have had a more level upper surface than at present. This orthostat was not set into a socket, but was supported on small stones, so as to provide a horizontal seating on the southward sloping ground surface. Stability was provided by the flat base of the orthostat, its relative thickness, and the support given by both the north-eastern wall of the chamber and the body of the cairn.

The north-eastern wall appears to have been of dry-stone construction, of which two stones of the basal course alone survived, leaning backwards into the body of the cairn (fig. 4). The two stones were of unequal proportions, that to the north-west being longer but lower than its taller, narrower and split neighbour (fig. 4, detail). The maximum height of the latter was 1 ft. 6 ins., and additional courses would have been necessary to bring the wall to the upper level of the orthostat. Like the latter, the north-eastern wall was set on small stones, and not directly on the former ground surface.

Both the south-western and north-western walls were destroyed completely. Of the latter there was no evidence whatever, but if it were to be assumed that the walls of the chamber had been arranged symmetrically, it is possible that it had been formed by a single orthostat. Had such a stone been set, like that which formed the south-eastern wall, on small stones, it could easily have been removed. Some support for a possible symmetrical arrangement is suggested by a large tabular stone, some 5 ins. thick, and 2 ft. 6 ins. long, which lay in the disturbed area to the south of the orthostat. This tabular stone may have served as part of a basal course of dry-stone walling comparable with that of the north-eastern wall.

Although the north-western and south-western walls had been destroyed, the limits of the chamber were defined by a paving of flat slabs. An attempt to smash and destroy the paving appears to have been thwarted by the thickness of some of the larger slabs. In order to compensate for the southward sloping ground surface, a level upper surface for the paving was provided by setting it on a bedding of closely packed small stones, measuring between 3 and 4 ins. in maximum extent, among which there was evidence of burning. The inner

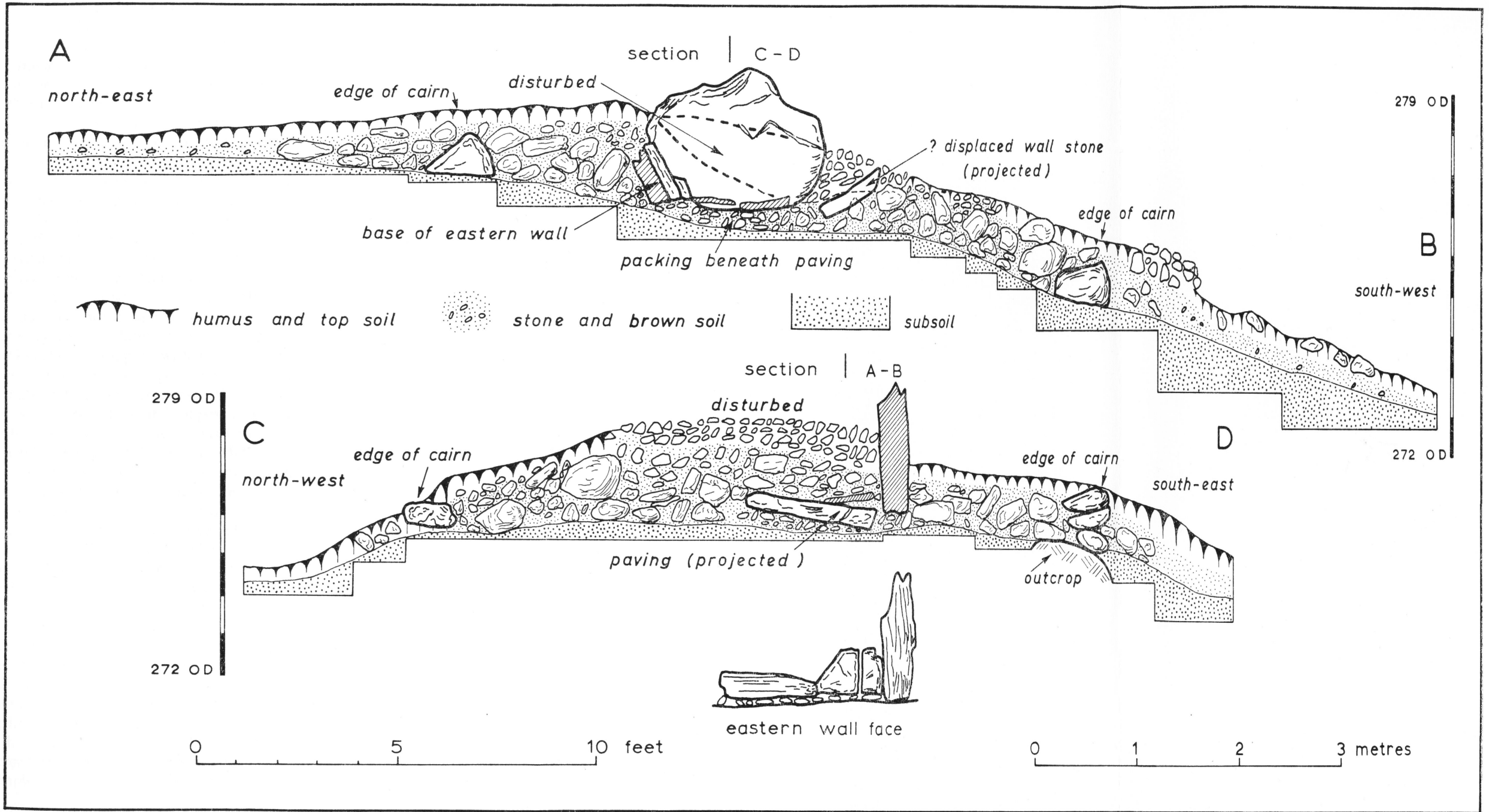


Fig. 4—Mid Gleniron B; Sections.

dimensions of the chamber may therefore be estimated as having been approximately 4 ft. square.

The only finds of prehistoric date were a round-nosed flint scraper, which lay above the paving in the southern part of the chamber, and a few very small fragments of featureless pottery from the body of the cairn to the south-east of the chamber. Human bone was not found.

The term **chamber** has been used deliberately in preference to **cist**, which implies a small box-like chamber set in the ground. The chamber of Mid Gleniron B, however, was closed in that there was no evidence whatever that access had been possible through the body of the cairn. This was demonstrated by the closely packed and unbroken setting of the large stones which formed the basal layer of the cairn.

In the absence of meaningful artefacts, it is not possible to date the construction of this tomb. Two possibilities may be allowed. It may have post-dated the use of the chambered cairns, Mid Gleniron I and II. Against this hypothesis is the fact that it does not compare closely with the type of 'cist' normally associated either with crouched inhumation burials, which sometimes are accompanied by Beakers or Food Vessels, or with cremations in cinerary urns. Although the size and the paving of the closed chamber of Mid Gleniron B compare with those of some cists, the method of construction differs. The common type of cist is constructed of four stone slabs, generally less massive than the surviving orthostat of Mid Gleniron B. An arrangement of opposed orthostats and opposed dry-stone walling, as suggested for this chamber, is foreign to the conventional cist.

The second possibility is that Mid Gleniron B may have been contemporary with one or other of the structural stages of Mid Gleniron I and II. In support, comparison may be made between the inner cairns of the latter structures, particularly that of Mid Gleniron II, and the cairn of Mid Gleniron B. There is a contrast in that the chamber of Mid Gleniron B was closed, whereas those of I and II were provided with access from the edges of their respective cairns. The surviving orthostat of Mid Gleniron B compares with those of its neighbours, and is more massive than those of what was to become the lateral chamber of Mid Gleniron II. Although it is situated some distance from Galloway and does not provide a precise parallel, reference may be made to the chambered cairn of Notgrove in Gloucestershire in which a circular cairn enclosing a closed polygonal chamber appears to have been incorporated in a larger chambered cairn.² It nevertheless suggests that closed burial chambers in circular cairns existed at a relatively early stage of the use of megalithic tombs in Britain.

It is unfortunate that a more satisfactory interpretation cannot be offered. In conclusion, however, reference may also be made to Scott's **protomegalith**, a simple box-like chamber which he visualises may have formed the nucleus

2 E. M. Clifford, *Archæologia* LXXXVI (1936), 119-61.

from which the segmented chamber of the Clyde cairns of south-western Scotland may have developed.³ The chamber of Mid Gleniron B may in some way have been related, as has been suggested in the discussion of Mid Gleniron I and II (cf. *supra* p. 73). Final assessment of Mid Gleniron B must await excavation of comparable structures in a better state of preservation, should they exist.

APPENDIX

CREMATIONS FROM MID GLENIRON A

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Duckworth Laboratory of Physical Anthropology,
Department of Archæology and Anthropology,
University of Cambridge.

(For techniques used in the examination of the material see above p. 84).

There was no direct evidence that any of the deposits were associated. The fragments from all deposits were of the same colour and of a uniform thickness, so could have derived from a single original deposit.

Deposit A

Those fragments recognizable were of cranium, teeth, metacarpal, metatarsal or phalanges, and miscellaneous long bone. It is possible the individual represented by the remains was immature or a young adult, and if an adult of female sex. Evidence for this opinion was obtained from a few cranial fragments which displayed open sutures. Also features known as the postglenoid tubercle, supramastoid crest, preglenoid tubercle, and zygoma of a right temporal bone suggested an immature individual or female.

Deposit B

A few cranial and miscellaneous long bone fragments were identified. Sex and age at death undeterminable.

Deposit C

Just a very few fragments.

Deposit D

Again very few fragments.

Deposit E

Just a few fragments.

³ J. G. Scott in T. G. E. Powell et. al., *Megalithic Enquiries in the West of Britain*, Liverpool 1969, 181, 193.

MID GLENIRON A — "ANNEXE"

Cremation A

Table I			Table II			
Skeletal Material	gm.	%	Skeletal Material	gm.	%	% Total
Identified Total	188.4	49.7	Skull	43.9	23.3	11.6
Unidentified Total	190.6	50.3	Metacarpal, Metatarsal, Phalanges	3.2	1.7	0.8
			Miscellaneous long bone	141.3	75.0	37.3
Total	379.0	100.0	Identified Total	188.4	100.0	49.7

Cremation B

Table I			Table II			
Skeletal Material	gm	%	Skeletal Material	gm.	%	% Total
Identified Total	26.3	56.4	Skull	7.5	28.5	16.1
Unidentified Total	20.3	43.6	Miscellaneous long bone	18.8	71.5	40.3
Total	46.6	100.0	Identified Total	26.3	100.0	56.4

Cremation C

Table I		gm.	%
Skeletal Material		-	-
Identified Total		-	-
Unidentified Total		0.4	100.0
Total		0.4	100.0

Cremation D

Table I		gm.	%
Skeletal Material		-	-
Identified Total		-	-
Unidentified Total		7.6	100.0
Total		7.6	100.0

Cremation E

Table I		gm.	%
Skeletal Material		-	-
Identified Total		-	-
Unidentified Total		8.7	100.0
Total		8.7	100.0



Plate IX—Mid Gleniron A: Upper—Inner stone-setting, from S.
Middle—Mid Gleniron B: Orthostat and paving, from W.
Lower:—Basal course of north-eastern wall, from S.-W.

THREE ROMAN INTAGLIOS FROM SOUTH-WESTERN SCOTLAND

By MARTIN HENIG

Sealstones cut in intaglio and set in finger rings are comparatively uncommon finds from Romano-British sites. However, they are not without interest and deserve more detailed treatment than they have usually received in the past, both for their intrinsic qualities as works of art and also for the light that they shed on the beliefs and aspirations of their onetime owners. The present article discusses three such stones, known to the writer.¹

1 Cornelian set in an iron finger-ring: Carzield, Dumfries.

Previous Publication: *Discovery and Excavation*, 1964, 27, which states that

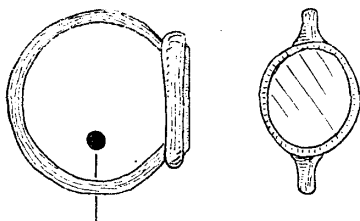


Fig 1—Iron finger ring, from Carzield—from a drawing by J. Williams

it was found in the rubbish-spread North of Carzield together with “an enamelled brooch, a silver ring-headed pin, glass, lead, many nails, and a large amount of mainly Antonine I pottery, a high proportion of it rim or base, and yielding five potters’ stamps.” Earlier excavations established that the site was occupied for a relatively brief period in the second century (c. A.D. 140-160) and there seems to be no reason to question this.²

The Ring was unfortunately stolen from Dumfries Museum before any measurements could be taken, but the type as recollected by Mr Williams [Fig. 1] is characteristic of the first century A.D. The hoop is of circular section, widening at the bezel to take the stone. From above, it has a lozenge shaped appearance quite unlike the wide band of metal characteristic of Antonine times.

In Britain there are parallels from Great Casterton, Sea Mills (near Bristol) and London.³ On the Continent similar specimens have been recorded at Trier,

¹ This article owes a great deal to Mr James Williams and Mr A. E. Truckell who suggested that I should write it, in addition Mr Williams drew the Carzield ring and brooch and provided me with much useful information. Professor Frere read through my rough draft and saved me from more than one mistake, and Mr David Brown of the Ashmolean gave freely of his knowledge of small objects. The casts were made with the kind co-operation of the authorities of the same museum. Finally Mr A. E. Truckell, Curator of Dumfries Burgh Museum, Mr J. G. Scott of Glasgow City Museum, and Mr R. B. K. Stevenson of the National Museum of Antiquities, Edinburgh, have all been most helpful in allowing me to publish material under their care.

² *Trans. Dumfries and Galloway XXII (1938-40)*, 162. The two periods of metalling mentioned on 158 do not seem to mark distinct phases of occupation and Mr Hartley informs me that later Antonine Samian is certainly absent.

³ Great Casterton: “The Roman Conquest of Britain,” by D. R. Dudley and G. Webster (London, 1965), 123 and pl. 32. Sea Mills. In University Museum of Archaeology, Cambridge (unpublished). London. Guildhall Museum (Accession Number 20794—unpublished). London. Guildhall Museum (Accession Number 20794—unpublished). London Museum “London in Roman Times” (1930) 100 No. 16 and Fig. 30.

Bonn, Saalburg and Augst.⁴ It is thus highly probable that the ring was already at least half a century old when it was lost. Presumably an iron ring when properly cared for, has considerable durability; indeed another iron signet-ring of Hellenistic type was found in an Antonine context at Caerleon.⁵ The reason for the decline in popularity of iron in favour of bronze, silver and gold was doubtless rather social than practical.

Intaglio. Although, naturally, this was no longer available for examination, a wax impression had fortunately been taken at the time of discovery. Through the kindness of Mr David Brown and the authorities of the Ashmolean Museum, Oxford, I was able to obtain a plaster cast [Plate X, centre].⁶

The material has been described as "sard"—in other words it was a dark Cornelian.⁷ Dimensions 13 mm. x 10 mm.; face slightly convex as is commonly the case with first century gemstones.

The subject is a Bust of the Sun God Sol (Helios)⁸ togate and wearing a diadem. Behind the head appear five solar rays.

A bust of Helios occurs on a paste gemstone found during recent excavations at Winchester.⁹ Parallels from abroad are noted below.^{9a}

In addition to these a number of gems are extant which depict the head or bust of Sol together with other gods or with the moon (Luna).^{9b}

Helios-Sol has a long history on the coinage. His head appears in profile on an issue of Cyzicus¹⁰ (c. 500 B.C.) and from the late fifth century, a facing portrait is the badge of the City of Rhodes.¹¹ In Hellenistic times the sun became identified with the rulers of Egypt and Syria who claimed divine status, and there are occasional portraits of them wearing a radiate crown.¹²

4 F. Henkel: "Die Römischen Fingerringe der Rheinlande" (Berlin, 1913), 134, Nos. 1447, 1448, 1456, and plate LVI. R. Steiger: "Gemmen und Kameen in Romer Museum, Augst," *Antike Kunst*, vol. 9 (1966), 30, No. 2 and plate 8.

5 *Archæologia Cambrensis*, vol. 87, 1932, 94 and fig. 41, 1. This type of ring and the intaglio are unlikely to be later than the Augustan age.

6 Using silicone rubber as a casting medium.

7 Considerable confusion has been caused in the past by the problem of nomenclature. The stone was evidently a chalcedony of dark red colour, which would have qualified for the ancient name "sarda."

8 Apart from the type under discussion, Sol is represented on gems in a number of ways—standing to front, mounted in a chariot or (rarely) on horseback. The finest example in the British Isles of a standing Sol was found at Newstead. Curle: "A Roman Frontier Post," 333 and pl. LXXXVII, 35; in a chariot cf. Merrifield. "The Roman City of London" (London, 1965), pl. 138, No. 3; on horseback, in Duke of Wellington's Collection of Finds from Silchester, No. 03001 (Reading Museum).

9 Examined through the co-operation of Mr Martin Biddle, by whose kind permission I am able to mention it here. For a possible example (sard) from Aldborough, Yorks, R. Thoresby "Ducatus Leodiensis" (1715) 107.

9a Henkel: *Die römischen Fingerringe der Rheinlande* (Berlin, 1913), No. 1442 (pl. LXXVI, 219), Cornelian in late republican/Augustan iron ring from Mainz. The size of the stone is identical to ours and the correspondence in the material of the ring is interesting. A. F. Gori: *Museum Florentinum* (Florence, 1731), 1, 64, Nos. 5 and 10 (Jasper) and 7 (Cornelian [=S. Reinach: *Pierres gravées* (Paris, 1895), pl. 31 and 32]. T. de Kibalchitch: *Gemmes de la Russie Meridionale* (Berlin, 1910), Nos. 216 (Jasper) and 227 (cornelian). W. Fol: *Catalogue du Musée Fol*, pl. VIII, 7 (paste). Southesk: *Catalogue of the Southesk Collection of Antique Gems*, formed by James, Ninth Earl of Southesk (London, 1908), pl. IV, D3 (convex chalcedony). A. Furtwängler: *Beschreibung der geschnittenen Steine in Antiquarium* (Berlin, 1896), Nos. 6315-7 (paste). R. Righetti: *Gemme e Cammei delle Collezioni Comunali* (Rome, 1955), 46, No. 117 (black Jasper), described incorrectly as a female head, and given a late imperial date on altogether inadequate grounds. Ashmolean Museum: Accession Nos. 1941, 606; 1941, 443 (paste); 1892, 1453 (green Jasper). Also a very pale chalcedony from near Side (Asia Minor)—cast in Ashmolean, original in possession of B. Brend.

9b For example—Furtwängler: *Beschreibung*, Nos. 7173, 7200, 8626; and H. B. Walters: *Catalogue of the Engraved Gems and Cameos Greek, Etruscan and Roman in the British Museum* (London, 1926), Nos. 1340, 1665, 2345.

10 C. M. Kraay: "Greek Coins" (London, 1966), 369 and pl. 198, 702.

11 C. M. Kraay: "Greek Coins" (London, 1966), 361 and pl. 188-9, Nos. 644-8.

12 C. M. Kraay: "Greek Coins" (London, 1966), 382 and pl. 219, No. 803 (Ptolemy III) and 374, pl. 206, No. 752 (Antiochus VI).

The first appearances on the Roman coinage—facing or in profile—occur in the First century B.C.¹³ Under Caligula¹⁴ a radiate head is used for the deified Augustus, but Nero¹⁵ — in direct imitation of Eastern rulers — has himself depicted with a crown of rays both on the coinage of Alexandria and on Dupondii struck in Rome. Mattingly comments that the radiate crown “is used as a mark of differentiation in the mint, but does not entirely lose its original meaning.”¹⁶ In the third century of course radiate crowns are universal on double denarii but with them and with the rise of the cult of Sol Invictus we are not concerned.¹⁷

“Helios was commonly invoked in oaths, from Homer down, in his capacity as an all seeing God.”¹⁸ However, for the Greeks, with the exception of small groups—Orphics and Stoics¹⁹—his importance was limited. He was never completely identified with Apollo who remained the god of light and of spiritual forces in general.²⁰

In the East the sun was a powerful god; and the extension of his worship to the West came as a result of Roman contacts with the provinces of Syria and Asia Minor. Sometimes it was associated with contacts between rulers as when the Mithraist Tiridates came to Rome in order to be invested with his diadem of office by Nero.²¹ More often the influence was at a humbler level. In Civilian life, Syrians were living in Rome²² and on the Rhine (at Cologne);²³ while in the army we hear of troops which had served under Corbulo in Syria, actually saluting the rising sun during the Battle of Cremona (A.D. 69).²⁴ By the second century Sol was well established, and his worship is even attested in Britain.²⁵

13 H. A. Grueber: “Coins of the Roman Republic in the British Museum” (London, 1910), vol. 1, 396, Nos. 3245-6 (L. Lucretius Trio c76 B.C.) 536, Nos. 4110-3 (L. Valerius Acisculus c45 B.C.); 578, Nos. 4248-54 (facing—L. Mussidius Longus c39 B.C.); 585-6, Nos. 4284-4289 (P. Clodius c38 B.C.), vol. 2, 68, No. 4543 (L. Aquilius Florus c14 B.C.); 486, No. 87-9 (Mark Antony as triumvir c42-31 B.C.). The head of Sol first appears as a pun on the first syllable of the name Lucretius (Lux-light), but on later coins, it has a definite connection with the Orient. On Antony's coins a suspicion must remain that there was a religious motive connected with the ruler cult (cf. Grueber, vol. II, 398-9, note 2 and also note 12 above).

14 H. Mattingly: “Coins of the Roman Empire in the British Museum” (London, 1923ff), vol. I, 146, No. 1-4, 147, No. 10, 148, Nos. 16-17, 149, Nos. 24-25 [and 162, No. 105—drachm of Caesarea].

15 H. Mattingly, vol. I, 217, No. 120ff (Dupondii and R. S. Poole: “Catalogue of the Coins of Alexandria and the Nomes in the British Museum” (London, 1892), 15, No. 112ff (Billon Tetradrachm).

16 Mattingly, vol. I clxxi.

17 S. W. Stevenson: “A Dictionary of Roman Coins” (London, 1889), 754-5, discusses some of the types.

18 H. J. Rose: “Handbook of Greek Mythology” (6th edn., London, 1958), 32.

19 Stoics, Seneca Ben VII, 31, 3; Cicero Ac II, 41, 126; Diog L, VII, 139; Orphics, Linforth: “The Arts of Orpheus” (Berkeley 1941), 205-6, for sources. Orpheus is said to have identified Dionysus with Helios and Orphic Hymn VIII is addressed to Helios. Also cf. Altheim: “A History of Roman Religion” tr. Mattingly (London, 1938), 397, which also deals with the whole problem of the relationship between Helios-Sol and Apollo.

20 Nero unable or unwilling to appreciate fine theological argument combined an artistic conception of Apollo born of his philhellene sympathies with a personal devotion to the sun, which rose while he was being born (Suet. Nero VI; the Ominous predictions are surely the results of hindsight). Later a measure of Mithraism was added through his admittedly superficial contact with Tiridates and the Armenian Court. The Hellenistic idea of the “Sun King” can hardly have passed unnoticed and it presumably played a large part in the emperor's creation of a personal cult. For Nero's attitudes cf. Jean Gagé “Apollon Romain” (Paris, 1955), 656ff.

21 Dio Cassius LXIII, 1-2.

22 For example: Juvenal I, iii, 62ff, for a famous diatribe against easterners.

23 O. Doppelfeld: “Römischer und Frankisches Glas im Köln (Cologne, 1966), 34.

24 Tacitus Hist III, 25.

25 E. and J. E. Harris: “The Oriental Cults in Roman Britain” (Leiden, 1965), 50 and 106; R.I.B. 1137 (Corbridge). A cremation burial from Warwick Square, London, is enclosed in a lead canister upon which is the figure of Sol in a Quadriga, as on the London gem cited in note 8. It is presumably of first or early second century date. J. M. C. Toynbee: “Art in Britain Under the Romans” (London, 1964), 353. On a glass head vase from Caerleon with a head of Sol on its base, found in early second century context idem 379-80, plate LXXXVII c; probably of Rhineland manufacture.

However, it is still interesting to see that Sol can be used merely to symbolise the East, even at this date (Mattingly III 249, No. 75 and pl. 48, 8).

The quality of the engraving suggests that our ring belonged to an officer, perhaps a decurion of cavalry . . . The praefectus would probably have worn a gold ring²⁶ (although as we are dealing in a large measure with personal taste, it is hard to be certain on such points).²⁷ Possibly the owner had a special attachment to the sun or even a veneration for Nero,²⁸ whose features this intaglio

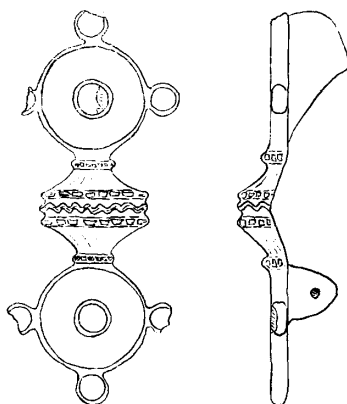


Fig. 2—Bronze brooch from Carzield (actual size).

somewhat resemble—or it had a more general message, symbolising divine beneficence. It would be a great mistake to assume that we can deduce a man's beliefs from a single object when our only contact with the past is through sources for the most part sophisticated and remote from daily life.

Although the pottery alone would suffice to date the deposition of our ring, the brooch mentioned above is worthy of some attention. It was found within six inches of the ring and could have been lost or abandoned at precisely the same time; yet just as the former object was as fine a piece of Classical Art as one could expect to find in the context of an auxiliary fort, the brooch is a remarkable hybrid of undoubted N.-W. European manufacture, and was indeed probably made in Southern Scotland or Northern England.²⁹

It consists of two bronze discs enamelled in blue and red (as shown Fig. 2).

²⁶ As was the privilege of the *Ordo Equester*. However, there was clearly opposition to such ostentation (Pliny N.H. XXXIII, IV) and it does not follow that everyone entitled to wear a gold ring actually did so, any more than it is allowable to assume that rich Freedmen never wore such a ring (Pliny N.H. XXXIII, VIII).

²⁷ Two bronze statuettes are mentioned by Birley and Richmond (*Trans. Dumfries and Galloway*, XXIV, 158). They were "not in good condition when found" but had "once been good works of art, considerably better than any normally associated with an auxiliary fort . . . Troopers had better pay and could therefore afford more expensive luxuries than infantry." It is possible that the ring belonged to an ordinary cavalryman.

²⁸ Not impossible—for the execration of Nero by the senate and the Christians was not shared by the rest of the population who venerated his memory. Cf. M. Grant: "Roman History from Coins" (Cambridge, 1958), 36-37.

²⁹ North Britain is thought to have been the centre for the manufacture of both Fan-tail and trumpet brooches (Collingwood in *Archæologia* LXXX, 1930, 37 ff). The dominant colours of enamelled brooches from this area are red and blue (Françoise Henry: "Emailleurs d'Occident" in *Préhistoire*, II fasc I (1933) 118). A possible factory site for enamelled brooches has been discovered at Nor Nour in the Scilly Isles (*Arch. Journal* CXXIV (1967) 28ff) thus demonstrating that manufacture could be centred on a region peripheral to the empire.

Each has three lugs and on the fourth side, they are joined by a strip of bronze which fans outwards and meets at a transverse band containing a zig-zag. At this centre point the surface is raised and on the underside is a pronounced carination. Attachment was by means of a pin attached to a bar of metal below one of the discs, and it was secured to a catch plate below the other.

The dimensions of the brooch are: Length, 51.5 mm.; width of discs, 14 mm. (with lugs 22 mm.); width at centre, 14 mm.; depth, 4 mm.

It has so far proved impossible to trace a precise parallel, although a number of complex brooches of this period are recorded. From Lydney comes a flat brooch consisting of four enamelled discs while a fibula found at Strassbourg is formed of two contiguous wheels, each with three lugs but set between two triangular plates (i.e. They form the short axis of the brooch and not the long axis as at Carzield). Other Fibulae from Britain, Pannonia and the Rhineland are constructed on an equal arm principle.³⁰

However, none of these brooches appears to have more than a superficial resemblance to the Carzield example. Here the prototypes are probably the disc brooch—and the developed trumpet brooch. The second of these [Collingwood type Rii] is particularly at home in Scotland and Northern England, and fine specimens are recorded from Backworth, Newstead, Mumrills, Traprain Law and Luce Bay.³¹ Disc brooches are also known from sites in Scotland (for example, Newstead).

Here two enamelled discs are joined by means of a fitting derived from the characteristic double acanthus moulding³² normally associated with early second century trumpet fibulae. The dating can hardly be in doubt for both types are characteristic of the second century. Nor are hybrids unexpected since Miss Richardson has pointed out a number of trumpet brooches³³ which have an enamelled disc in place of an acanthus moulding on the bow, and which were indeed developed in the frontier region of North Britain.

2 Onyx set in an iron finger ring: Near High Torrs, Luce Bay, Wigtownshire.

Previous Publication: *Transactions of the Glasgow Archaeological Society*. N.S. VIII, part III (1933), 146-151, by L. Maclellan Mann. This gives the following details:

- a. It was associated with a cremation burial situated under a cairn of large boulders.
- b. Other grave goods included two vessels of late second century samian, a small

³⁰ Lydney: Wheeler (Society of Antiquaries Research Report IX, 1932) 81 and fig. 16, 45. Strassbourg: "Denkmäler der Elsassischen Altertums-Sammlung zue Strassburg" (Strassbourg, 1912), Pl. XXXIV, 30. Pannonia: E. V. Patek: "Verbreitung und Herkunft der Römischen Emailfibeln in Pannonien" (Budapest, 1942), pl. XV, 13. Rhineland: "Die Provinzialrömischen Emailfibeln der Rheinland" (B.R.G.K., 1939, No. 29, 31ff).

³¹ Backworth "Guide to the Antiquities of Roman Britain" (British Museum, London, 3rd. Edn. 1964), 18, fig. 9, No. 17. Mumrills, P.S.A.S. LXXIII (1928-9), 553 and fig. 115, 1. Newstead Curle: "A Roman Frontier Post," 321-3, pl. LXXV and LXXVI, 8-16. Traprain Law: P.S.A.S. LVI (1921-2), 233, fig. 28, 1-2. Luce Bay: P.S.A.S. LXVI (1931-2), 376, fig. 57.

³² On acanthus mouldings upon trumpet brooches cf. Collingwood in *Archaeologia* LXXX (1930), 45.

³³ "A Roman Brooch from the Outer Hebrides" (*Antiquaries Journal* 40, 1960, 200-213). The three best come from Scotland, 202.

- bronze ring, fragments of two iron spear-heads, part of the blade of an iron sword, some iron nails. The spear-heads and sword blade are illustrated.
- c. The intaglio in the ring is described as "an oval bevelled gem of pale green chalcedony" (plasma). The subject engraved on it is "a female robed figure with outstretched left arm holding what looks like a palm branch"—Mann identifies her as "Possibly Virgo of the Zodiac" but he suggests Venus Victrix "bearing a palm and wearing a helmet" as a more likely alternative. A plate shows the ring as found and also a poor drawing of the intaglio.
- d. It is concluded that "the burial in question was that of a sailor of the Roman fleet who had died at sea."

Proceedings of the Society of Antiquaries of Scotland LXVI (1932), 375-6 and 284. James Curle. This identifies the Samian Forms as D37 and D72, but otherwise adds nothing new. However, two trumpet brooches also from Luce Bay are illustrated on Fig. 57.

The material is now deposited in the City Museum and Art Gallery, Glasgow. The ring has been cleaned of most of the corrosion which has obscured its form; it belongs to the usual second century type with a wide hoop at the bezel which narrows from the shoulders, in order to allow free movement of the finger joints (cf Henkel, 1546-1555). In Britain there are comparable rings from South Shields and Silchester (iron) and from Colchester (bronze).³⁴

The dimensions are: Breadth (external) 28 mm., (internal) 17 mm., depth (external) c. 23 mm., (internal 17 mm.), width across bezel 17 mm., width at narrowest part 4 mm. The intaglio is of Nicolo (i.e., an onyx with a light blue upper surface on a very dark ground). The upper layer is very thin and the stone cannot be regarded as a very high quality gem, but it is certainly not plasma. Wear is considerable, part of the surface being chipped and almost all of it rubbed, however, the parts sunk in intaglio retain their shine. Dimensions: 15 mm. x c. 13 mm. (bevelled upper surface 10.5 mm. x 8 mm.). Its thickness was assessed at 2.5 mm. as the lower surface of the bezel had been cut away to show the underside of the gem which was, naturally, fresh and highly polished.

The subject is a common one on gems, coins and other works of art, for it represents Minerva wearing a belted peplos and a crested helmet, standing front and facing left (Plate X, right). She holds a Victory clutching a wreath in her right hand and a shield and spear in her left (although a break in the stone has made the weapons hard to distinguish). The type is derived from the Athena Parthenos of Phidias. In Britain there are a number of parallels mainly datable to the 1st or 2nd centuries; they include gemstones from Charterhouse on Mendip (cornelian), Slay Hill, Kent (burnt cornelian), Manchester (cornelian),

³⁴ South Shields cf Arch. Ael. 4 XXXIX (1961), 29-30, No. 75 and pl. 3, 14. Silchester. In Duke of Wellington's Collection in Reading Museum, No. 03027. Colchester. British Museum Accession, No. 72-4-2-78 [=Marshall Cat of Rings, No. 1350] and Castle Museum, Colchester, 53, 1890 (unpublished).

Chesters (paste), and with slight variation Holt and Bath (both cornelian).³⁵ Many intaglios with the same subject have been found on continental sites.^{35a}

Coins with the type of Minerva holding a Victory and spear occur during the reigns of Domitian and of Antoninus Pius.^{35b}

Minerva is well attested on military sites in Britain. Inscriptions: RIB 2104 (Birrens), 2177 (Auchendavy), 429 (Caernarvon), 457 (Chester), 1101 (Ebchester), 1134 (Corbridge), 1266-8 (High Rochester), 1542-3 (Carrawburgh), 1788 (Carvoran).

Sculpture: It is true that much of the artistic evidence for the worship of the goddess comes from Civil sites where Minerva had other functions,³⁶ but we can note at least a relief on a quarry face at Handbridge (Chester)—F. H. Thompson: "Deva, Roman Chester" (Chester, 1959), 42; a relief from Carrawburgh—Collingwood Bruce "The Roman Wall" (3rd edn. London, 1867), 172; the Guisborough Helmet, where she is associated with Mars and Victory—J. M. C. Toynbee: "Art in Britain under the Romans" (Oxford, 1964), 161, pl. LXVIII, and a figurine refashioned as an amulet from Richborough—J. M. C. Toynbee, *idem*, 82 n 3 and J. P. Bushe-Fox: Richborough IV (Oxford, 1949), 138 and pl. 44, No. 163.

Minerva was the Patron and warrior goddess of Domitian and, apart from his coins, she occupies a prominent position on the *Profectio* relief [Frieze A] from the Palazzo della Cancelleria,³⁷ where she is closely associated with Mars.

The weapons found with the burial are of the greatest interest despite their fragmentary condition,³⁸ for they comprise the standard equipment of an auxiliary soldier (Tac. *Annals* XII., 35)—a long sword or SPATHA and two spears or HASTA. Both types of weapon can be paralleled, for example at the fort at Newstead³⁹ and representations of them are recorded on military tombstones.⁴⁰ Unfortunately, they provide no clue as to the branch of service in which our soldier was engaged. The nearest Fort by land in the second Antonine period was Glenlochar, but the proximity of the burial to the shore implies that the unit responsible had made a landing from the sea: in this case

³⁵ Charterhouse (V.C.H. Somerset fig. 93; Bristol Museum F. 2111); Slay Hill (Walters, No. 1352; British Museum 83-12-13-553) (both second century). Manchester, F. A. Brunton: "The Roman Fort at Manchester," 83, pl. 42 (in late third century ring). Chesters. Arch. Ael 4, XXXIX (1961), 29, No. 73 and pl. 54. Holt Grimes: "Holt Denbighshire—The Works Depot of the Twentieth Legion at Castle Lyons (London, 1930), 129 and fig. 60, 1. Bath: Society of Antiquaries Research Report, "The Gem Stones from the Main Drain," No. 2 (forthcoming).

^{35a} cf. Henkel No. 1446 (Bonn cornelian); 118 (Trier Cornelian). G. Sena chiesa: *Gemme del Museo Nazionale di Aquileia* (Aquila, 1966), Nos. 106-122; 106 Nicolo, most of remainder cornelian. D. Tudor: "Pietre Gravate" in *Buletinul Comisiunii Monumentelor Istorice* (1938), 47 and fig. 21a (Romula, Romania. Red Jasper). Furtwangler: *Beschreibung* Nos. 8171 (Nicolo), 2365-6 (plasma), 7235-42 (Cornelian). P. Fossing: *The Thorvaldsen Museum—Catalogue of the Antique Engraved Gems and Cameos* (Copenhagen, 1929), Nos. 605-6 (plasma); 1698 (cornelian). Walters: Nos. 1348-51 (sardonyx). G. A. Richter: *Metropolitan Museum of Art, New York. Catalogue of Engraved Gems, Greek, Etruscan and Roman.* (Rome, 1956), 269 (plasma). *Bulletin Van de Vereeniging tot Bevordering der Kernis Van de Antieke Beschaving Te'S Gravenhage* XLIII (1968), 48, fig. 14 (Cornelian from Asia Minor).

^{35b} H. Mattingly: *Coins of the Roman Empire in the British Museum* (London, 1923ff) = B.M.C. Domitian A.D. 81-82, B.M.C. II, No. 12. Antoninus Pius, A.D. 138-161, B.M.C. III, 370, No. 1007. B.M.C. IV, 2, No. 4. Marcus Aurelius, as Caesar, B.M.C. IV, 317, No. 1909.

³⁶ J. M. C. Toynbee: "Art in Britain under the Romans" (London, 1964), 77-82, 161.

³⁷ J. M. C. Toynbee: "The Flavian Reliefs from the Palazzo della Cancelleria in Rome" (London, 1957) 9.

³⁸ Illustrated. *Glasgow Arch. Soc.* VIII, part III (1933), plate opposite 150.

³⁹ Curle: "A Roman Frontier Post and its People" (Glasgow, 1911), 183-5, pl. XXXIV, 6-7 (swords) and 188, pl. XXXVI and XXXVII (spears).

⁴⁰ cf J. M. C. Toynbee: *Art in Roman Britain* (London, 1962), 157-8 and pl. 87; Cat. 82.

Bowness-on-Solway would have been the nearest and most convenient "home" base.⁴¹

The arrangements made for the burial of the dead were elaborate but anomalous, although Roman barrow burials are well attested elsewhere in the country and abroad. Here, the conditions of active service doubtless dictated the form of the cairn, although it is significant that a great deal of trouble was expended on it. Burial in the Roman army was a well-organised affair, and a proportion of each soldier's pay was earmarked for this eventuality.⁴² Thus military decorum, a desire to impress the natives by a display of organisation and efficiency and the usual Roman respect for the spirits of the dead, combined to create an imposing monument in a remote part of Galloway.⁴³

3 Paste imitating Nicolo (with blue upper surface and dark ground): Birrenswark, Dumfries.

Previous Publication: P.S.A.S. XXXIII (1898-9), 247, Fig. 5. "Intaglio setting of dark blue paste for the bezel of a finger-ring, oval in shape, measuring $\frac{3}{8}$ in. x $\frac{1}{2}$ in., bearing a standing figure, surrounded by the remains of an inscription much defaced."

The intaglio is now in the Museum of National Antiquities, Edinburgh (Accession Number GP97). Dimensions 12 mm. x 9 mm. c 2 mm. thick. Fair condition. The apparent illegible inscription is caused by corrosion of the paste around the edges.

The subject is Venus, nude apart from a mantle draped around the lower part of her body, standing right and leaning upon a pillar. She holds a helmet in her outstretched right hand, and before her on the ground is a shield. The type can be identified with Venus Victrix, used by Julius Caesar⁴⁴ as his seal and commonly found on Roman gems and coins (Plate X, left).

Gems: There are parallels from a number of British sites including Wroxeter, Caerleon and South Shields (all Nicolo paste) and Caerleon (Nicolo).⁴⁵

Numerous examples of the type have been recorded.^{45a}

Richter suggests that the type was copied from a statue of IVth-IIIrd century B.C.⁴⁶ It was undoubtedly well known and popular in the 2nd century A.D., the probable date of most of the extant British intaglios carrying the figure.

41 And it was of course the departure point for travellers in Northern waters, R.I.B. 2059.

42 H. M. D. Parker: "The Roman Legions" (Oxford, 1928), 217-8.

43 Trans. Glasgow Arch. Soc. N.S. VIII, part III, 148. Mann suggests that the natives of Galloway had a treaty arrangement with Rome which explains "why this Roman burial on a most prominent position near the shore in Wigtonshire should have been permitted by the natives and should indeed have remained apparently undisturbed by them."

44 Dio Cassius XLIII, 43. The Julian "gens" claimed descent from Venus.

45 Wroxeter. J. P. Bushe-Fox: Society of Antiquaries Research Report IV. Third report on Excavations at Wroxeter: (1916), pl. XVII, 28. Caerleon. J. E. Lee: "Isca Silurum" (1862), 69, pl. XXXV, 15, and Wheeler in Archaeologia, LXXVIII, 166, fig. 14, 28. South Shields. Archaeologia Aeliana 2 X 265, No. 3. 45a e.g. Fossing: Nos. 695-710. Furtwangler: Nos. 2388ff, 2990ff, 3697, 7439, 8196, 8439, 8670, 11358. Walters: Nos. 1446, 2814. Chiesa: Nos. 248-264. Richter: Nos. 300-301. Henkel: Pl. LXXV, Nos. 143-144. Coins—Grueber II: 10, No. 4333-4 and pl. LIX, 8, 9. = Mattingly I: 98-9, No. 599-601 (Octavius 36-29 B.C.). Mattingly II: 45, No. 255 and pl. 7, 20 (Titus A.D. 79) from which time Venus Victrix appears frequently, e.g. Mattingly IV: 406, Nos. 161-2 and pl. 56, 13, with legend "Veneri Victrici" (M. Aurelius and L. Venus).

46 Richter: Metropolitan Museum, Catalogue 73, No. 300.

Paste intaglios were produced cheaply in moulds,⁴⁷ although (as here) they frequently reflect prototypes of higher quality.

Conclusion:

The three ringstones under discussion comprise but a small proportion of the total material of the type available from sites in the British Isles: nevertheless, each of them has a different importance and significance. The Carzield stone reflects the rise of new gods in the pantheon of Imperial Rome and the diffusion of their worship into remote corners of the empire; the find from High Torrs, on the other hand, shows the traditional deities of Rome

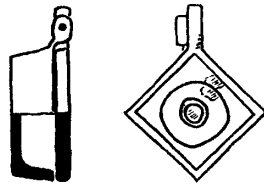


Fig. 3—Bronze and enamelled seal box from Carzield (actual size).

venerated by auxiliary soldiers in a later century, and the image of one of them carried through life and even to the grave. Venus Victrix was a very Roman conception, combining the attractions of the goddess of love with military prowess; the paste from Birrenswark was worn by an ordinary soldier until it fell out of its cheap setting.

Leaving aside the question of dates, it is perhaps allowable to see a difference of social style between a finely engraved cornelian signet from Carzield (probably belonging to an officer) and the competently engraved gem from High Torrs or the paste from Birrenswark. This is reflected time and again amongst finds of engraved gems from military sites throughout Northern and Western Britain, as well as in the Rhineland.⁴⁸

APPENDIX

By A. E. TRUCKELL

Mr Henig's note 27 mentions the reference in the 1939 Carzield excavation report of two statuettes as having been found in the armourer's furnace at Carzield, and cites these as evidence of the occurrence of objects rather more sophisticated than one usually expects among soldiers, and on a par with the seal-stone and very fine double-disc brooch whiche he describes.

There were in fact three figurines (plate XI) when Professor—then Dr—Birley brought them to the Burgh Museum, Dumfries, in September, 1947, they were bloated, deliquescent objects badly affected by "bronze disease"; one of the writer's first tasks was to boil

⁴⁷ Idem. XXVIII-XXIX.

⁴⁸ This is clear at Caerleon where we have only to compare the masterpiece published by Wheeler in *Archæologia* LXXVIII (1928), 170, pl. XXXIII, 2, or the heirloom mentioned in note 5 with the Venus Victrix paste from the same site.

them repeatedly with caustic soda and zinc, removing the active corrosion and exposing the clean golden bronze, though losing some of the detail in the process. They turned out to be a statuette of Dionysios of fine workmanship—probably Italian; a coarser figurine of the garden and crop fertility godlet, Priapus, shown ithyphallic and holding fruit in his gathered-up cloak (a suggestion that cultivation was carried out at Carzield), probably, Professor Birley felt, of Gaulish workmanship; and a little Cupid, with stubby wings and a characteristic cockscomb of hair, which might be British. Some two years ago, when the late Professor Richmond's effects were being cleared up at Oxford, a dainty little hinged bronze box, originally enamelled, from the 1939 Carzield excavation was found and sent up to Dumfries; it seems to be a seal box (fig. 3), and its decoration and enamelling has borne some resemblance to that of the double-disc brooch from Carzield mentioned by Mr Henig.

Finally, a dainty base-silver cloak-fastener—a pin and a wheel-shaped disc with "spokes," was found in the rubbish spread at roughly the same time as the double-disc brooch.

This site, therefore, which besides the 1939 excavation has been worked on a small scale almost yearly since 1948, has yielded objects of art of surprisingly good quality and forming a surprisingly large group for a small permanent fort of this type.

None of this material has been illustrated before, so, courtesy of Mr Gair for the photographs and Mr Williams for the drawings, and with thanks to Mr Henig for allowing the Museum to climb, as it were, on to his paper, this opportunity has been taken to illustrate them here.



Plate X—Left: Intaglio of paste from Birrenswark (by courtesy Nat. Mus. of Antiquities of Scot.). Centre: Intaglio of sard from Carzield (from an impression in the Ashmolean Museum). Right: Intaglio of onyx from High Torrs, Luce Bay (by courtesy Glasgow Museum & Art Gallery). All approximately twice natural size.



Plate XI—3 Bronze figurines from Carzield—see Appendix to article on Three Roman Intaglios from S.-W. Scotland.

TIMBER HALLS IN DARK AGE BRITAIN— SOME PROBLEMS¹

By LLOYD R. LAING, M.A., F.S.A.Scot., F.R.N.S.

In Dark Age Britain there appears a tradition of rectangular timber “halls” which does not relate to the native British tradition of round huts, either stone

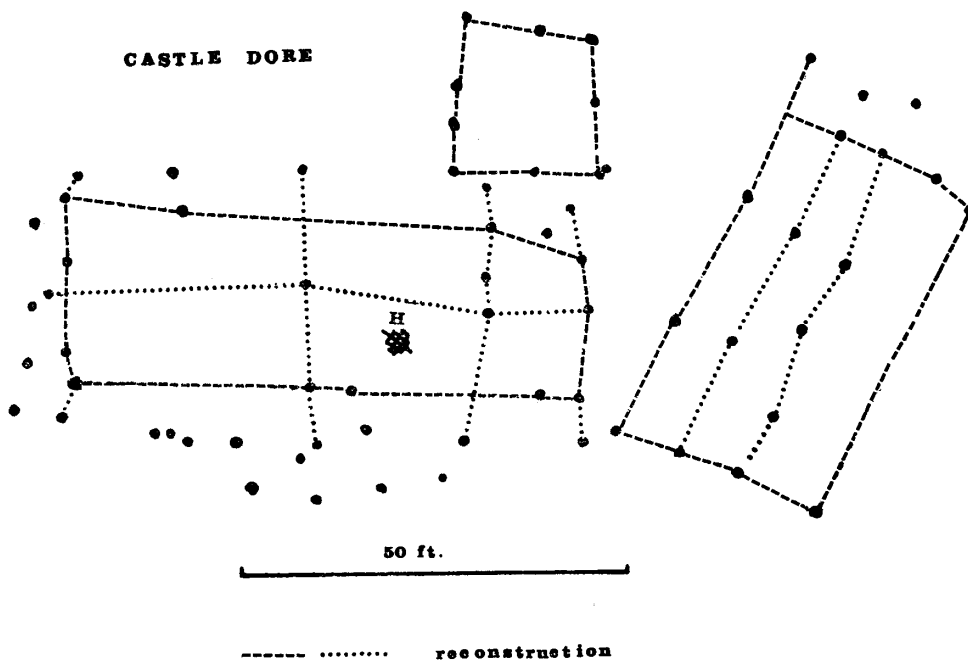


Fig. 1

built or timber framed. In the areas of Germanic settlement these halls are derived from the Continent, with perhaps some influence from Romano-British and native traditions. A second group can also be recognised: these halls have been found mainly in areas where the influence of Germanic building is unlikely to have been felt to any great extent. The object of the following discussion is to outline some of the problems associated with identifying the origins of these buildings, and to summarise present knowledge. While it is apparent that as yet very little is known about them, it does not seem out of place to here discuss the problems following the report on Kirkconnel, as the subject is fundamental to current Dark Age studies.

¹ My thanks to Mr Timothy Clough and Mr A. D. S. Macdonald for discussing various aspects of this with me, and offering useful criticism.

Dark Age British Halls

Several halls of the Early Christian period have now been excavated in Britain, namely at Castle Dore (Cornwall), Dinas Powys (Glamorgan), Dinorben (Denbigh), Doon Hill (East Lothian), and Kirkconnel (Dumfries). In addition there is a possible Dark Age timber hall from Dalry (Ayrshire), found in the

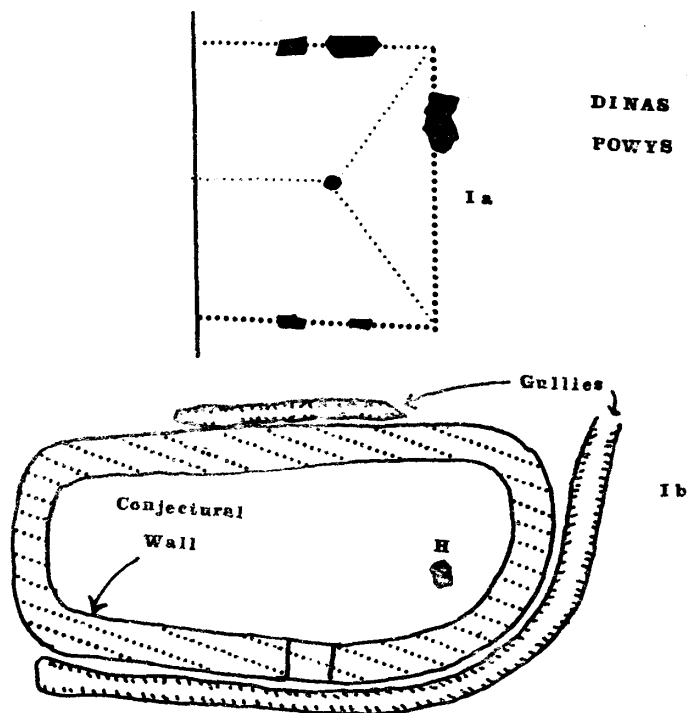


Fig. 2

nineteenth century and not then recognised. We may begin by considering each of these in turn.

Castle Dore was excavated in 1936-7 by Dr Radford, and was a small Iron Age fort with later associations, notably with the Arthurian Cycle.² From a complex of post holes Radford has reconstructed two halls, one measuring 90 feet by 40 feet, with a projection on the N. side which he interprets as a porch. Adjoining it he has reconstructed a smaller, less substantial building, about 24 feet square, which he interprets in the light of Irish texts as a kitchen. A second and later hall was also distinguished, measuring 65 feet by 35 feet, as well as other buildings including a doubtful granary and an uncertain paved building. At this period the fort was refortified with guardchambers at the

² Radford, 1951. Discussion of the "palace," 96-7.

gateways.³ Due to later disturbance and other factors there was no closely datable associated material, but pottery now recognised to be of Thomas' sub-Roman class was recovered.⁴

An important feature of these halls is their very irregular construction, and uneven spacing of post-holes. Radford has reconstructed Hall I as an aisled building, though both this and Hall II appear to have had merely a central row of posts for the ridgepole⁵ (Fig. 1).

At **Dinas Powys** two buildings were identified, a hall and a barn, ascribed to the fifth century A.D.⁶ Hall IA was identified from 5 post-holes, with a central post, presumably for a roof support. It was probably unfinished, and measured

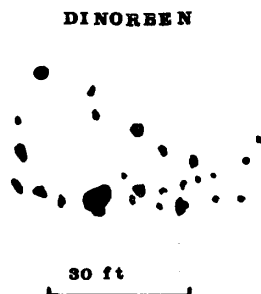


Fig. 3

approximately 17 feet by 20 feet.⁷ It was replaced by Hall IB, which Alcock suggests was a stone building, though no traces survived. Its shape was determined by gullies, interpreted as eaves drips. This building measured 50 feet by 20 feet, with an apsidal end and a slight taper. Next to it was a possible barn, 30 feet by 20 feet. No dating evidence came from the buildings, but there was abundant evidence for Early Christian occupation of the site (Fig. 2).

At **Dinorben** a complex of post-holes was interpreted as a hall of aisled type, at least 55 feet long by 25 feet wide, again with the posts irregularly spaced and in only rough alignment. Savory has interpreted these in terms of six lines, i.e. as an aisled building⁸ (Fig. 3).

The British hall at **Doon Hill**, which seems to have been replaced by an Anglian one (Hall B) in the seventh century, has been dated by its excavator to the sixth century. Hall A measured 75 feet long and was also built of posts set in single holes, except for the gable ends which were of "open book" formation and composed of sleeper beam trenches into which the posts were set. At the angles of the gables, where the sleeper beams converged, were single

³ A feature of Welsh enclosed hut groups and of Dark Age modifications to other forts, such as Trusty's Hill, Anwoth, to quote a local example (Thomas, 1961, 65).

⁴ Thomas, 1959, 108.

⁵ Radford, 1951, 60-70.

⁶ Alcock, 1963a, 26-34.

⁷ Alcock, 1963a, 28-9.

⁸ Gardner & Savory, 1964, 106-7.

post holes. Further holes beyond were probably for buttresses of sloping beams. Internally the hall was subdivided by two rows of three posts.⁹

The features of **Kirkconnel** need not be discussed, as they are given in the excavation report (p. 134-6)—the hall appears to have measured about 18 feet by at least 55 feet, and to have been constructed with single post holes in which had been set whole and split trunks. On the north side there may have been an entrance screened by a light partition. The main timbers seem to have been

DALRY

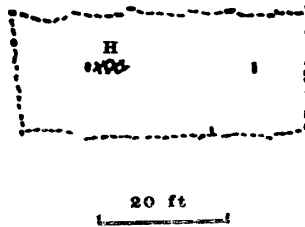


Fig. 4

lightly buttressed by dry-stone walling, particularly those at the corners, while between them the walling was probably of turf, planking or wattle work. There seems to have been no internal division, though evidence of light partitions may have been removed when the floor level was reduced. The W. end seems to have been angular, possibly also of "open book" formation, though the single post setting could have been that of a buttress. It does not appear to have been aisled.¹⁰

The hall at **Dalry** was excavated in 1872-4 by Cochran-Patrick. Here a large mound known as the Court Hill (possibly a motte?) was extensively excavated, and beneath it a timber building, 46 feet long by 20 feet, was encountered, built of single posts with wickerwork between the uprights. Some of the posts were well preserved. The building was of regular rectangular shape. There are no recorded datable finds, except a Beaker which does not seem to belong to the building. Evidence might suggest that this is the predecessor of a timber motte tower which replaced it, in which case it should be ascribed to a "Dark Age" date.¹¹ Coles and Simpson, however, consider it akin to timber buildings found under unchambered barrows in England, and akin to a similar class of structure at Pitnacree, Perthshire, while admitting a possible Early Medieval date. While this is conceivable, the present writer knows of no Neolithic "Mortuary House" which can be closely compared with the Court Hill structure.¹² (Fig. 4.)

A few points may be noted about the interpretation put on some of the

¹⁰ See p. 136.

⁹ Hope-Taylor, 1966, 175-6.

¹¹ Cochran-Patrick, 1874, 281-5.

¹² Coles & Simpson, 1965, 46.

above halls. There is no reason to suppose that Hall IB or II at Dinas Powys was of stone construction. They could easily have been constructed on a timber framework laid immediately on ground level, the uprights being slotted into sleeper beams. The site was disturbed, and therefore very slight depressions where sleeper beams had rested could have been destroyed. They could also conceivably have been built of clay or alternating stone and turf.

In the case of Dinorben Savory has suggested that the hall was derived from the Roman basilican villa, and quoted Llantwit Major as a Welsh prototype, though admitting that it is not really similar.¹³ He points out that its width (27 feet) is that assigned to a stock owning chief in the **Crith Gabhlach**, and interprets the plan in the light of the reconstructed model of the Irish house which Sir Ian Richmond illustrated and discussed in 1932. The available evidence, however, for such a reconstruction is not strong, and little can be made of interpreting alignments within the Dinorben hall from the evidence—the site was badly disturbed, and many of the post holes are very dubious, being irregular depressions like other natural features on the site, sometimes only a few inches deep. The angle of the building and the two outer alignments are, however, quite clear, though the internal confusion of post holes lends itself to any interpretation. The Dinorben hall in the absence of associated finds can only be dated later than a large round house of Roman date on the site. Savory suggests that the idea for the aisled house was transmitted from Wales to Ireland and other areas in the West¹⁴—a hardly credible suggestion since Dark Age contact with Wales took the form of an Irish migration to Wales, not from it.

The possibility of Anglian influence in Doon Hill Hall A and Kirkconnel cannot be altogether dismissed.¹⁵ In the case of Kirkconnel the hall bears some similarity in plan to Anglian structures. We must bear in mind that Anglian influence penetrated this part of Dumfriesshire at an early date, and there were pagan Angles round Hoddom about 600 A.D. or a little earlier.¹⁶

Hall A at Doon Hill, although smaller than those of Aethelfrith and Edwin at Yeavinger, was laid out on exactly the same proportional basis, and the gable walls were constructed with sleeper beam trenches. Hope-Taylor has suggested that this feature (characteristic of Yeavinger but not elsewhere) is due to a survival of native building tradition;¹⁷ on the other hand the native building tradition was predominantly in stone in Northumberland, and timber was probably an early Anglian constructional feature. It is true that in the fort of Yeavinger Bell there were large numbers of Iron Age timber huts and some possibility of occupation in the Roman period, but Jobey has been inclined to

¹³ Gardner & Savory, 1964, 106-7.

¹⁴ Gardner & Savory, 1964, loc. cit.

¹⁵ There are Anglo-Saxon parallels for the type of hall represented at Kirkconnel, but they are hardly valid as they are too late. Kirkconnel compares particularly with the late Saxon building C at Thefford, which was also constructed with single post holes rather than sleeper beams, and also had bowed out ends. See Davidson, 1968, 192.

¹⁶ Radford, 1962, 128.

¹⁷ Hope-Taylor, 1966, 176.

regard this with suspicion because of the absence of stone huts.¹⁸ Hope-Taylor admits that the fundamental relationship between Hall A at Doon Hill and the earliest sixth century halls at Yeavinger is beyond doubt, but he is inclined to see the Yeavinger buildings as being a regional development under royal Anglo-Saxon patronage of earlier north British traditions. It is, however, equally possible that Hall A is itself the product of a British tradition affected by the Anglian. The hall could have been influenced by Anglian contacts in the period immediately preceding the annexation of S.E. Scotland. Hope-Taylor suggests that Hall A was destroyed c. 640 during the reign of Oswald, and points out that Hall B which replaced it is similar to structures attributed to his time at Yeavinger.¹⁹ Anglian contacts in the pagan period (i.e. before c. 600) are perhaps attested by a pagan Saxon grave with Northumbrian affinities from Dalmeny, East Lothian.²⁰

Prehistoric Building Traditions

Having outlined the archæological evidence for Dark Age timber halls we may now consider some possible antecedents.

In the Early Iron Age²¹ in Britain round houses seem to have been built almost to the exclusion of rectangular, though a few rectilinear buildings are known, notably one at West Harling, Norfolk,²² and the Heathrow (London Airport) "temple," which was associated with round houses.²³

Turning to Continental Europe we see another tradition, in which rectangular houses seem to predominate over the round, usually in groups forming "villages." Before the Iron Age certain basic traditions were established,²⁴ and the "long house" (which according to definition is a house in which living quarters and byre are under the same roof alignment)²⁵ appears to have origins which go back at least as far as the Late Bronze Age. Such houses occur at Elp, Drenthe, in the Low Countries, as early as c. 900 B.C., and slightly later there is a series of long houses from Ezinge, also in the Low Countries, the earliest of which probably dates from the fifth century B.C.²⁶ (Fig. 5). These long-houses appear to have had roofs which were supported

¹⁸ Jobey, 1967, 97.

¹⁹ Hope-Taylor, 1966, 176.

²⁰ Baldwin-Brown, 1915, 332-3.

²¹ Before the Iron Age in Neolithic Britain rectangular houses and round huts are known, both types occurring at Lough Gur (O'Riordain, 1954), and rectilinear houses have been found on the mainland at Clegyr Boia in Wales and Haldon in S.-W. England (Piggott, 1954, 33-4). Neolithic round huts were found at Hurst Fen, Cambs (Clark et al., 1960, 241). Throughout the Bronze Age the rectangular or sub-rectangular house is very rare, though there are a few instances of rectangular or sub-rectangular buildings, notably at Gwithian, Cornwall (Thomas, 1958, 15) and at Thorny Down, Wilts. (Stone, 1941, 117-26).

²² Clark & Fell, 1953, 13.

²³ Grimes, 1961, 25-8. The main tradition is that of the so-called "Little Woodbury" house—for a recent discussion see Hodson, 1964, 102-3. In actual fact the type site is hardly typical. The single round house tradition in Britain is so distinctive in the Iron Age that Hodson used it as a cultural yardstick. There are however some villages of round houses in the Iron Age, but these are rare—for a discussion, see Bowen & Fowler, 1966, 45.

²⁴ For Neolithic and Bronze Age houses in Europe see Piggott, 1965, 147.

²⁵ Definition in Hurst, 1965, 191.

²⁶ van Giffen, 1936, 40-47. A later example of an aisled long-house can be seen at Fochtelo, also in Holland, which dates from the late first century A.D. or early second century (van Giffen, 1958, 58-71). Here we find a timber hall with single post construction with two lines of posts as a central aisle and clearly divided into house and byre.

on a double row of posts. Certainly by the first centuries A.D. the long-house was well established on the Continent, as exemplified by such sites as Feddersen Wierde in Germany.²⁷

In La Tène France and Germany there is a considerable variety of house types—in the *oppidum* of Mont Beauvray, for example, there was a wide range from small oval huts to a large rectangular hall (wrongly interpreted as a byre)

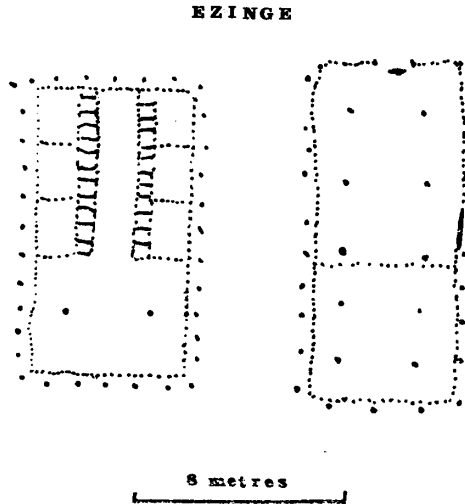


Fig. 5

measuring about 115 feet by 36 feet and divided up into aisles by three lines of post holes.²⁸ At Manching, in Bavaria, more recent excavations have shown that there, unlike Mont Beauvray, all the houses were of timber, and among them were unusual long rectangular buildings, some measuring up to 100 feet by 20 feet, of single post holes.²⁹ (Fig. 6.)

The implications, then, of the above summary are fairly clear. There was in Iron Age Europe a tradition of rectangular building chiefly in timber but also in stone of aisled houses and halls, and alongside these can be found smaller buildings where the aisled construction is absent. It might be mentioned here in passing that the introduction of cruck construction has been attributed to the Iron Age of Continental Europe by some writers, among them J. T. Smith, who postulates an origin going back even to Hallstatt.³⁰ the positive evidence

²⁷ Discussed in Parker, 1965, 3-6. Aisled construction is common in the Danish Iron Age and Migration period houses, as well as elsewhere in Scandinavia, sometimes the central row appearing along with double-row houses in the same settlement. In Northern Europe stone was preferred to timber, except for roofing supports. A good series can be seen at Vallhagar, Sweden, along with squarer buildings. In Denmark, at Asa House D (early Medieval) one end of the house was aisled, the other had a central row of posts (Hurst, 1965, 195). This also applies in Britain, e.g. at Gellygaer Common.

²⁸ Bulliot, 1899, *passim*—hall discussed 18f.

²⁹ Kramer, 1960; Kramer, 1962, esp. pl. 3-4 (opposite p. 300).

³⁰ Smith, 1964, 137-8.

from excavated buildings is however meagre.³¹

The Romano-British Aisled House

In a well-known study in 1932 the late Sir Ian Richmond argued that the Romano-British aisled house, for which parallels had hitherto been quoted from Saxon sources, was in fact derived from Ireland.³² His reasons will be discussed below (p.) but the main point of his thesis was that Irish literary

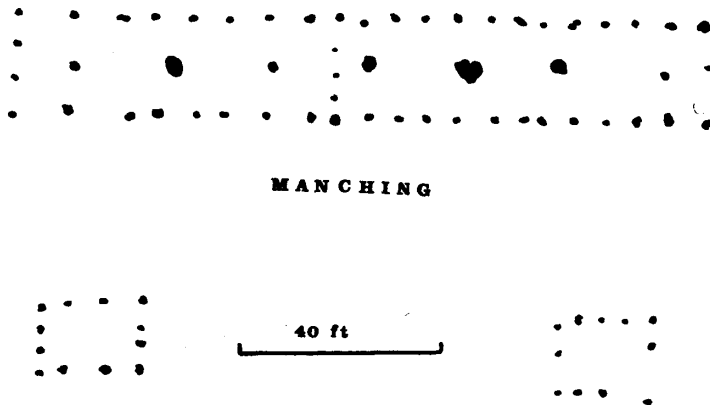


Fig. 6

sources described aisled halls akin to the Romano-British. At the time his theory was not widely accepted, mainly on the grounds that it was held that Ireland's Iron Age was derived from that of Britain, and that therefore if the rectangular timber hall was introduced there in the Iron Age there must have been a British prototype. More recently the Romano-British aisled house has been reconsidered by J. T. Smith, who has convincingly demonstrated that it evolved not in Britain but in the Low Countries, from Iron Age antecedents.³³ It seems very unlikely that they were the prototypes of the Dark Age timber halls, for their plans in the later stages of their development are very complex and far removed from either the simple basilican aisled prototype or the known Dark Age halls.³⁴

³¹ Smith, 1964, 134-6. It is interesting to note in this connection that the distribution of cruck building of the simplest type in Britain lies mainly in the "Celtic" area—see the map reproduced as Fig. 30 of Smith's paper, and discussion 125-6. It is conceivable that cruck construction may be associated with some of the "British" (i.e. non-Germanic) unaisled buildings, though adequate evidence (such as slanting post-holes etc.) is lacking. An Irish origin might be postulated for crucks in Britain—cruck construction appears to have been used in Irish Churches of the Early Middle Ages, and is reflected in later stone skeuomorphs, in butterfly finials etc. For a discussion see Leask, 1955, Chapter VI etc.

³² Richmond, 1932.

³³ Smith, 1963, esp. 17-25.

³⁴ This can be seen from the plans reproduced in Smith, 1963, figs. 1-3. The first timber halls of Landwade (Suffolk) and Denton (Lincs) are however noteworthy on account of their simple plans. Neither is aisled, and each measures about 100 ft. by 25 ft. (For Denton, see Smith, 1963; passim; for Landwade, J.R.S. 1960, 228—plans of both reproduced in Smith, 1963, Fig. 9).

The Influence of Roman Building on Native British Traditions

It has often been suggested that rectilinear buildings in Dark Age Britain are derived from Roman models. While it is very probable that in certain areas the Roman rectilinear tradition may have been a contributory factor, it seems unlikely that all rectilinear buildings are purely survivals from Roman Britain, or were introduced in the sub- or post-Roman periods by refugees either from the civil zone of Roman Britain or from the other provinces of the Roman Empire.³⁵ A study of native building during the occupation shows quite clearly that the native tradition of circular houses and enclosures continued, except where rectilinear plans appear to have been introduced as a part of deliberate Roman policy.

There is another factor too to be borne in mind. The large timber hall denotes a type of social organisation that was essentially barbarian, tribal and localised, and which did not exist in Roman Britain. It was the adjunct of a society where the basic unit was not the nuclear family but the group.

To what extent did Roman influence affect native settlement types during the occupation? We need not concern ourselves here with settlements within the Civil Zone, although in fact there is good evidence to argue that on a peasant level at least Romanisation mainly consisted of the use of Roman merchandise such as pottery.

Outside the Civil Zone there are three areas which are of importance in this connection, the South-West, Wales and the North.

South-West England: Professor A. C. Thomas has advanced the argument that the rectangular plan in both secular and religious building in the south-west was introduced from the Roman Civil Zone, the starting point being Exeter.³⁶ His reasons for believing the double-square plan in the south-west has a Roman origin seem reasonable in the light of available evidence.³⁷ Whether the model came from Britain or was introduced from "Roman Gaul, or even the Mediterranean, and brought largely by sea within the general framework of early Christian contact and peregrination"³⁸ is a matter for dispute. Its introduction too need not have been entirely responsible for post-Roman rectilinear plans in the south-west, and evidence might suggest that it played a more important part in ecclesiastical planning than in secular. In a secular context innovations tend to be made at a higher social level first, and gradually see adoption by precept at a peasant level.

In Cornwall and Devon from the first century B.C. to the late or even sub-Roman period one of the basic settlement types was the "round," or enclosed homestead.³⁹ There is some evidence that during the Roman occupation there was Roman influence on the pattern of construction of stone rounds, and examples of rectangular or sub-rectangular plans are known, especially in

³⁵ Summary in Thomas, 1960a, esp. 156-7.

³⁶ Thomas, 1960a, 158.

³⁷ Thomas, 1960a, 161.

³⁸ Thomas, 1960a, 157.

³⁹ Discussed at length in Thomas, 1966a, 87-98.

Devon. In Cornwall “Romanising” rounds appear in the areas most probably affected by Roman official activity, such as the south coast harbours and west Cornish tin streams.⁴⁰ It is probable however that “rectilinear rounds” are

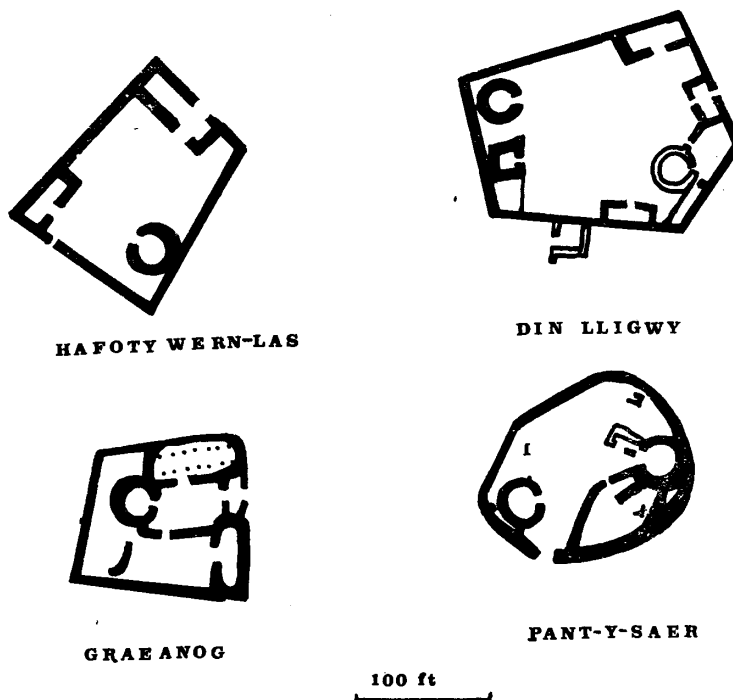


Fig. 7

due to influences other than purely Roman.⁴¹ There is no evidence that any outlived the occupation to continue into the fifth or sixth centuries, and Thomas' recent suggestion that rectilinear rounds may have influenced post-Roman house plans in the south-west is interesting but not completely convincing.⁴²

Wales: The evidence for Wales has been argued recently and extensively, and here we need only concern ourselves with the north-west, where there is a long tradition of stone hut groups. The majority belong to three classes of hut-group, of which the third is known as the polygonal group.⁴³ In these hut groups there is an enclosing wall set out in straight lines and angles, enclosing huts of both round and rectilinear form. The entrance usually leads through one of the rectangular buildings, which has been equated with a porter's lodge. Of these, the most striking examples are Din Lligwy, Hafoty-wern-las and Graeanog (Fig. 7). They appear in the main to date from the period of the Roman occupa-

⁴⁰ Thomas, 1966a, 91.

⁴¹ Thomas, 1966a, loc. cit.

⁴² Thomas, 1966a, loc. cit.

⁴³ In R.C.A.M., *Inventory of Caernarvonshire*, III (1964), lxxxvii-cvi, and in Gresham, 1963, and Hogg, 1966. Useful summary of this in Hogg 1966, 33.

tion, and are mostly, as far as evidence is available, fairly late in date. Hogg has suggested that they represent "officially encouraged new settlement superimposed on relatively sparse occupation . . . possibly enfeebled by punitive measures."⁴⁴ He has also suggested that the majority were the result of deliberate Roman policy in the early third century.⁴⁵

The slight evidence for post-Roman survival of these enclosed hut groups comes from Pant-y-saer in Anglesey. Here the plan shows much less Roman influence, with one rectilinear structure which has been identified as secondary⁴⁶ (Fig. 7). Pottery and a brooch would suggest a date in the fifth century, though evidence points to the occupation of the enclosed hut groups as ending in the main by 400.⁴⁷

It might appear, then, that in all cases where Roman influence is apparent, it was part of official policy, and did not outlast the occupation. One possible explanation for such a policy, apart from Hogg's theory of increasing population, is that the Romans attempted to establish mercenaries in Wales as a defence against the Irish raids on the Welsh coast in the third century.

We must not forget, however, that Wales was far more of a "Civil Zone" area than is often supposed, and civil settlement, especially in the south, was extensive. Influence of Roman building traditions in the native cultures might well be expected, both in the Roman and sub-Roman periods.

North Britain: Turning to northern Britain, we find in the north-east that the tradition of forts and timber framed huts of Iron Age origin are replaced in the second century by stone built huts, which continue into the fourth century. As in Wales they usually consist of an enclosed hut group. There is no evidence in these hut-groups for the transition to rectangular huts at the end of the period of their use, but there is some evidence for this in the large fortified centres such as Traprain⁴⁸ or Yeavinger.⁴⁹ When they do occur on the same sites as the enclosed hut groups, rectangular stone built structures seem to be very much later.⁵⁰

To the south of Northumberland rectilinear enclosure walls and round huts are the general rule, with a very few rectangular enclosures and huts, so far only recognised from crop-marks.⁵¹ The settlements are very roughly spaced out and it seems very possible that this was due to official policy in the second century, to which period most of the dated sites belong.⁵²

In South-West Scotland there are almost no stone huts, and it seems possible that in Dumfries and Galloway the traditions of timber hut building continued. The "birrens" of east Dumfriesshire are possibly related to the earlier Iron Age scooped settlements.⁵³ The huts were probably round in most cases, though a few rectangular examples have been inadequately recorded, and are probably secondary. Beyond, in Galloway, the crannogs may go back to the

44 Hogg, 1966, 33.

45 Hogg, 1966, 35.

46 Philips, 1934; Alcock, 1963b, 284 and 294.

47 Alcock, 1963b, loc. cit.

48 Feachem, 1956, 284.

49 Jobey, 1966, 6 n. 31.

50 Jobey, 1964, 54-5.

51 Jobey, 1966, 6.

52 Jobey, 1966, 8.

53 Jobey, 1966, 10.

Iron Age and Roman occupation in the first instance, and hillforts may have been occupied during the Roman period, as in the case of Trusty's Hill, Anwoth, which, of course, also had Dark Age occupation, or Bankhead, Darvel, occupied in its second phase in the second century.⁵⁴

From the above discussion it can be seen that there was some Roman influence on native house types in the frontier regions of Roman Britain, but usually this can be ascribed to deliberate official policy. There is as yet no certain evidence for the continuity of the tradition into Early Christian times.

The Irish Tradition

During the first millenium A.D. the main settlement type in Ireland was the rath or ring fort, which consisted of a circular enclosure with various internal buildings. Although some stone was used timber was more common, and a wide variety of house types are found inside them, both rectangular and round. The ring fort as such probably began in the Bronze Age, but continued at least until the end of the first millenium A.D.⁵⁵ The most common type of rectilinear timber building was approximately square, with four post holes, as exemplified by the White Fort, Ballymacash, and Larne, Co. Antrim.⁵⁶ The White Fort house had only a timber framework and mud walls. A more elaborate rectangular house with foundation trenches was found at Lisnagade 2, where there was a projecting porch,⁵⁷ and a large trapezoidal house with paved porch was excavated at Craig Hill, Co. Antrim.⁵⁸ At the "Spectacles" near Lough Gur, Co. Limerick, there were rectangular and sub-rectangular houses in an undefended settlement near the shore. Here the houses were stone built, and dated from the later Dark Ages.⁵⁹ Unfortunately as yet very few undefended sites of Iron Age or Early Christian date have been excavated in Ireland, though they certainly existed.

The literary evidence is difficult to assess. The main sources were discussed by Richmond, and need not be repeated here.⁶⁰ Plans of the **Tech Midchuarta** (the Mead Hall at Tara) are given in the Yellow Book of Lecan and the Book of Leinster, and these together with the descriptions of timber halls in the story of MacDatho's Pig or Bricriu's Feast give a fairly clear idea of the great hall of the Irish sources—the sources are, of course, late, but they purport to describe a state of affairs that existed in the Heroic period in Ireland, i.e. the Late Iron Age. Although often reliable in the main, as has been convincingly argued by Celtic scholars,⁶¹ we must, however, be on our guard for later interpolation and rationalization. An earthwork identified as the **Tech Midchuarta** can still

54 For Anwoth, Thomas, 1961, 58.

55 de Paor, 1958, 80. Two useful surveys have recently been published of raths, which summarise the results from excavated examples (Waterman & Collins, 1966, 113-5; Proudfoot, 1961).

56 Proudfoot, 1961, 102.

57 Waterman & Collins, 1966, loc. cit.; Proudfoot, 1961, 100 and 104.

58 de Paor, 1958, 82. The White Fort's house has been reconstructed as having a skylight (Waterman, 1956, 82), though of course the plan as revealed by excavation is aided.

59 O'Riordain, 1949-50, 57-62.

60 Richmond, 1932.

61 For a summary, see Jackson, 1964, 1-5.

be seen at Tara, consisting of two parallel banks with another bank at one end now disturbed by quarrying at the other. The banks are broken at various points by "entrances." This earthwork, O'Riordain identified as being the remains of a long hall, the eaves of which presumably rested on earth or turf banks.⁶² Such an identification, however, seems dubious, and the earthwork can hardly be equated with the **Tech Midchuarta** of literary sources without excavation to prove that it is, in fact, the site of a hall and not a type of enclosure. It is apparent that indeed the **Tech Midchuarta** might, in fact, be a later Dark Age rationalization of this otherwise puzzling earthwork.

From the plans and descriptions, the Mead Hall appears to have been a long hall of aisled type, the nave being kept clear for hearths, and this plan seems to have been similar to that of Bricriu's hall—the compartments on each side served as bedrooms or private dining rooms. Generally speaking, the picture that emerges of the hall is of a building constructed with a wooden frame and weather boarding and with a shingle roof, which was supported by carved pillars. Round the walls were compartments, probably separated by partitions (called in the texts *imdai*) in which the heroes sat with their retainers or followers—these were also probably sleeping quarters.⁶³ On the upper floor level there was a balcony projecting outwards from which women could look out over the countryside.⁶⁴

It may be mentioned at this juncture that Hamilton has suggested that the balcony or "grianan" referred to, belongs to a storeyed house or range alongside the inner face of the rath wall, and considers that the Irish descriptions refer to an arrangement of buildings whereby there are timber galleries running round the inside of the fort wall with access to the walls—paralleled by such buildings as the earliest Iron Age fort at Clickhimin. He discusses at length Da Derga's hostel, which he suggests was, in fact, not a hall but a rath or dun with timber ranges of this sort.⁶⁵ While it is quite apparent that Da Derga's hostel must have been a circular building rather than rectangular,⁶⁶ as must some other buildings referred to in the Irish tales, nevertheless Hamilton's interpretation is open to question. There is also the matter of ridgepoles, which are possibly, but not certainly, mentioned in some texts.⁶⁷

In the general connection of the literary tradition Richmond discussed the **Crith Gabhlach**, a legal document delating to the classification of society and possibly dating from the ninth century. This should be viewed with great caution, since it is highly formalized, and precise figures with regard to measurements of buildings are probably later interpolations. Certain basic points, however, not relating to measurements are no doubt accurate, one being the refer-

⁶² O'Riordain, 1968, 21-23.

⁶³ Jackson, 1964, 20.

⁶⁴ Jackson, 1964, 21.

⁶⁵ Hamilton, 1867, 120-122; Hamilton, 1968, 68-75.

⁶⁶ Contra Thomas, 1960a, 156. It is possible that Mac Datho's house was circular too.

⁶⁷ There is an interesting reference to one house which must be rectangular in the Irish sources, viz. Crede's—"one hundred feet are in Crede's house, from the one gable to the other, and twenty feet in measure are there in its noble door." Quoted in Leask, 1955, 8.

ence to the "cleithe"—possibly ridgepole. The smallest hall in the **Crith Gabhlach** is described as being of wattle construction, with two doors, and with plank partitions between every two beds. In each case only one dimension is given—Richmond argued that this was because the ratio of length to breadth was fixed, and that the dimension given was that of the breadth, and further argued that the length was twice the breadth. While this is possible, it seems more likely in the light of available evidence from early Irish churches that the

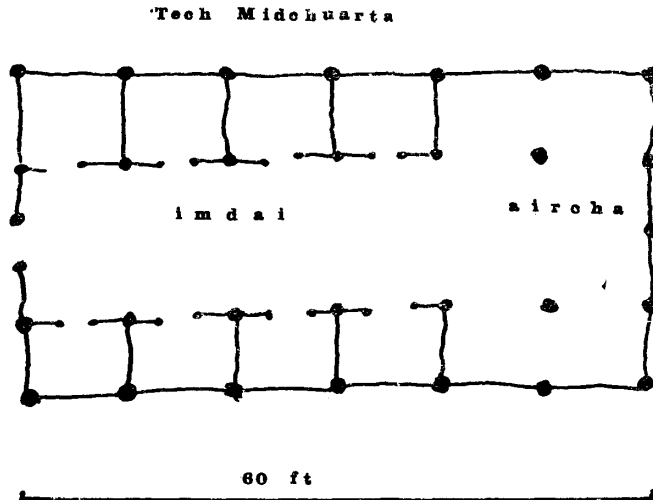


Fig. 8

ratio was 3:2, and this was the ratio (more or less) of the later long-house. (Fig. 8.)

Richmond pointed out, too, that the hall would have to be aisled as it would be difficult to find timbers of adequate dimension to span the building—while this is indeed likely for the largest halls it is not necessarily so in the case of smaller buildings, which could equally well have been roofed with tong or cruck construction, as later Irish ecclesiastical tradition might suggest, or, indeed, as literary sources themselves imply in some cases.

Early Irish churches were of timber, and later, when stone chapels were being built, they retained features of the timber prototypes—some skeuomorphs, such as *antae* or butterfly finials, have been taken to indicate that cruck or tong construction was used in the timber antecedents.⁶⁸

The main argument that has been advanced against a separate Iron Age tradition of long timber halls in Ireland is that the Irish Iron Age is in part derived from that of Northern Britain. This view is no longer tenable—two

⁶⁸ Discussed in Leask, 1955, with references, esp. pp. 6-7 and 45-6. The Irish, on migrating to Britain, brought the timber chapel with them, as exemplified by Ardwall Isle—see Thomas, 1966b, 90-3, also Thomas, 1968.



Fig. 9

recent studies have shown that the Iron Age in southern Ireland was apparently the result of direct cultural contact with the Continent.⁶⁹

Most of the British halls which we have been discussing are scattered up the Irish Sea, the main area of Irish influence (Fig. 9). There is little need to emphasise that the British halls are in the areas most intensively settled by the Irish, or at least within the area in which there was Irish contact and trade.⁷⁰

⁶⁹ Rynne, 1961, 705-9; Jope, 1962, 25-38.

⁷⁰ "The Irish Sea Province" discussed in Alcock 1963, esp. 59-60.

There are objects of Irish origin at Dinas Powys, possibly the work of travelling craftsmen.⁷¹ In North Wales, especially Lleyrn, there appears to have been some settlement possibly on quite a considerable scale, and there was further settlement in Pembroke, associated with the Expulsion of the Desi, c. 380.⁷² In Cornwall again ogam stones, grass-marked pottery and other evidence suggest Irish settlement, probably initially in the late fifth century.⁷³ The question of Irish settlement in Galloway and Dumfries has recently been discussed in two papers in these *Transactions*, and also in a paper in *Medieval Archaeology*.⁷⁴

If we can place any reliance then on the literary tradition, an Irish origin for the British Dark Age timber hall seems possible, with an ultimate origin on the Continent. Although it is possible that Roman and Germanic influence may also be instrumental in the development of the type, there is little evidence that they are the main ancestors of our halls.

One final point may be made—might the origin of the British halls lie in the general climate of Continental contact and trade of the earlier Dark Ages, of which the most tangible manifestations are the imported pottery of Thomas' Class A-E,⁷⁵ the imported glassware from the Rhineland, Egypt and Syria,⁷⁶ the Menas flasks from Alexandria and Coptic metalwork from Ireland and Anglo-Saxon graves?⁷⁷ Continental origins for many elements in the Early Church are now apparent, and the area seemingly most affected by outside influences is again the Irish Sea Province.⁷⁸ While this is a possibility, it remains still a matter of pure conjecture until further examples have been excavated in Britain and until more is known about buildings on the Continent in the Migration Period.

Abbreviations

- Ant.:** Antiquity.
Arch. Camb.: Archæologia Cambrensis.
Arch.J.: Archæological Journal.
J.R.S.: Journal of Roman Studies.
Med. Arch.: Medieval Archaeology.
P.P.S.: Proceedings of the Prehistoric Society.
P.R.I.A.: Proceedings of the Royal Irish Academy.
P.S.A.S.: Proceedings of the Society of Antiquaries of Scotland.
U.J.A.: Ulster Journal of Archæology.

71 Alcock, 1963a, 59

72 Alcock, 1963a, 58.

73 Thomas, 1960b.

74 Rynne, 1965; Thomas, 1966b, 112-6; Thomas, 1967, 177-83.

75 Thomas, 1959, 89-101; Peacock & Thomas, 1967.

76 Harden, 1956, 147-152.

77 Harden, 1956, 156.

78 See, *passim*, Barley & Hanson, 1969.

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EXCAVATIONS AT KIRKCONNEL, WATERBECK, DUMFRIESSHIRE, 1968

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SUMMARY

A short season of excavation was carried out in August and September, 1968, on the site of the deserted Mediæval village of Kirkconnel, near Waterbeck, Dumfriesshire (national grid reference NY 250755). It was hoped that information about Mediæval house types in this part of Scotland would be brought to light. The excavations, however, revealed much of the ground plan of a large timber hall of Dark Age date (6th-7th century) surviving beneath a bank and ditch feature which can best be interpreted as a pillow-mound dating from the late seventeenth or eighteenth century. Diagnostic finds were few. The plan of the hall was indicated by a series of single post-holes which formed part of a coherent plan; they represented a long narrow building with all but parallel sides with its main axis lying east-west. Its average width was about 18 feet and its length more than 55 feet. It does not appear to have been of aisled type.

HISTORICAL BACKGROUND

The field in which the village is situated is known as Kirkconnel Lea, and adjoins the churchyard in which, according to tradition, "Fair Helen of Kirkconnel Lea" is buried beside her sweetheart. The legend of "Fair Helen" was immortalised by Scott, but there is reason to suppose that although much of the ballad in question is a product of eighteenth century romanticism, part at least is much earlier. The legend was familiar to Pennant, who visited the churchyard in 1772, and saw there the two tombstones that are traditionally those of Fair Helen and her lover.¹ No inscription is now visible, but Pennant was able to read HIC IACET ADAM FLEMING on one of them, this recording the name of Helen's lover. The stones themselves are probably of seventeenth century date,² though Pennant suggests that the events described in the legend took place in the time of James V or early in the reign of Mary.³ It is possible, however, that Helen Irving and Adam Fleming lived earlier—one source refers to an Adam Fleming being granted a safe conduct in the late fourteenth century;⁴ this need not be the Adam Fleming of the legend. The church in its present form is post-Reformation, and none of the grave-slabs at present visible are earlier than the seventeenth century, though there is some evidence of the platform of an earlier church beneath the present one. Adjacent to the church

1 Pennant, T. *A Tour in Scotland and Voyage to the Hebrides*, III. (1774), 89.

2 R.C.A.H.M. *Inventory of Dumfriesshire*, (1920), 130, no. 373. Still partly legible in 1912.

3 Pennant, *op. cit.*, 89.

4 Information from Mr A. E. Truckell, in litt.

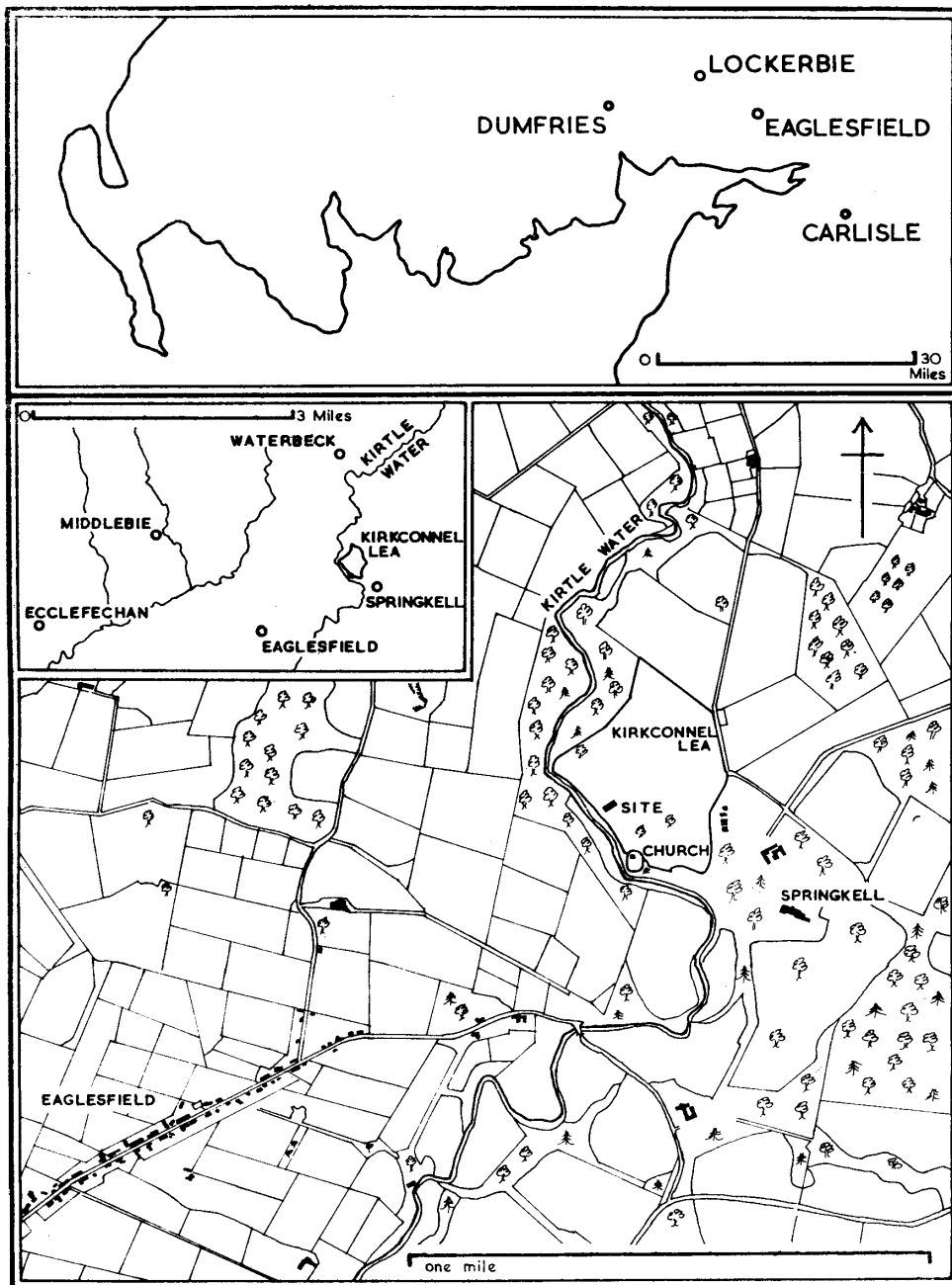


Fig. 1.—Kirkconnel 1968: Location of the site (based on O.S. maps).

is a cross, supposed to mark the place where Helen was killed. There is, however, good reason to suppose that this is, in fact, the village cross of Kirkconnel, later re-erected on the present site when the legend gained popularity. Two panels were engraved on the faces of the cross subsequent to the breaking of one arm, since they are set into the surviving arm and the crossing. The date of the cross is difficult to determine, but it is probably late Mediæval.

It is likely that the village was substantially deserted in the bad years between 1320 and 1360,⁵ but probably some occupation continued until the sixteenth century—there was a mill there in the 1560's, and Pont, who worked in the area in 1595-6, shows on his map of the neighbourhood the church, a mill and a tower house;⁶ the site of the latter is still visible some distance away in the Springkell estate.⁷ However, Pont shows no village. A search in the Scottish Record Office failed to reveal any references which concern this Kirkconnel rather than any of the others in south-west Scotland, and indeed most appear to refer to the village of the same name near New Abbey.⁸

Pennant records that there was a battle on the site in the fifteenth century.⁹

The name Kirkconnel, i.e. "Connal's Church," is not in itself significant, for although the personal name element might suggest an association with Connal, the form of the place-name is late, and is probably connected with a Mediæval church dedication.¹⁰ The name is an "inversion compound," probably of Norse origin, and may date from the 11th century—there are many Norse names in the neighbourhood, e.g. Middlebie; the "Kirk-" element may be a translation at this date of an earlier Irish "Kil-" name.¹¹ The Kirkconnel near New Abbey is associated with a twelfth century church dedication.

There is some evidence for another group of buildings on the high ground to the north of the site; these are probably later than the main village.

It is unlikely that Kirkconnel Lea has ever been other than a pasture field since the village was deserted. There is no suggestion of any much later building here, although according to local sources it was considered as a possible location for the new Springkell House which was eventually built on a different site. The excavations revealed that there was activity of a different nature here in the seventeenth and eighteenth centuries.

The village was first recognised as such by the late Dr R. C. Reid and Dr C. A. Raleigh Radford when they visited the site in 1958.¹²

5 Truckell, A. E. in *The Third Statistical Account of Dumfries* (1962), 37-8.

6 Information in litt. from Mr Truckell.

7 Possibly "Bell's Tower" mentioned in an Act of 1481 for the garrisoning of the lower Annan. see *Dumfries Inventorv.* xxxii. According to Pennant it was here that the Duke of Albany and the Earl of Douglas staved before their defeat at Kirkconnel, see Pennant, *op. cit.*, 88.

8 *Dumfries Inventorv.* 120, no. 332. This church presumably had an earlier antecedent, since an important collection of Dark Age sculptured stones has been recovered from the vicinity.

9 Pennant, *op. cit.*, 88.

10 As in the case of Connal's church mentioned in no. 8 above. According to Watson, W. J. in his *History of Celtic Place-Names of Scotland* (1926), 169, the dedication is to Convallus (O. W. Congwall; Ir. Connal), a disciple of Kentigern, whose chief seat was at Holywood.

11 For a discussion of these, see Thomas, A. C. "An Early Christian Cemetery and Chapel on Ardwall Isle, Kirkcudbright," in *Med. Arch.* XI (1967), 180-182.

12 *Discovery and Excavation in Scotland*, 1958, 20.

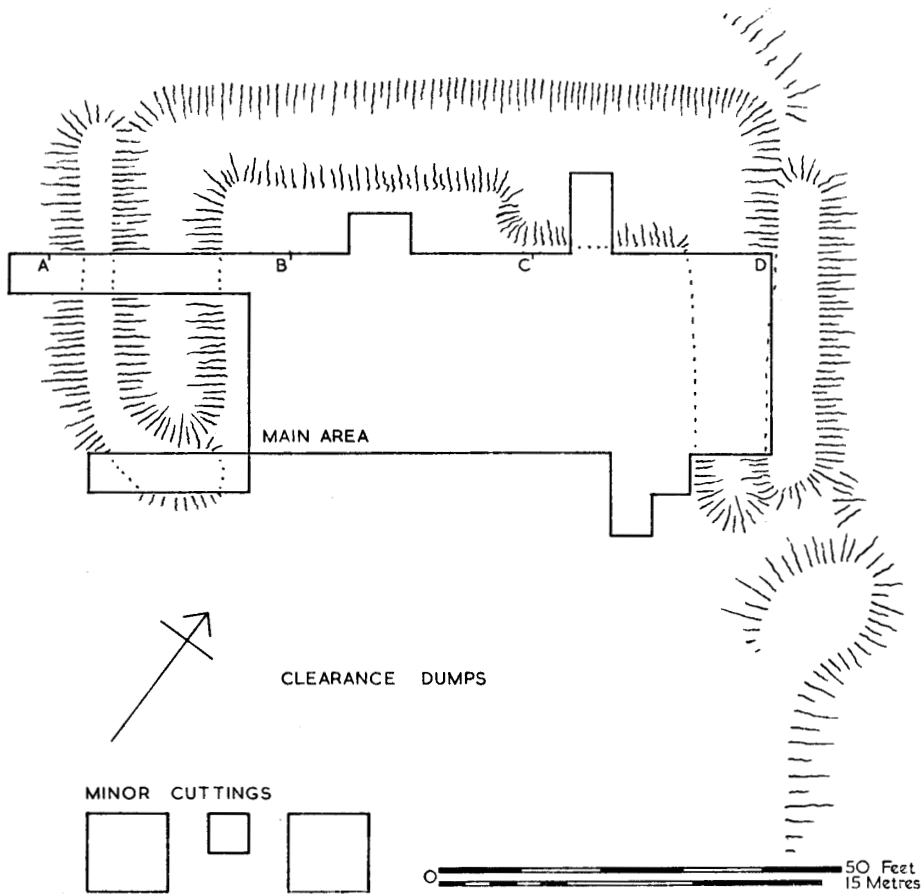


Fig. 2.—Kirkconnel 1968: The excavations in relation to the pillow-mound.

THE SITE (Fig. 1)

The deserted village of Kirkconnel lies on a sand and gravel terrace enclosed by a bend in the Kirtle Water, and is sheltered to north and east by low bluffs reaching down to the river. The site is best viewed from the north-east, from the top of the field; when in a favourable light it is possible to trace much of the plan of the village. A single street, raised above the level of the slight depression in which it lies, runs roughly parallel with the river and is fronted on the north-east by a series of long rectangular or sub-rectangular houses; behind these houses rig-and-furrow can be seen running up the hillside. To the south-west of the street, nearer the river, there are other structures, among them the most prominent feature of the site. This consists of a low bank and shallow ditch which form three sides of a rectangle; the fourth side is obscured by a series of low hummocks.

It was decided to investigate this structure as being the one most likely to yield useful information about the site in the three weeks available.

THE EXCAVATION

The Bank and Ditch (Fig. 2)

Before excavation it seemed just possible that this feature was an unfinished defensive structure perhaps to be associated with a moated manor or tower house. It seemed reasonable to suppose, in the absence of evidence, that it was likely to be linked to the known village. Several factors argued against the supposed defensive character of the site, among them the positioning of the ditch within the bank, hardly a practical arrangement in that context, and the exposed situation of the apparent building in relation to the higher ground to the north and east. A section through the ditch and bank on the western side revealed that the ditch had never been significantly deeper, that there was no trace of an inner revetment or palisade of any kind, and that the occasional stones which protruded through the grassy covering of the bank and which were also to be found scattered near the western edge of the enclosed area had not fulfilled any structural function. The bank was made up of gravel and small boulders scooped out of the natural deposits on the river terrace, thereby forming the ditch. There was no trace of a second ditch outside the roughly heaped-up bank. A second section across the bank and ditch on the western side where they appeared to end helped to confirm their insubstantial nature. Finally, all suggestions of an early date for this feature were shattered by the discovery of a sherd of late seventeenth or early eighteenth century glazed stoneware towards the bottom of the bank. The top of the bank rises no more than two feet above normal ground level, and the ditch is never more than two feet deep. The ditch and bank are about eight and six feet wide respectively, although the ditch widens to about fifteen feet, for no apparent reason, in the north-eastern corner. The bank on the northern side hardly merits the name, since it merges almost inconspicuously into the surrounding level ground. In the south-eastern corner of the enclosure there is a break in the bank and a corresponding rise in the bottom of the ditch, this combination giving the (false) impression of a simple entrance way from the direction of the lower-lying village street.

Following this discovery, most of the area enclosed by the ditch was investigated. This measures some 60 by 35 feet. It was found that there was a general and sharply defined transition from the loose gravelly topsoil to a fine natural sand which in places, especially towards the ditch on the western side, merged into coarse orange gravel with an admixture of small boulders as shown on the plan (fig. 3). The topsoil contained little in the way of finds; such as there were could not be dated earlier than about 1800.

No features were found in the gravel apart from one isolated hole which could not be associated with any definite phase. In contrast, when the remark-

KIRKCONNEL 1968

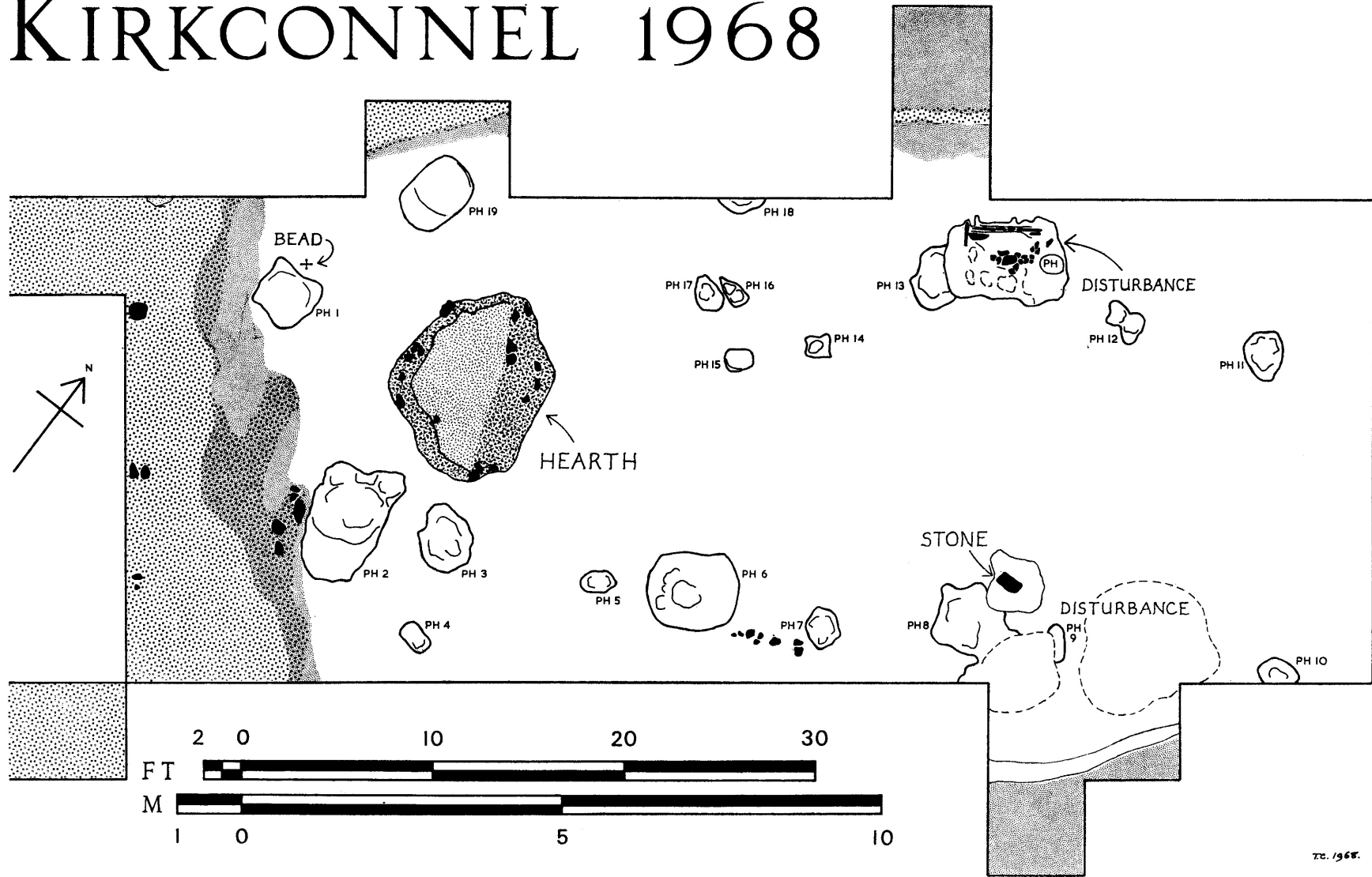


Fig 3.—Kirkconnel 1968: Plan of the excavations.

ably level surface of the sand had been identified and cleaned, numerous dark features, some regularly spaced and often marked with small heaps of stones, others meandering across the site, could be clearly seen. A large area of disturbance towards the eastern end of the site proved to be centred round a small standing stone set in a shallow pit (Pl. XII), and also to be partly caused by a long-dead tree whose roots survived in a fragmentary state. Also at this end of the main trench there was a rectangular arrangement of small sandstone blocks set on edge as if to form a shallow trough, which had also been paved with the same material. Several of these sandstone fragments were indurated with hæmatite, and a few chips of hæmatite were also found; it is suggested that this was a stand for marking sheep with the red-staining ruddle traditionally used in this part of the country. One small post-hole was associated with this feature (Pl. XIII). The standing stone may, but need not, have had some connection with this activity.¹³ The only find from these features were a few scraps of recent glass probably dating from the eighteenth or nineteenth century. However, at the other end of the site a small glass bead, whose significance is discussed later, was found immediately above the surface of the sand (p. 137).

Many of the irregular dark features in the natural sand were animal burrows. The site is not inhabited at the moment. The burrows were typical rabbit-holes; herein lies the major clue to the function of the ditch and bank as an enclosure where rabbits could be encouraged to breed. Rabbits were always a useful supplement to the diet, and pillow-mounds such as this are known to have been "cultivated" up to the nineteenth century.¹⁴ The ditch and bank will have served to deflect burrowing animals and to confine their activities within the limits set by the (relatively) impenetrable gravel bank. It may also be noted that the gravel-based hearth associated with the timber hall was accurately defined by the burrows which outlined but did not enter it.

The irregular humps immediately to the south of the pillow-mound were investigated in a series of three small trenches. They consisted of disturbed gravel containing far greater quantities of sand than does the clean natural gravel which it covered and which is found elsewhere on the site. The few finds from this disturbed layer were of a very mixed nature, ranging from a spindle-whorl of fine-grained micaceous sandstone to glass, sherds of stoneware and a silver button-mount. It seems that when the ditch and bank of the pillow-mound were constructed, the area they enclosed was stripped of its shallow overburden of gravel, the spoil (which included a quantity of sand) being dumped as close to the mound as possible and only partly levelled. One result of this was the removal, from above the natural sand, of any earlier archæological surface complete with whatever material may hitherto have survived undisturbed upon it.

¹³ It could also possibly have been a territorial boundary stone.

¹⁴ For a discussion of these see Linehan, C. D. "Deserted Sites and Rabbit-Warrens on Dartmoor, Devon," *Med. Arch.* X (1966), 113-44. Pillow-mounds are widespread, and occur for example in North Wales and Westmorland—except in the Borders they are not known in Scotland.

The Timber Hall (Pl. XV)

When it was realised that the bank and ditch were relatively recent, attention was turned to those dark features in the clean sand which were not due to animal activity. Most of these can be described as belonging to one of two groups, the first comprising those of large irregular size, usually capped with a spread or heap of stones standing slightly higher than the present surface of the sand, the other comprising the smaller and cleaner features. These gradually emerged as part of the same pattern, forming a long rectangle whose main east-west axis lay at an angle to that of the pillow-mound. Excavation showed them to be post settings of a sort. One peculiar feature of nearly all these post settings, whatever their size or shape, was the nature of their fill. The upper part of the fill was, as might be expected, fairly loose, dark and organic, containing in the case of the larger ones a number of sizeable stones; the lower part, which often appeared to merge with the natural sand but which was, in fact, quite distinct, was dirty pink in colour; it had set hard like plaster. Thus some of the fill was harder than the surrounding sand and made excavation more difficult, as it had been reduced to a very irregular surface by worm and root action.

The large post settings 1, 2, 3 and 19 (numbered as on the plan, fig. 3) were covered by small piles of stones which, according to the way in which they had fallen together, evidently formed part of some collapsed structure; they rested partly in and partly over the loose organic fill. It was thought at first that the stones showed signs of burning, but their cracked appearance was, in fact, due to the processes of weathering. These post settings were of extremely irregular shape both in outline and in profile, except PH 19 which was comparatively neat (Pl. XIV); PH's 1 and 3 were quite shallow at 8 in. and 5 in. respectively, while PH's 2 and 19 formed a reasonable pair at 1 ft. 2 in. and 1 ft. 0 in. in depth. The spread of stony material over PH's 6, 8 and 13 was much less substantial, but PH 6 in particular covered a wide area, its maximum diameter being some 5 feet. PH's 8 and 13 had been considerably disturbed by the standing stone and the sheep-marking stand, and it was not possible to trace their edges completely; they were however, very similar to PH 6 if a little deeper than its 9 inches. These measurements, of course, are of the post-holes as they now survive; one expects them to have been deeper before the creation of the bank and ditch. Although further east the ditch had cut more deeply into the sand and removed even more of the evidence, the lower parts of PH's 10, 11 and 12 had survived; they also seemed to be large rather than small, but there was no trace of any stony covering, which would have been entirely removed.

On the southern side the small neat PH's 5, 7 and 9 alternated with the large amorphous post-settings. PH 4 was set out of line towards the western end. In contrast, on the northern side the regularity was broken between PH's 13 and 18 by the four small post-holes 14-17 inclusive. These formed as it were an enclave. Although PH's 16 and 17 were set only a few inches apart there

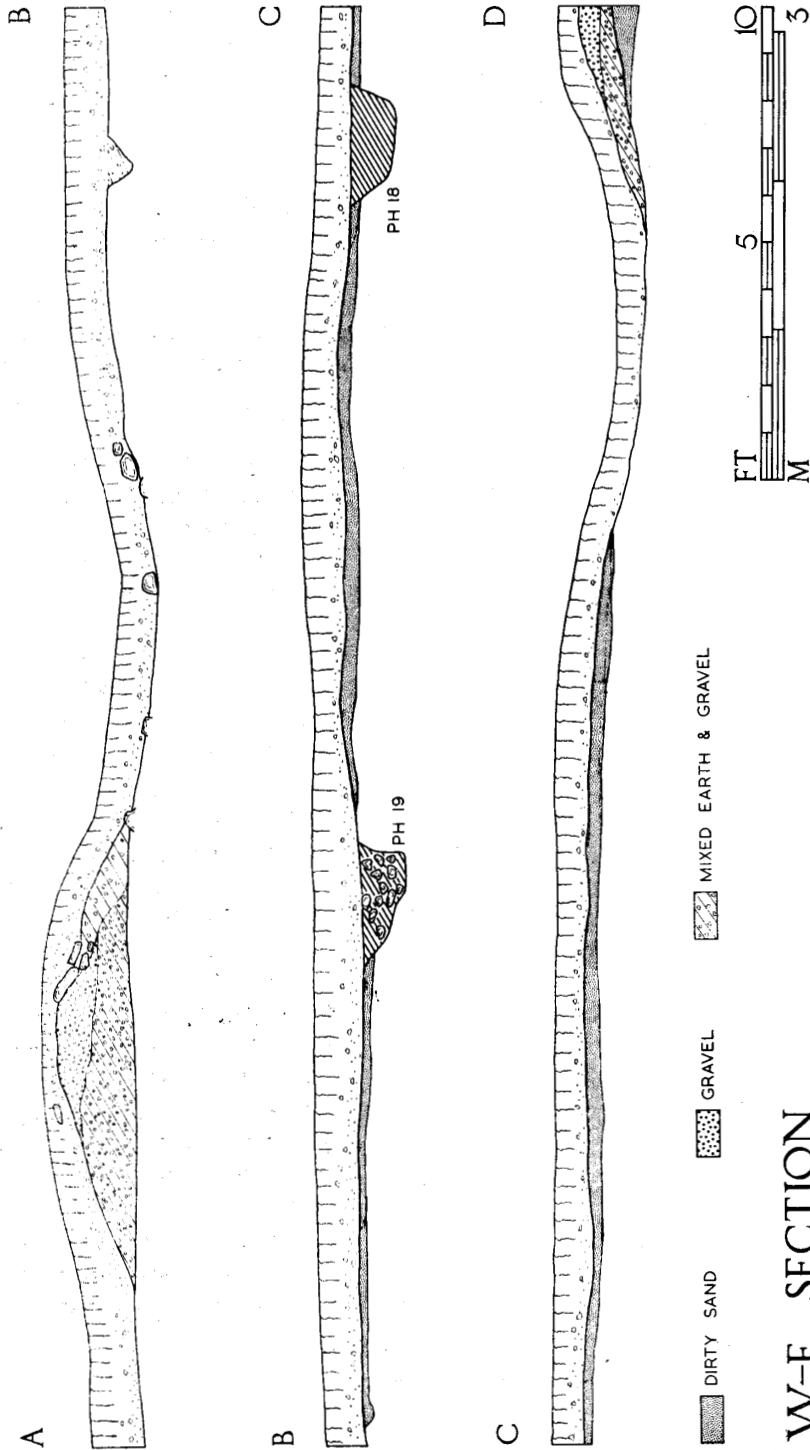


Fig. 4.—Kirkconnel 1968: Main section.

W-E SECTION

was no indication that one succeeded the other. PH 15 was the neatest post-hole found on the site apart from the isolated one associated with the sheep-marking trough; at 1 ft. 2 in. it was one of the deepest and differed in maintaining its full width to the bottom. There was no trace of the hard pink material in the fill. For these reasons it is possible that PH 15 is to be connected with a later phase.

These post-settings form part of a coherent plan. They represent a long narrow building with all but parallel sides whose main axis is nearly east-west; its average width is about 18 feet and its length more than 55 feet. The large and small post-settings, at least as seen on the south side, represent in one interpretation a series of massive timbers, perhaps whole tree-trunks standing firm by virtue of their very weight, alternating with more slender supports, perhaps split and more firmly embedded; PH 4 would fulfil a similar function. The western end of the building is shown by the position of PH 1 in relation to PH's 2 and 19 to be angular, although it cannot readily be called apsidal. There is no sign of an entrance on the south side, but the arrangement of small post-holes on the north is best interpreted as forming a screened entrance opening directly into the interior. Whether or not PH 15 belongs to a more recent period does not materially affect this interpretation. There seems to have been no major division of the building internally so far as the excavated portion (which is likely to be the greater part) is concerned; all traces of any lightweight partition there may have been are certain to have been removed along with the floor. The main timbers, particularly those at the corners, seem to have been lightly buttressed by dry-stone walling, or at least by a packing of stones, while between them the walls were probably made of turf, planking or wattle-work. Some trace of the wall footing, in the form of a definite row of stones which had escaped the eighteenth century levelling, survived between PH's 6 and 7. A final hint at the construction and appearance of the hall comes from beside PH's 8, 9 and 10, where a narrow band of discolouration in the natural sand may possibly, but by no means certainly, represent an eaves-drip.

A large gravel feature was located between the likely entrance and the west end and was identified as a hearth. This consisted of a thin spread of gravel resting on natural sand; its more or less circular outline had previously been defined by a circumnavigating rabbit, but was also marked by a channel whose surviving depth was in the order of 6 inches; this was packed with gravel and stones. No traces of normal hearth material were found, which again is most likely to be due to the later stripping of the site. There were no signs of burning.

Some charcoal was recovered from a post-setting (PH 19). This proved to be mainly hazel with possibly a little willow.¹⁵ Presumably this is derived from a hearth, and mixed with the fill, since these woods are unlikely to have been used structurally except in partitions or hurdling.

¹⁵ Our thanks to Dr Alan Hayes for this information.

THE FINDS

Miscellaneous small finds¹⁶

1. Glass eye bead, dark blue and white, slightly flattened, with tripartite circumference pattern of a dark blue dot in an irregular white oval framed with dark blue. There are beads similar to this from sixth century Trier cf. K. Böhner, *Die Fränkischen Altertümer des Trierer Landes* (Berlin 1958), taf. 8, 39 and 40, taf. 9, 13 and 24). These belong to Böhner's

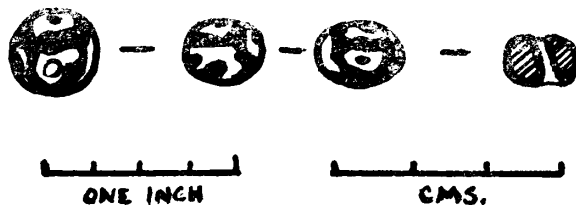


Fig. 5.—The Dark Age bead.

periods III, III-IV, II and III respectively; period III is A.D. 525-600, with periods II and IV immediately before and after. The type or ornament (blue dot on white in blue ring) is best paralleled by taf. 8, 40 (colours in reverse) and taf. 9, 22 (same motif but on a larger drum-shaped bead, which, however, is "grau mit rot-grünen Kreisäugen" and dated to period II). Taf. 9, 23 is white with bright blue (hellblau) "Punkt" and is of period III. Taf. 9, 11 is Prussian blue and white and is also of period II; this is a cylinder with a spiral band.

There are similar beads from the Merovingian gravefields of Alphen, Rhenen and Maastricht, dating from about the seventh century (cf *Kunst en Schoonheid uit de Vroege Middeleeuwen* (illustrated catalogue of exhibits, Rijksdienst v.h. Oudheidkundig Bodemonderzoek, Amersfoort, 1950), Pl. 66 and 93).

In Britain there are fairly good parallels from Ireland, for example from Lagore, Co. Meath (H. O'N. Hencken, "Lagore Crannog: an Irish Royal residence of the 7th-10th centuries A.D.," *P.R.I.A.* LIII (1950) 1-247, esp. 143 and fig. 67, 1408); this bead is dark blue and white with a spiral pattern. Another comes from Carraig Aille, Lough Gur (S.P. O Ríordáin, "Lough Gur excavations: Carraig Aille and the Spectacles," *P.R.I.A.* LII (1949) 39-111, esp. 90 and fig. 19, bead no. 279); this bead is white tinged with blue, with wavy lines in blue. It is said to be eighth century, but this date is probably too late.

These parallels suggest a date in the sixth or seventh century for the Kirkconnel bead (fig. 5 and Pl. XVI). Found beside PH 1.

¹⁶ Our special thanks to Professor Charles Thomas for providing us with parallels for the bead.

2. Roughly triangular flint flake with secondary working (fig. 6a).
3. Flat undecorated spindle-whorl of "fine grained micaceous sandstone" (fig. 6b). From the clearance dumps.
4. Iron object, probably a knife-blade; date uncertain but cf. L. Alcock, *Dinas Powys, An Iron Age, Dark Age and Early Mediæval Settlement in Glamorgan* (1963) fig. 21, 2. A date of 6th or 7th century A.D. would be possible for this object which is from the dirty gravel.
5. Iron object of uncertain purpose.
6. Iron nail; another was also found, with square section.

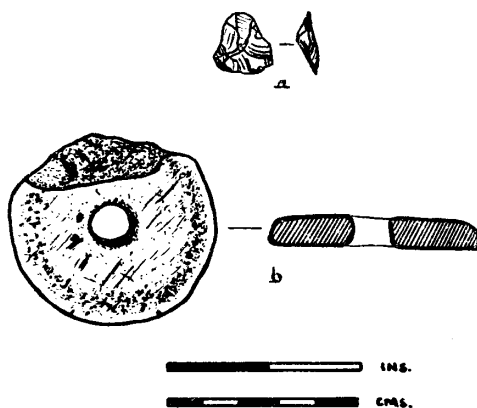


Fig. 6.—Small Finds: Miscellaneous.

7. Iron bar or clamp with one end slightly flattened and widened, the other bent to form a right angle; probably recent.
8. Silver cap probably for a button; dated (?) 1864 in the centre (not illustrated).

Pottery (not illustrated)

9. Small body sherd of coarse hand-made vessel, orange-buff fabric, fired to black on the inside and with a chocolate-brown core; friable, with medium grits; date uncertain but pre-12th/13th century, in keeping with a 6th-7th date.
10. Body sherd of salt-glazed stoneware jug, late 17th/18th century.
11. Body sherd of orange fabric with honey-coloured glaze on interior, probably 17th century.
12. Two body sherds of Delftware.
13. Glazed stone, possibly a glaze tester from a pottery kiln.

Glass

14. Miscellaneous fragments of seventeenth or early eighteenth century bottle glass, all dark green.
15. Three small fragments of clear glass, probably from a wineglass.

Bone

16. The only bone recovered was a fragmentary tooth.

Stratigraphical context of the finds

The majority of the finds were from the dirty earth and gravel of the pillow-mound. No. 10 came from the make-up of the bank of the pillow mound; no. 9 came from PH 9, and no. 1 from the surface of the sand near PH 1. Nos. 4 and 5 were found at a fairly low level in the dirty gravel, while no. 6 is from the topsoil. Apart from nos. 9 and 10 the pottery, along with the spindle-whorl (no. 3), the nails (no. 6) and the silver button cap (no. 8) came from the clearance dumps to the west of the site.

Geological Samples from Kirkconnel

A number of samples of the various types of stone found on the site were submitted to Mr Geoffrey Collins of the Institute of Geological Sciences, Edinburgh. He has kindly reported on them as follows:

1. Coarse purplish feldspathic sandstone with occasional pebbles of vein quartz up to 1 cm. in diameter. Probably Old Red Sandstone. (From the capping of a post-hole.)
2. Laminated sandstone, micaceous, indurated (hardened) with hæmatite. Probably Carboniferous. (From the stone setting of the sheep-marking stand.)
3. Fossiliferous limestone, Carboniferous. (From the make-up of the pillow-mound.)
4. Black carbonaceous shale, Carboniferous. (From the make-up of the pillow-mound.)
5. Spindle-whorl: fine-grained micaceous sandstone, probably Carboniferous.

"All the specimens could have come from the drift in the locality of your site, or could be found 'in situ' within about three miles."

ACKNOWLEDGMENTS

We would like to thank Sir Neil Johnson-Ferguson, Bart., for allowing us to carry out this excavation on his land, and the Society of Antiquaries of Scotland and the Dumfries and Galloway Natural History and Antiquarian Society for financing it. It was undertaken on the suggestion of Dr C. A. Raleigh Radford and Professor E. L. G. Stones, and we are grateful to them for their encouragement. We are also grateful to the Eaglesfield Depot of the Dumfries Roads Division for lending equipment and huts. To Mr Arthur Macgregor we are grateful for site photography. To Mr Geoffrey Collins of the Institute of Geological Sciences and Dr Alan Hayes of the Department of Forestry and Natural Resources, Edinburgh University, we are grateful for their specialist reports on the petrology and charcoal, and to Professor A. C. Thomas, for his comments on the bead. Dr Grant Simpson of the Scottish Records Office was most helpful while we were investigating the literary sources for the village. The excavation could not have been carried out had it not been for the help of volunteers—only limitations of space prevent their individual mention, though among them perhaps special mention should be made of Miss Vivien Richmond and Mr Philip Duckworth for their help with transport. Finally, we would like to thank two members of the Society, Mr A. E. Truckell and Mr W. F. Cormack, for their unfailing help at all times with problems that arose.



Plate XII—Kirkconnel: Standing stone and associated disturbance.

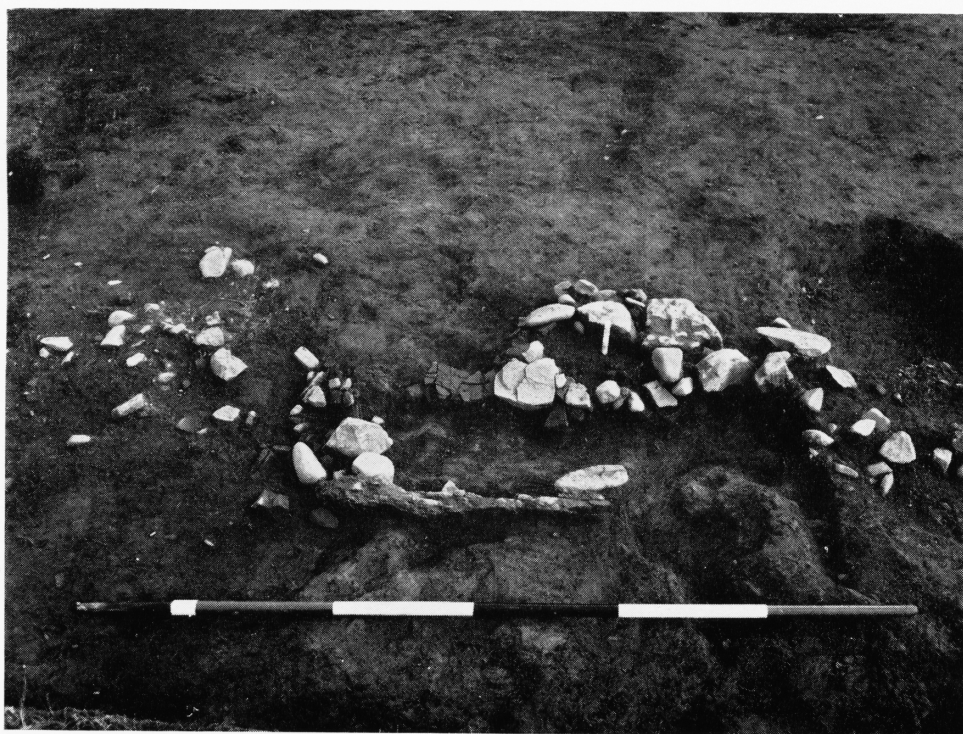


Plate XIII—Kirkconnel: Stand for sheep ruddle.

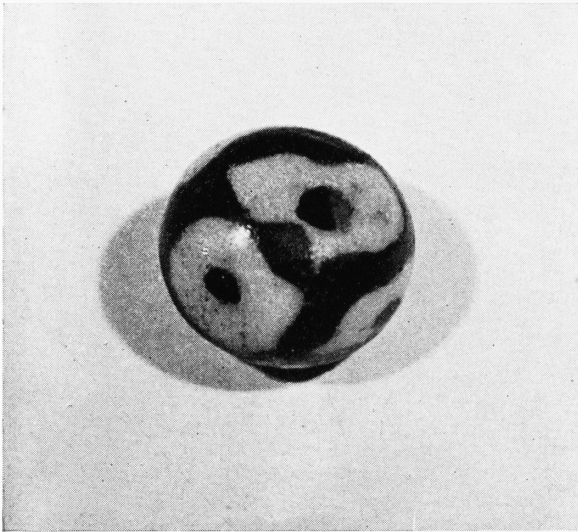
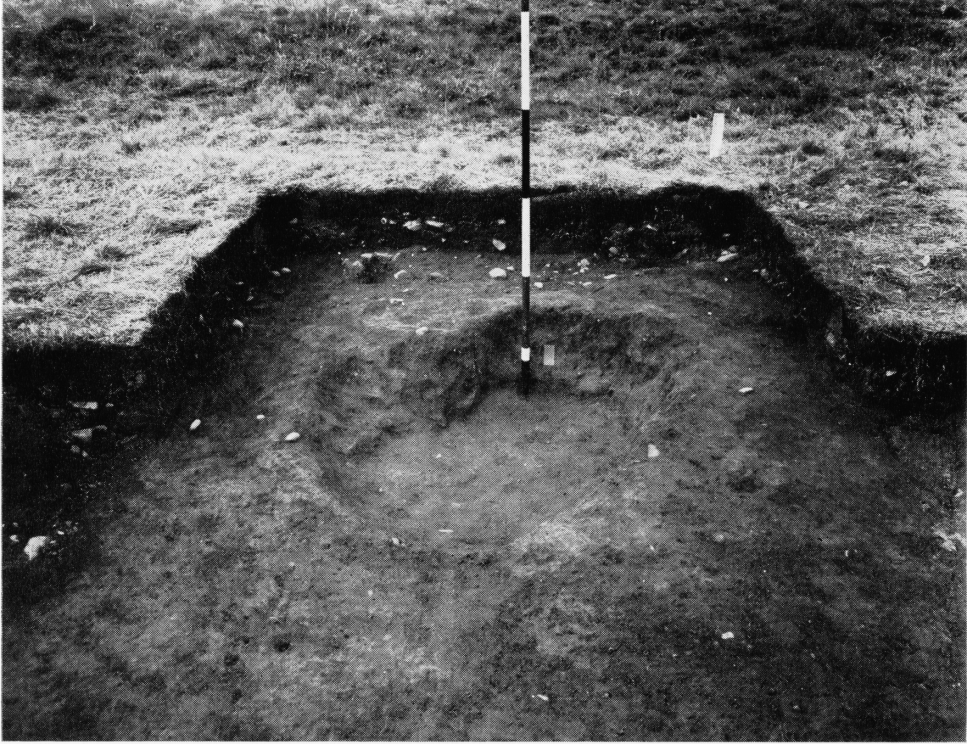


Plate XIV (above) — Kirkconnel:
Post-hole 19. Plate XVI (left)—
Kirkconnel: Glass bead, enlarged
approximately three times.



Plate XV—Kirkconnel: View of alignment of post-holes of hall from the north-east. The hearth can be seen in the top right hand corner of the excavated area. The bank of the pillow mound can be seen behind.

ST. NINIAN: IRISH EVIDENCE FURTHER EXAMINED¹

By P. A. WILSON

ST NINIAN AND ST FINNIAN

It is well known that St Ninian's real name had no final *n*, but it is not known when or how the corrupt form originated. The simplest hypothesis is that of Professor MacQueen, that *Ninianus* is a scribal error for *Niniavus*.² But it is not entirely free from difficulty. It seems to require, to render it plausible, that we accept the view that the church at Whithorn suffered total eclipse during the Viking period in the 10th and 11th centuries. These centuries were no doubt a time of widespread disturbance, and there is no record of the consecration of any bishop of the see during them. Nonetheless place names and sculptured stone monuments provide unmistakable evidence of the continuance of the Christian religion in the surrounding countryside. The name of St Kentigern was not forgotten by the people of Glasgow in these troubled times, and they cherished his memory in two hypocoristic forms, one of them pre-Viking in origin. In the case of St Ninian, however, no hypocoristic form survives, and we seem driven to conclude that the whole tradition of the name was lost in the vernacular, to be recovered later from literary sources. If there was no break in continuity, the substitution of *n* for *v* seems unaccountable; but equally, if there was such a break, written records, no less than oral traditions, are likely to have perished, and the puzzle is not resolved.

The hypothesis of scribal error could indeed be saved in another way. When we remember the interest taken by Alcuin of York in the saint's cult, coupled with the fact that the *Miracula Ninie Episcopi* survived only in Germany, whither it would supposedly have travelled *via* York, we may think that the corruption of the name is most readily accounted for on the supposition that Ailred, in whose *Vita* the name is first found in its corrupt form, used materials preserved at York, or elsewhere in England, where there was no vernacular tradition to protect the transmission of proper names against the errors of ignorant copyists.

This is certainly one possibility. But an alternative hypothesis presents itself which does not oblige us to postulate a total breach of vernacular tradition in South-West Scotland. We may recall Bede's words that "many other saints," besides the founder, were buried at Whithorn.³ This must be taken to mean that legends of other saints were preserved there, in oral tradition if not in documentary records, at any rate down to Bede's time. And such legends, and the identity of the saints to whom they belonged, could well become confused, especially if we allow for the replacement of British monks by

¹ Some of the Irish evidence I have discussed in an earlier paper, *D. & G. Trans.*, XLI (1964), 156 ff; but that should now be read in the light of the comments on it of Mr Rynne, XLII (1965), 99 ff, Professor Thomas, XLIII (1966), 84 ff, and Mr Boyle, *Innes Review*, XIX (1968), 57 ff.

² *St. Nynla* (1961), 70. In *Innes Review*, XIX (1968), 173 ff, Mr Boyle propounds a novel linguistic theory which must be left to the linguists to discuss.

³ *Ecl. Hist.*, III, 4.

English, and later perhaps of English by Gaelic-speaking Scots. A particularly likely confusion would be between the Briton, St *Ninia*, and the Irishman, St *Finnian*, who, though not likely to have been buried there, was almost certainly trained there, and has left evidence of his evangelistic labours in a number of place names in the neighbourhood. May it not be that St Ninian owes his



Map showing some places named in the text. Dundonald is situated some 7 miles S.-E. of Kilwinning.

intrusive final *n*, not to the suggested scribal error, but to a simple confusion with another ecclesiastic revered in the same locality?

I must confess that this idea, when it first occurred to me, before having studied what the Bollandists have to say about St Ninian, struck me as decidedly far-fetched. But from the Bollandists we learn that a manuscript belonging to the Carthusians of Cologne, now lost, gave the saint's name as *Finianus*, not *Ninianus*.⁴ For this among other reasons, including the sub-

⁴ *Acta Sanctorum*, September, V, 321, 322.

stitution of **episcopi Scottici** for **Britannici**, the editors deemed it of inferior authority to Capgrave; they had no copy of Ailred available. The error in the name they did their best to account for, but in a way that can hardly be said to carry conviction. The date given to the saint in this life, **XVI Idus Octobris**, is clearly meant to be that of St Ninian, September 16, not that of St Finnian, September 10. It included the miracle of the staff which grew into a tree (Ailred, ch. 10). That is all we can say of it. The Bollandists had seen another life like it from the **Monasterium Rubeae Vallis**. This, too, seems to be lost.

Very surprisingly, having regard to his fame, no life of St Finnian of Moville has survived in Ireland, either in Irish or in Latin. But John of Tynemouth, in the course of his travels (thought to have been confined to England and Wales), found a life of the servant of God, Finanus, bishop and confessor, which he copied, no doubt after abridgement, into his **Sanctilogium Angliae**. The saint's background here is Irish (though Moville is not mentioned), and the ancestry attributed to him, though inaccurate (at least as punctuated by Horstman), can be made to agree with that preserved in Irish sources. He was of the **Dál Fiatach**, the ancient ruling race of Ulidia, then confined to the east of Co. Down, while his mother was of the **Dál nAraide**, then inhabiting the west of that county. He was trained in Britain at the see of bishop Nennio, called **Magnum Monasterium**, and he founded the church of Kilwinning in Ayrshire, which is so called after the Welsh (*sic*) form of his name, **Winninus**. He is also said to be buried at Kilwinning, though according to Irish sources he was buried at Moville. Apart from the Welsh name and the burial at Kilwinning, the life could belong to quite an early stage in the development of Irish hagiography.⁵ The saint's death is given in the Annals of Ulster at 579.

One episode in this life has a long literary history. It relates to the amatory adventures of the daughter of a British king at a time when the saint was still Nennio's pupil. The tale reappears in the life of St Fridian of Lucca, and in a collection of Irish hymns put together in the 11th century, while it also seems to survive, though in a much toned-down version, in the **Miracula**, ch. 6, and in Ailred, ch. 5.⁶ We are therefore fully justified in taking a rather closer look at John of Tynemouth's text.

He has a miracle relating to the proud and haughty king **Tuatalus**, who is unrepentant and meets with an untimely end, and another relating to his

⁵ For the life see Carl Horstman, *Nova Legenda Anglie* (1901), I, 444 ff. It is also printed in *Archæological . . . Collections relating to . . . Ayr and Wigtown*, I (1878), 122 ff. Horstman dates the collection to the middle of the 14th century, *ibid.*, xi, liii. It was the compiler's custom to abridge, but not to amend, *ibid.*, xxxii, lii; it is therefore likely that the phrase **Wallico nomine** which occurs twice in his text was in his exemplar. It is a surprise to find such a phrase in a Kilwinning document; for the monastery was not re-founded until the middle of the 12th century by Hugh de Morville, d. 1162. However, we find that in Glasgow, as late as the reign of Malcolm IV (1153-65), the Cumbrians were recognised as a distinct ethnic group, under the name **Walenses** (not **Cumbrenses** as in king David's reign), alongside French, English, Scots, and **Gaualesens**; see G.W.S. Barrow, *Acts of Malcolm IV* (1960), 272, charter No. 258, no date.

⁶ *Leabhar Imuinn*, ed. J. H. Todd (1855), 108 ff. For the **Miracula**, see *D. & G. Trans.*, XXXVIII (1961), 21 ff; for Ailred, *Lives of St. Ninian and St. Kentigern*, ed. and trans. A. P. Forbes, *Historians of Scotland*, V (1874).

successor, king **Diarmecius**, who repents of his sin and obtains forgiveness. It is not impossible that Ailred's proud and haughty king **Tuduvallus** is based on the same original, though Ailred's king repents and is cured of his afflictions like John of Tynemouth's Diarmecius, whom Ailred does not mention. The names **Tuatalus** and **Tuduvallus** are etymologically identical.⁷

This miracle of Ailred's is also found in the **Miracula**, and it might be argued that the vernacular spellings in that source, **Ninia** and **Nyniau**, are enough to guarantee that the tale really belongs to the British and not the Irish saint. I do not think this argument can be pressed. Hagiographical writing provides many examples of plagiarism where there is no reason to ascribe it to mistaken identification of two different people. All we need suppose is that there were at Candida Casa, when the English took over, legends relating to both Ninian and Finnian, between whom such interchange would be not unlikely. It should be noted that in the **Miracula** the spellings of the king's name are not those of Ailred; in the text we have, line 104, **Tuduael**, which looks British, and in the chapter heading **Thuuahel**, which looks decidedly Irish.

Before we leave St Finnian it is worth taking a look at the miracle of St Ninian's staff in Ailred's, ch. 10. This is the only chapter in Ailred of which the substance, though hardly the wording, seems to have been lifted bodily from an older and certainly Celtic source. The miracle does not appear in the **Miracula**. In it, one of the saint's pupils, who is in disgrace with his master, seeing the rods being made ready, runs away, carrying the saint's staff with him, steals a leaky curragh from the Isle of Whithorn, and, aided by the miraculous properties of the staff and a favourable easterly breeze, is carried to the shores of Ireland, where he plants the staff in the ground and it sprouts branches and leaves, flowers and fruit.

In the Irish legends St Finnian is represented as having been exceedingly diligent in his studies, but not in all other respects a model pupil. We may therefore think that this particular tale, though it does not appear in John of Tynemouth, may nonetheless derive from a source of Irish authorship relating to this saint; who, it may be noted, seems in early youth to have been remarkably adept at evading chastisement by his masters.⁸ In later life he was famed in Irish legend for his zeal in collecting and copying manuscripts.

The last point of interest in John of Tynemouth that we need note at this stage is that the saint is represented as performing miracles at a place in Ireland called **Cella Montis**.⁹ **Cella Montis** is the modern Killeevy in Co. Armagh.

KILLEVY AND ST DARERCA

The southern portion of Co. Armagh, and the adjoining north-east projection of Co. Louth form a broken stretch of country, a westward

⁷ See *Triodd Ynys Prydein*, ed. R. Bromwich (1961), 515, 516. John of Tynemouth's kings must surely be Tuathal Maelgarbh, king of Tara, d. 544, and his successor, Diarmait mac Cerbhaill.

⁸ Horstman, I, 444, lines 25 ff.

⁹ *Ibid.*, 446, lines 5 ff.

extension of the granites of the Mourne Mountains in Co. Down, from which it is separated by the deep cleft of the Newry River and Carlingford Lough. Its most famous church in early times was at Killevy, at the spot marked Ballintemple on modern maps, beneath the eastern slopes of Slieve Gullion, whence it takes its name, **Cell Sléibe Cuillin**. The site is marked today by a ruined stone church, standing in a large graveyard. The first building on the site was a settlement of nuns established by St Darerca towards the end of the 5th century. Her death is recorded in the Annals of Ulster in 517, under that name, and again in 519, where a later scholiast had added that she was also called Moninne.¹⁰ But the present ruin is a building of far later date,

The parish of Killevy was once more extensive than it is today, and contained within its bounds another early church site, Kilnasaggart, notable for a free-standing inscribed stone dating from about 700, the earliest approximately dateable Christian monument in Ireland. It marks the "place of St Peter," and the inscription, though in Irish not Latin, is curiously reminiscent of that on St Peter's Stone at Whithorn, probably roughly contemporary with it in date.¹¹

This territory, and much of the adjacent county of Louth, belonged in early times to a people called the Conaille. Unlike their neighbours to the north and south they were of Ulidian origin, and akin to the Dál nAraide, whose lands were in Co. Down on the other side of Carlingford Lough. Though records of them and their rulers are found in the annals down to the Anglo-Norman invasion, they appear to have been subject to fairly steady pressure from their northern and southern neighbours, and Killevy eventually passed to the former, the Airthir or easterners, Orior in English, and this part of Co. Armagh became the barony of Upper Orior.¹²

It is to the lives of the foundress of Killevy, and sundry texts connected therewith, that we now turn. The two principal texts are the **Vita S. Darercae seu Moninnae Abbatissae**, from the Codex Salmanticensis, now in the Royal Library in Brussels, and the **Vita Sanctae Monennae** in the Cottonian MS., Cleopatra A ii, in the British Museum.

The **Codex Salmanticensis** is a manuscript collection of Latin lives of Irish saints thought to have been written in the 14th century.¹³ The lives have undergone less editorial revision than in the other great Irish collections, and the life of St Darerca, I should say, as little as any. For that reason I have not found it necessary to follow Esposito in distinguishing the primitive life

¹⁰ The cognomen is unexplained. All we can say is that it was not in use when the obit of 517 was first written down, whenever that was, nor when the references to the saint in the life of St. Enda of Aran were first written down (see note 32), nor when the saint's own life was first put together in the early 7th century.

¹¹ For a fine illustration of the Kilnasaggart stone, see Kathleen Hughes, **Church in Early Irish Society** (1966), plate 2.

¹² The account of the Conaille in **Féilsgribhinn eóin mhic néill**, Studies presented to Eóin MacNeill (1940), 445 ff. may be consulted; but it is no longer customary to refer to the Conaille or the Dál nAraide as "Pictish."

¹³ It has recently been reprinted by Professor W. W. Heist in **Acta Sanctorum Hiberniae** (Brussels, 1965), 83 ff. For an account of the MS. see the editor's intro., x ff.

by its own symbol X; in what follows **Cod. Sal.** stands indifferently for the primitive life and the Salamanca text, except where the context otherwise requires.

This life is one of the most interesting texts in Irish hagiography, as well as one of the most straightforward. Appended to it is a list of the saint's successors down to the fourth abbess (third successor). From this it has been inferred with much probability that it was compiled in the first quarter of the 7th century. It contains a reference to St Patrick, whose blessing the saint received a few years after her birth, which, if the dating of the life is correct, is something like half a century older than Tirechán or Muirchú, and is even older by a few years than the reference in Cummian's letter to Ségene, abbot of Iona, dated c. 633.

Other matters of Irish interest I must pass over. But there are points about her family background (hopelessly confused in the Cottonian text) of which we should take note. Her father was of the Conaille; her mother's parentage is not stated, but she was born in the plain of Coba, in the heart of the lands of the Dál nAraide. She died in her monastery at Killevy. This is clear from the context, though it is not stated in so many words, an omission which, as we shall see, was to come in useful to the Cottonian compiler. Present at the time of her death was king Eugenius, who then ruled over the combined territories of the Dál nAraide and the Conaille, and who was himself of the Conaille on his mother's side. She bequeathed to the monastery her garments of skin and her wooden comb, her hoe and her digging stick, which were preserved as honoured relics there for many years to come, chs. 19 and 30; and she died on the day before the Nones of July, July 6.

Mention must be made of three miracles. The first, ch. 13, I call the miracle of the *escra*, Irish name for a silver drinking vessel which was found one day washed up on the shores of Carlingford Lough. The second I call the miracle of the ridge-pole, that is to say the longest and stoutest member used in the construction of a timber church, such as abbess Derlasre, the third successor, was engaged in building in honour of the foundress at the time when this wonderful event occurred, ch. 33. A timber of the required size having been found by the workmen, but in a very awkward place, its movement defeated their engineering skill. However, in answer to the abbess's prayers, agencies which the pious sisters regarded as miraculous caused it to be transported during the night to a spot whence its removal presented no further difficulties.¹⁴ From the Cottonian text, ch. 3.12, we learn that after the church had been again re-built, the ridge-pole of its predecessor was treasured among the relics of the monastery.¹⁵

The third miracle in ch. 34 is of no interest in itself; but its setting is of

¹⁴ Killevy is sheltered from the prevailing westerlies, to which one might otherwise ascribe this wonderful event, by the mass of Slieve Gullion. It is the more surprising to read in the Annals of the Four Masters that in the great storm of 3 December, 1146, which caused destruction of woods throughout Ireland, a number of people were killed at Killevy.

¹⁵ My guess is that the ruin we see today is the fourth church to have stood on the site.

interest, for it occurred on the occasion of a visit to the monastery, during abbesse Derlasre's time, of bishop **Fi(n)barrus**, whose surname was **Finnianus**. These spellings with an **f** could hardly be of early 7th century date. The annals spell the name with a **v**, and so does the Cottonian scribe, which shows incidentally that he was not copying the Salamanca text as we now have it.

A new recension of the early life seems to have been compiled in the first half of the 9th century, and to it were appended the names, with years in office, of another eleven successors. Only in four early Irish houses have such lists, corresponding to the **fasti** of Continental churches, survived: Killeevy, Bangor, Trim and Armagh. It is a safe inference that any house from which such a list has come down to us maintained an active scriptorium during all or most of the period covered by the list. There is no reason to doubt that the scriptorium at Killeevy was active, probably uninterruptedly, from the end of the 5th to the beginning of the 9th century.¹⁶ I am inclined to attribute to this recension a miracle, not in **Salamanca**, about the territorial jurisdiction of a king of the **Orientalis**, the purpose of which would be to establish friendly relations between the monastery and the kings of Orior, whose influence was extending southwards at the expense of the kings of the Conaille. Of the 8th century successors, one was the sister and the next the daughter of a king of the Conaille who died in 752. By the 11th century the picture has entirely changed, and a successor who died in 1077 was actually the wife of a king of Orior.¹⁷

The 9th century recension is known to us only inferentially from the list of successors just referred to which appears in the Cottonian manuscript, a text as complicated and confusing as that in **Cod. Sal.** is straightforward. Throughout the text in **Cod. Sal.** the saint is referred to by the name **Darerca**, except in the title, and in the opening sentence where we are told she bore the cognomen **Monynne**. No attempt is made to explain the cognomen, and it looks like an editorial insertion. In **Cleopatra**, on the other hand, she is throughout referred to as **Monenna**, and the name **Darerca** nowhere appears. Yet, that this MS. is based on the text embodied in **Cod. Sal.**, or one very close to it, cannot be doubted. Virtually all the episodes in the life of St **Darerca** are reproduced in it, though frequently in a garbled form, and by no means always in the same sequence. The Cottonian manuscript attributes to the saint miracles, often of the most extravagant character, but still with an Irish setting, which are absent from **Cod. Sal.** In these we have, no doubt, echoes of later political changes, as in the case mentioned which we ascribed, tentatively, to the 9th century. Others are probably even later and would seem to reflect the territorial ambitions of the Hiberno-Norse bishops of Dublin. Of these I say no more for the moment.

Lastly, this life credits the saint with the foundation of churches in the English midlands and in Scotland.

¹⁶ See Kathleen Hughes in *Studies in the Early British Church*, ed. N. K. Chadwick (1958), 252, note 4.

¹⁷ K. Hughes, *Church in Early Irish Society* (1966), 246.

The foundations in Scotland include **Chilnecase** in **Galueia**, and a number of well-known places such as Dumbarton, Stirling, Edinburgh, and by implication St Andrews. In addition to these there are some other places not so well known. Because the saint's name is here given as **Monenna**, it has been thought by some that the list may have been taken from a lost life of St Ninian in which that name would have appeared in the hypocoristic form, **Mo-ninn**. Others, of whom the present author is one, have tended to dismiss this hypothesis. Recently, however, Mr Boyle has recalled our attention to it, and it is clear from what he says that it deserves the most careful examination.¹⁸ Where can this list have come from? And how did it find its way in to the Cottonian MS.? In the remaining section of this paper some of the evidence bearing on these questions is passed in review. But only what seemed the more obvious lines of inquiry have been explored, and the result, disappointingly inconclusive, must be regarded more as an interim report than a final summing-up.

Apart from the name **Chilnecase**, which could easily stand for **Candida Casa**, there is nothing to link the list with anything we are told about St Ninian by Bede or Ailred. Neither names any churches founded by him other than **Candida Casa** itself. But there is a passage in the **Miracula**, lines 72-74, that merits attention. Here we are told, in connexion with the conversion of the Picts, that he founded many monasteries with new churches, which now (**nunc**) flourish with a multitude of monks in which the servants of Christ are assiduous in the observance of the monastic rules. Now Mrs MacQueen has rightly warned us that the **Miracula** is a religious poem, in which it was no part of the author's purpose to convey factual information. It is not like a saint's official **Vita** from which we may hope to extract factual information by the use of suitable detective techniques. At the same time the passage quoted is so circumstantial that it leaves one with the impression that when the poem was written, the monks of **Candida Casa** knew which these monasteries were, and could have named them had they chosen.

We may remind ourselves at this point that **Moville**, no less than **Killevy**, must have had an active scriptorium in the time of St Finnian, and that manuscripts may have passed to and fro between these houses by way of loan or gift during his time. The bishop must surely have told the sisters about his master, and perhaps others of whom he had heard tell during his stay in Britain. Whether he left with them written records we cannot know; but we must be careful not to jump to the conclusion that our list of Scottish foundations could have reached **Killevy** in this way and at this time; the spellings, as we shall see, rule that out. But the name **Mo-ninn** may well have done so, and the name **Candida Casa**, too, for reasons which will appear.

It was a well-established practice in Irish churches for the names of the departed to be entered in the service books and recited in the Mass. The

¹⁸ *Innes Review*, XVIII (1967), 147 ff.

persons thus honoured were not restricted to the founder or foundress and his or her successors. We know that the name of St Martin was included in the appropriate prayer at Iona, and from the life of St Columba of Terryglass we learn that the name of St Ciarán of Clonmacnoise preceded the name of their own master in their own book of the Mass.¹⁹ It is therefore permissible to hazard the guess, and it is of course only a guess, that the name Mo-ninn was thus honoured at Killevy, coming perhaps immediately before or immediately after that of the foundress. If this were so, it is I suggest in this context that we should look for the origin of the cognomen Moninna, otherwise unexplained. The pious sisters may have been well aware that the Mo-nenn and the Moninna, both of whom they revered, were two wholly distinct persons. But it is easy to see what an opportunity for misinterpretation would be thus afforded to antiquarians and hagiographers in a later age and in distant scriptoria.

THE COTTONIAN LIFE OF ST MONENNA

The Cottonian MS. was printed in 1910 by Mario Esposito.²⁰ Except for two folios, with which we are not concerned, it is all in one hand, which he says is English and of the first half of the 12th century. Mr Neil Ker kindly informs me that in his opinion the hand cannot be much earlier or much later than the middle of that century. Esposito thought that until the suppression of the monasteries the MS. was at Burton-on-Trent, and Mr Ker seems to agree.²¹ No text like it was known in Ireland, nor is there any life like it in the MS. collections from which Plummer printed his *Vitae* (Latin) or *Bethada* (Irish), or in the saints' lives in the Book of Lismore.²² There is a life by Geoffrey, abbot of Burton-on-Trent, which has not been printed; it survives in two MSS., Royal 15 B iv in the British Museum, and Mostyn 260, now in the possession of Mr Francis Wormald. This life is based on the Cottonian life, but with significant modifications. There is also an Anglo-Norman metrical life, based on Geoffrey, and this has been printed for the Anglo-Norman Text Society.²³ Lastly, John of Tynemouth has an abridgement of Geoffrey in his collection.²⁴

Burton-on-Trent was an Anglo-Saxon foundation dating from 1004. In later times the church there was under the invocation of St. Mary the Virgin and St. Modwenna, the latter reputedly a lady of Irish origin who had founded an earlier church on a nearby island in the Trent, where she was believed to have died and been buried, and whence her remains were translated to Burton on the foundation of the monastery there.²⁵

¹⁹ See Heist, *op. cit.*, 232, 233.

²⁰ *Proc. Royal Irish Acad.*, XXVIII (1910), C, 202 ff. See also the same author's "Sources of Conchubranus' Life" in *Eng. Hist. Rev.*, XXXV (1920), 71 ff, and "Notes on Latin Learning . . . V" in *Hermathena*, L (1937), 139 ff.

²¹ Neil Ker, *Medieval Libraries*, 2 ed. (1964), 150.

²² Charles Plummer, *Vitae Sanctorum Hiberniae*, 2 vols. (1910), and *Bethada Náem nErenn*, 2 vols. (1922), and Whitley Stokes, *Lives of the Saints from the Book of Lismore* (1890).

²³ *St. Modwenna*, ed. A. T. Baker and Alexander Bell (1947).

²⁴ Horstman, *op. cit.*, II, 198 ff.

²⁵ Horstman, II, 212, and the Anglo-Norman poem, lines 7729 ff.

In 1114 Geoffrey, prior of Winchester, became abbot of Burton, and in due course set about collecting materials for a life of the Irish patroness. For this purpose he sent emissaries to a certain bishop in Ireland, and thus there was brought to him a codex which he describes as a veritable treasure house and mine of information. He does not name the bishop; but we can be tolerably certain that it would have been Samuel, bishop of Dublin, d. 1121, or his successor, Gregory. Both these prelates were consecrated at Canterbury, and made profession of canonical obedience to that see. There is no real reason to doubt that the Cottonian MS. is either this codex, or a transcript of it made at Burton for the abbot's use.

The editors of the Anglo-Norman life, on whom I rely for some of these details, say nothing of his sending for information to Scotland, and the use of the term codex in the singular rather suggests that the disparate elements of which the life is composed had already been welded into a single text before the emissaries left Ireland. Nevertheless, as we shall see, the possibility of a mission to Scotland cannot be excluded.

The Cottonian life is divided into three books, and each book into separate chapters. In the notation here adopted, ch. 3.1 means chapter 1 of book 3. There is little correspondence between the division into books and the divisions in the narrative. In chs. 1.1 to 1.14 the setting is Irish, and there is nothing that calls for immediate comment. In chs. 1.14 and 1.15 the compiler brings the saint to England, travelling *via* Wales, and she founds churches in Warwickshire near the Forest of Arden. With these foundations we are in no way concerned. From chs. 2.1 to 3.2 the scene is again mainly Irish, and in ch. 3.7 we have the miracle of the *escra*. The syntax is confused, but the sense is plain, and the passage is important as showing that the compiler was ignorant of Irish, and seemingly also unfamiliar with Hiberno-Saxon script. The vessel, he says, was found in the place called *caput litoris*, which the *Scoti* call *Stanniribae*. The first of these names is a Latinization of *Cenn trachta*, an old name for Newry. The second is *Glenn rige*, an old name of the Newry River, or more properly the valley through which it flows into Carlingford Lough. The river name survived down to a later age as Owen Glenree.²⁶ *Stanniribae* is just an ignorant guess, perhaps influenced by the *ora stagni* which figures in the account of the same miracle in *Cod. Sal.*, ch. 13. That the scribe was not Irish receives further confirmation from a peculiarity of his spelling, *ch* for *c* in proper names; as for example in *Chellecleue* for Killevy, and in *Chilnecase* already noted. A glance through the index of names in Plummer or Heist will show how extremely rare this use of *ch* for *c* is in Irish hagiographical Latin; in Norman England it is common.

²⁶ Edmund Hogan, *Onomasticon Goldelicum* (1910), 445. We may note that John of Tynemouth attributes a miracle to St. Finnian in a place unnamed, which cannot from the description be other than Carlingford Lough; Horstman, I, 446, lines 9-15. Some writers have attributed to him the foundation of a monastery at Dromin, in the southern part of Co. Louth where the lands of the Conaille march with those of Brega, a sub-kingdom of Meath; see Reeves in *Arch. Coll. Ayr and Wigtown*, I (1878), 125. There is no proof that the founder of the latter house was not another of the same name, but the association of the Moville saint with two successive kings of the southern Uí Néill, see note 7 above, would tell in favour of the identification.

In chs. 2.8 and 2.9 the scene is again Warwickshire, and then Ireland once more down to the end of ch. 3.2. In ch. 3.3 the saint returns to England, this time travelling *via* Scotland, where she visits St. Andrews, and having again crossed the sea into **Britannia**, finds a church on top of the Castle Rock in Edinburgh. On reaching England she finds a church at **Andresie**, an island in the Trent, and, after an intervening visit to Rome, another in the same neighbourhood. The chapter concludes with her return to Ireland, and nothing further of interest is recorded until we reach 3.7, where there is a slightly awkward break, which we consider in a moment.

We are not, as I said, concerned with the Warwickshire foundations, which probably derive from a source, such as Polesworth or Nuneaton, with which the monks of Burton happened to be familiar. Nonetheless it is from the confused account of these foundations, chs. 1.14 to 1.16, that we can extract the very interesting information that the Burton saint came to England under the auspices of Aldfrith, king of Northumbria 685-704, who lived in Ireland, was Irish-speaking, and probably had an Irish mother. Here too we learn that she spent some time in the famous Northumbrian monastery of **Streoneshalh**, no doubt before founding a house of her own in a strange land. It would be during her stay in Northumbria that she acquired her devotion to the cult of St. Andrew. Aldfrith is believed to have lived for a time in Iona, and was on terms of friendship with Adamnan, who twice visited his court after he succeeded his brother in Northumbria. Taking all this together I think we may conclude that our compiler was reporting a genuine Burtonian tradition when he said that the lady whom they honoured as their foundress came from Ireland to the banks of the Trent *via* Scotland. This is not to say that she founded churches there which is highly unlikely. But it means that our compiler would be on the look-out for any hint that she did.

The main list of Scottish foundations appears in ch. 3.8. It is followed by the death scene, in Scotland, ch. 3.9. Ch. 3.10 reports a miracle that occurred after her death; it need not detain us. In 3.11 we are told of the miraculous translation of her body from Scotland to England. In 3.12 and 3.13 we have the miracle of the ridge-pole and the visit of bishop Finbar, here sur-named **Vinnianus**, and in 3.14 the colophon.

I will deal with the colophon at once. In it we are invited to remember in our prayers the most miserable servant of the Lord, Conchubranus. On this account the life has generally been referred to by his name. This practice I now think should be abandoned. I have tried to show that neither the compiler nor the scribe (if they were not the same) could have been other than English or Norman. The name Conchubranus, though perhaps corrupt in spelling, is unmistakably Irish, a corruption possibly of Conchobar or Conchobrach, and there is no reason why such should not have been the name of the scribe of the 9th century or some later recension, which the compiler of the Cottonian text copied as he found it into his own work, perhaps to give it a spurious authenticity.

Our author's carelessness about spelling extends also to nomenclature and syntax; though never to the name of his subject, who is always **Monenna**. Thus Ireland is sometimes **Scotia**, sometimes **Hibernia**, Scotland sometimes **Scotia**, sometimes **Albania**. **Britannia** is sometimes Britain, sometimes only that portion of it lying to the south of the Firth of Forth. But though there is that awkward break in the narrative that we come to in a moment, we must also allow that he has gone to some pains to reconcile discrepancies between his sources. Thus in ch. 3.1 he gives an account of the saint's austerities which agrees closely with **Cod. Sal.**, ch. 19. But he makes an addition of his own; he says she was wont to perform nightly vigils upon the bare rock of mountain tops, the significance of which will later appear. The awkward break in the narrative that I refer to comes between chs. 3.7 and 3.8.

In 3.7, in Ireland, she says to one of her maidens: "Go across the sea into Britannia, and if God is willing I shall come too. Go to the place called **Andresie**, in which I am anxious to maintain the strictest discipline." And when they (**sic**) came to the sea where the passage is made from **Scotia** (**sc.** Ireland) to Britannia, they found a ship ready prepared in port which carried them across the sea to the monastery which was their destination. And after stopping there some time the aforesaid maiden (**sc.** **Monenna**) left on a visit to Rome.

Ch. 3.8 is headed: Concerning St. Monenna's last pilgrimage to Rome travelling by way of **Soctia** (**sic**). The chapter proceeds as follows: When St. Monenna was 110 years old she set forth on her last journey to Rome which she had already visited twice before. On the way she came into **Albania**, that is to say **Scotia**, where she erected churches in Christ's name, of which these are the names. I shall deal with the names later. The question to be answered first is: Whence did this journey start? At the end of 3.7 she was seemingly in Rome, and **Albania** cannot be said to be on the way from Rome to Rome. Alternatively she had returned to the banks of the Trent, and **Albania** is not on the way from there to Rome either. Therefore she was in Ireland, and there is a discontinuity in the narrative which our author failed to tidy up in the course of revision.

To account for the discontinuity I put forward the following hypothesis. It was the author's original intention, after the second visit to Rome, to bring the saint back to **Andresie**, and then recount her death and burial there in accordance with the Burtonian tradition with which he was already familiar. Then, while still in Ireland, he came across the list of Scottish foundations. He was of course highly delighted with the discovery. He left ch. 3.7 hanging so to speak in the air, and proceeded at once to set out the Scottish list in ch. 3.8.

Unfortunately, from his point of view, his new source included, not only the list of foundations, but also the statement (**ut affirmant**), decidedly awkward for him, that the saint concerned died and was buried in Scotland. However, as we shall see, his inventive imagination was equal to the occasion, and with

the aid of a most elaborate miracle, all faces were saved, or very nearly. We may note in passing that the miracle was altogether too "Celtic" for the taste of Geoffrey and the author of the Anglo-Norman poem, who toned it down.

We now turn to the list. These, he says, are the names: One is **Chilnecase** in **Galuuie** (abl.). Another is on the top of the mountain which is called **Dun-deueneil**, because as we have said before, it was her practice to offer her prayers to God upon the naked rock. A third was on another mountain, **Dunbreten**; a fourth in the castle which is called **Strivelin**. The fifth is **Dunedene**, which in the English tongue is called **Edeneburg** (no mention of the castle rock this time). The sixth was the mountain **Dunpeleder**, and from thence she crossed the sea into **Albania** to **St. Andreas**.²⁷

I interrupt at this point to call attention to the fact that no church is recorded as being founded at this place. Is this a slip of the pen? or is it because there was thought to be no suitable "mountain" there? If so someone has tripped up, for two miles south of the cathedral city of later times there was a "royal mountain," extending from Easter Balrymonth to Wester Balrymonth, whence it may be inferred that there was once a Pictish royal residence there.²⁸

To resume: After this she went to **Aleethe** (**Aleecht** in 3.11), where today there is a most splendid church, which **Lonfortin** built, and a very holy well, and she remained there for some time, for she took great delight in that place. Such is my rendering of the Latin, but **Lonfortin**, as we shall see, was the name of a place, not a person.

That concludes the list. I leave it to others to speculate on the reasons underlying this saint's interest in hill-forts and royal residences, and confine my comments to the two place names, **Aleethe** and **Lonfortin**. Mr Boyle identifies the former with the modern Alyth,²⁹ and I think the identification must be accepted, notwithstanding the fact, as I am assured by kind friends, that the modern name is stressed on the first syllable like bailiff. Skene, who says nothing of **Aleethe**, identifies **Lonfortin** with Longforgan in the Carse of Gowrie.³⁰ This cannot be. The earlier form was **Forgrund**; the prefix is not recorded before the 14th century, when it was adopted, it would seem, to distinguish this **Forgrund** from another in the same locality.³¹

In 3.9 we have the account of the saint's death, which took place at **Lonfortin** in **Scotia**, on the third of the Nones of July, July 5, the day assigned

²⁷ I have one or two comments on Mr Boyle's comments on this list, **Innes Review**, XVIII (1967), 149. **Dun-deueneil** is no doubt the Ayrshire Dundonald, where today are the ruins of a medieval castle. The original name of **Dunbreten** was **Alclut** (see **Armes Prydein o Llyr Taliesin**, ed. Sir Ifor Williams (1955), line 151), of which Mr Boyle's forms are Irish renderings. I wonder if the Cottonian MS. is the earliest evidence for the new name; it must be earlier than the **Dunbrethan . . . id est mons Britonum** of Jocelyn of Furness' life of St. Patrick (see John Colgan, **Trias Thaumaturga** (Louvain, 1647), 67), which is generally assigned to the 1180's, and is probably later than his life of St. Kentigern because his description of the rock reads like an eye-witness account; see Colgan, 66, where the mention of **ruinosa vestigia** is particularly interesting. **Dunpeleder** must be the Traprain Law in East Lothian, if only because it is from thence that the saint crosses the sea into Albania. For a discussion of **Dunpeleder** and related forms, see Kenneth Jackson in **Studies in the Early British Church**, 286 ff.

²⁸ See the discussion in W. J. Watson, **Celtic Place-names of Scotland** (1926), 396 ff.

²⁹ **Innes Review**, XVIII (1967), 150.

³⁰ W. F. Skene, **Celtic Scotland**, 2 ed., II (1887), 37.

³¹ See Watson, *op. cit.*, 379 ff.

by John of Tynemouth to St. Modwenna of Burton-on-Trent. And then in 3.11 we come to her translation. After the death of St. Monenna, our author tells us, a great multitude came together from **Hibernia**, **Scotia** and **Anglia** to the place where she died, and a great contention arose among them as to who should have possession of her body; and archbishop **Columpcille** came to make peace between them. After much fasting and prayer, the holy bishop **Columcille** said: "Choose from among you eight men, four from **Scotia**, two from **Hibernia**, and two from **Anglia**. Let those from **Scotia** take hold of the bier on the eastern side, and the other four on the western side, and let God apportion it between you." And so it came about that the **Scotigene** (nom.) left with, as they discovered, the entire bier, with the body upon it, and they carried it with all speed to the church which is called **Aleecht**. The **Hibernenses** also and the **Anglici** left and came the same day with the entire bier and the body entire upon it past the castle which is called **Strivelin** to the church which is called **Ecléés**. And afterwards they carried the body from place to place until they came to the place before-mentioned (ch. 3.3) which she had chosen for herself in her own lifetime. Her garments of skin and other utensils were taken to Ireland to Killevy.

I think the reader will agree that this tale, which I have of course abbreviated, shows considerable ingenuity. Tales of the duplication of saints' bodies are by no means unknown to hagiography. One such is told of the Irish St. Patrick, another of the Welsh St. Teilo. But the one to which this bears the closest resemblance is that told of St. Faenchea of Killanny, Co. Louth, who was incidentally a friend of St. Darerca, in the life of St. Enda of Aran.³² Our compiler may well have come across it when he was in Dublin.

The tale is also topographically circumstantial. Alyth and Stirling are not of course due east and west of one another; they are more nearly north-east and south-west. But then our compiler would not have had a modern map at his elbow. It is the topographical details that raise in one's mind the question whether he went to Scotland to check up on the data he had found in Ireland. I should add that in my opinion he never went to Killevy, though some earlier critics have thought he did because he says (ch. 3.1) he had seen the relics there with his own eyes; but this could have come from an earlier version. In connection with a possible visit to Scotland two points must be considered. He knew that in his day there was a most splendid church at **Aleethe** or **Lonfortin**, though we cannot be sure which. The second is more difficult, though perhaps more telling.

In chapter 3.9 he names a number of notables who were present at the time of the saint's death. Most of them I cannot identify. One of them is

³² For the miracle of the duplication see Plummer, *Vitae*, II. 64, 65; for St. Faenchea's association with St. Darerca, *ibid.*, 63, 64. Note that this passage has another version, much abbreviated, of the miracle of the *escra*; also that only when St. Darerca is first mentioned is her other name given, afterwards she is Darerca *tout court*; so this version of it, like that in *Cod. Sal.*, must have been first written down before the cognomen had been invented. For St. Patrick see L. Bieler, *St. Patrick and the Coming of Christianity* (1967), 94; for St. Teilo, K. Hughes in *Studies in the Early British Church*, 194.

called **Rotheri**, and I find it hard to believe that this is other than a phonetic rendering of the **Rodercus** or **Rederech** whom we know from the lives of St. Columba and St. Kentigern; and nowhere outside Scotland (and the adjacent English county of Cumberland, where it survives as a personal name to this day) would he be likely to have heard it on the lips of an informant.

This inevitably leads to the question: could the list of church foundations have been found in Scotland? I hardly think so. The first name in the list, **Chilnecase**, is strongly against it. Well before the middle of the century the diocese had already been re-founded under its old name of Candida Casa. But **Chilnecase** is exactly the name for it that an Irishman would have coined. The word **casa**, so far as I can discover, is unknown to Irish hagiographical latinity, and would therefore have struck the Irish as odd. The form **cell na-**, which we have already come across in Kilnasaggart, is common in Ireland; Hogan has three and a half columns of names so formed.³³ In Scotland I have been unable to find a single certain example. On the other hand, all the other names of places that can be identified are in perfectly good 12th century Scottish spellings. Could our compiler have corrected these other Scottish spellings on the spot, supposing he went there? Hardly I think, for two reasons: first, he did not correct **Chilnecase**; secondly, he certainly did not bother to correct his Irish spellings when in Ireland, so why should he bother to correct the Scottish ones? I suppose it is possible that when in Ireland he never came in contact with Irish speakers, all his informants being Norsemen, or clerics imported from England by a community known to have been Anglophile in sentiment; but he surely could have made contact with Irish speakers, had he wished.

We are thus driven to the paradoxical conclusion that our author found in Ireland a list of Scottish foundations in which one name was fairly clearly Irish, and could, spelling apart, be of almost any date, while the remainder are 12th century Scottish. **Albania** could of course be much older; but it need not be, for the distinction between the lands north and south of the Forth was a fact of Scottish political geography down to the time of king David's accession to the whole kingdom in 1124. Could it be that there were others in Ireland who happened, by chance, to be interested about this time in assembling information about a Scottish saint?

CLONCURRY

Cloncurry is the name of two places, both in the north of Co. Kildare, and distant not more than twelve miles from one another as the crow flies. I shall designate them Cloncurry A and Cloncurry B. Cloncurry A is 25 miles out of Dublin on the main road to the west. Cloncurry B is three miles north-east of Rathangan. On the Ordnance map of Monastic Ireland Cloncurry A is allotted only the symbol indicative of a house of Carmelite friars, and not that of an

³³ Hogan, *op. cit.*, 206 ff.

early Celtic establishment, i.e. before 1111. Cloncurry B is not shown on the map at all. In fact both were early Celtic houses, though no doubt of small importance. The name is an Anglicization of **Cluain Conair**.³⁴

The Annals of Ulster in 783 record an event that took place at **Cluain-Conaire-Maelduib**, and Hennessy and Hogan agree in identifying this with Cloncurry B. **Maelduib** of **Cluain Conairi** is the name of a saint commemorated in the Martyrology of Tallaght on December 18.³⁵ At the year 781 the same annals record the death of Colgu, a priest and anchorite, and abbot of **Cluain-Conaire-Tommair**, and this all authorities seem to be agreed is Cloncurry A. It appears again in the same annals at the year 838. The name **Clúain Conaire**, without suffix, also appears in Tallaght on September 16, against the name **Monenn**. This entry, as well as that from December 18, again without suffix, are both from the Book of Leinster, late 12th century.

The Martyrology of Oengus, of c. 800, was edited by Whitley Stokes from ten MSS.³⁶ At September 16 we have a saint whom the scholiast identifies as **Monenn** of **Clúain Conairi Toman**, in the north of **Húi Faeláin**. The place name is not in the martyrology itself, which is metrical. The personal name is variously spelt: **Moninn**, **Moenn**, **Moinenn**, **Moinend**, **Monenn**. The date of the scolia has not, I think, been determined, but Robin Flower implies that they were of the 12th century.³⁷

The Martyrology of Gorman, like Oengus, but unlike Tallaght, is metrical.³⁸ It is thought to have been composed between 1166 and 1174, and the author in his preface says his object was to include the many saints of Ireland whom Oengus had omitted. It, and the scholia that accompany it, survive only in a single MS. transcribed about 1630 by Michael O'Clery. There are some later scholia in what the editor took to be the hand of John Colgan. At September 16 we have **Moennend**, but altered from **Moinend**. The earlier scholiast says he was bishop of **Cluain Conaire** in the north of **Húi Faeláin**, that is our Cloncurry A. The later scholiast adds in the margin: **Mo-nenn .i. id est Ninnianus ep. Candidae casae**.

Watson thought that the forms given in Oengus for the saint of Cloncurry A were genitival, and that the saint's name in the nominative was **Moenu**.³⁹ I have not come across an Irishman of this name; but in the first of the Latin lives of St. Brendan of Clonfert we read of a certain British bishop, who came from Britain to Ireland with St. Brendan, and is called **Moneu** in one MS. and **Moeneiu** in another; while in the Irish life he is called **Maenu**. He is referred to also in the Book of Leinster as **Moenu** or **Moinenn**.⁴⁰ The compiler of the

³⁴ For the name see Hogan, 258.

³⁵ Martyrology of Tallaght, ed. R. I. Best and H. J. Lawlor (1931).

³⁶ *Féilre Oengusso Céil Dé*, ed. Whitley Stokes (1905).

³⁷ In *Church of Ireland, A.D. 432-1932*, ed. W. Bell and N. D. Emerson (1932), 72.

³⁸ Martyrology of Gorman, ed. Whitley Stokes (1895).

³⁹ Watson, *Celtic Place-names*, 294, 518.

⁴⁰ Plummer, *Vitae*, I, 143 note 14, 145 and note 4, 150 for note 15 to 149; also *Bethada*, II, 84. But while he is explicitly stated to be a Briton, it is from the Argyllshire island of Tiree (*Heth*) that St. Brendan brings him to Ireland; and this receives confirmation from the reference to *Insula Allech*, *Heist*, 330, which must be *Eilach an Naoimh* in the *Garvellach Islands*. The *Letha* (*Brittany*) of the Irish life is presumably a scribal error, see Plummer, *Vitae*, I, xxvii for note 5 to xxvi.

Annals of Ulster, in 572, records the death of **Moenu**, bishop of **Cluain-ferta-brenaind**. The form of the place name cannot be contemporary, because in 572 St. Brendan was still alive; his death is recorded in 577 and 583. There can be no guarantee, therefore, that the original entry consisted of anything beyond the bare statement: **Moenu quievit**; so the possibility remains that we have here a reference to the saint of Cloncurry A, as also the possibility, since the name seems to be otherwise unknown in Ireland, that one and the same person officiated as bishop under the rule of the abbot of Clonfert, and also presided over a house of his own elsewhere. And if the name is otherwise unknown in Ireland, one very like it, **Menw**, is attested from early Wales, and could have been the name of this bishop if he was indeed a Briton.⁴¹

I do not know the etymology of the element **Tomain**, etc., used to distinguish this Cloncurry from its homonym. Hogan reports the spelling **domain** in a Trinity College MS. It is tempting to see it as a hypocoristic form with **do-** or **da-**. Admittedly such forms are rare in Ireland, compared for example with Wales; but they exist. Hogan gives **Cell da-Chelloc** as an alternative to **Cell mo-Chelloc**, for Kilmallock, Co. Limerick.⁴² If such an etymology could be established in the case we are considering, it would mean that each of these foundations was distinguished from the other by the name of a saint associated with it, presumably the founder, as Clonfertmulloe was from **Cluain ferta brenaind**, now I think Clonfert **tout court**.

Ussher said there existed in Ireland a life of St. Ninian in which the saint was represented as leaving Scotland to settle in Ireland at a place called **Cluayn Coner**, where he died. The life has not survived. Ussher does not tell us which Cloncurry was intended. The indications point to Cloncurry A, because September 16 is the day of St. Ninian in Scottish calendars, and of the saint of Cloncurry A in the Irish. Now in Ussher's life, as Mr Boyle has most acutely observed, the saint is represented as building a wooden church at Cloncurry, the beams for which were brought to the site by very fierce stags, which can hardly be other than an echo of the ridge-pole miracle from Killevy.⁴³

No life has come down to us of the founder of either of the Cloncurry houses. It may be conjectured that neither had a scriptorium of its own, but depended on other houses for any service books required. Nevertheless a time may have come when the monks of Cloncurry A felt the need to supply this want, and, knowing nothing of their founder beyond his name, and perhaps that he was a bishop and reputedly of British origin, they looked for materials on which to base one. What they turned up in the course of their search was material relating to a saint connected with a place called **Wytterna** or **Candida Casa**, and the inclusion of a miracle about a wooden church suggests that where they found it was Killevy. But I must add that it is highly unlikely that Ussher's life included the list of foundations which is our particular interest in this

⁴¹ For **Menw**, see *Trioedd Ynys Prydein*, ed. R. Bromwich (1961), 457, 458.

⁴² Hogan, *op. cit.*, 187.

⁴³ Innes Review, XIX (1968), 62.

inquiry; for the Bollandists had a copy of it, and thought very poorly of it because of its manifest absurdities and inconsistencies. Had it contained a reference to any place in Scotland other than Candida Casa, surely they would have told us.

This still leaves two questions unanswered: First, why did the monks of Cloncurry not know how to inflect a proper name which had become naturalised in their speech, even if it was not originally native to it? Secondly, what was the list of foundations doing in Dublin, where we have supposed our author to have found it? The answer to the second question will perhaps supply the answer to the first; for it will suggest that the moving spirits behind the whole enterprise were not Irish-speaking monks from Cloncurry, but others who were not native speakers at all.

Territorial expansion was a major preoccupation of the see of Dublin at this time, and we may imagine there would be a keen interest in collecting material to buttress the claims of the see to churches in the surrounding countryside and the lands with which they were endowed. So perhaps it was ambitious Dublin clerics, rather than any monks at Cloncurry itself, who were so eager to have a life of the founder, and who instigated the necessary inquiries.

The compiler of the Cottonian life of St. Monenna has included in it a very curious tale. In chs. 1.10 and 1.11 we find a lengthy account of how St. **Chevin** (the patron saint of Glendalough) was tempted by the Devil in the form of a blackamore boy whom the saintly Monenna cast out from him at a place called **Surde**, the modern Swords about eight miles north of Dublin. The implication of the tale is clear, though unstated, that St. Kevin and his successors were not worthy to have possession of so delectable a spot as Glendalough, which by virtue of this miracle ought rightly to be in the gift of St. Monenna. Glendalough's riposte to this tale and the claims associated with it will be found in ch. xxix of the life of St. Kevin printed by Plummer.

The reference to Swords is easily accounted for. The church there was reputedly founded by St. Columba of Iona in the 6th century for one of his own followers; but the place was already regarded as being within the secular jurisdiction of the kings of Dublin by 1035, just about the time when the Norse bishopric was established,⁴⁴ and no doubt so continued. Since Glendalough had ecclesiastical aspirations north of the Liffey as well as south, Swords would be an appropriate spot in which to locate the formal submission to Dublin of her most formidable rival.

But what is this tale doing embedded in a text purporting to relate to the saint of Killeavy? Had the saint of Cloncurry been cast for the principal rôle in it, all could be explained on the hypothesis already indicated. Possibly it was in the Cloncurry life; some of the absurdities with which it abounds seem to have an affinity with those of Ussher's life as reported by the Bollandists. The Bollandists saw nothing of it; but that is readily explained

44 K. Hughes, *Church in Early Irish Society* (1966), 240.

if they had made up their minds on other grounds that the whole farrago of St. Ninian leaving Scotland for Ireland was a tissue of late and worthless forgeries.

Alternatively we are at liberty to suppose that when our compiler arrived in Dublin, he found the Dublin clerics still engaged in the preliminary processes of collecting, and concocting, material for their projected life of the Cloncurry saint, and that this material was still in bits and scraps, waiting to be worked up into final form, so that our compiler was able to go through it, picking and choosing what took his fancy, and weaving it into a more or less connected narrative, so far as he was able. This may seem a remarkable coincidence; but is it so really? In the mid 12th century, throughout the Anglo-Norman ecclesiastical world, to which Dublin still belonged, and particularly on the Celtic fringes of that world, Anglo-Norman clerks were busy reading the lives of the saintly but shadowy figures of an earlier age, and re-writing them in a form acceptable to the taste of the high Middle Ages; where no suitable texts were available to them for re-editing, they had recourse to plagiarism, or to their inventive imaginations, or both. What is unique about the case we are considering is not that it should have happened, but rather that for once we are given a glimpse, albeit opaque, of the operation while still in progress; and this we owe to the fact that our codex, though written in what Geoffrey stigmatized as a *lingua barbara*, was preserved for posterity instead of being discarded as so much rubbish, like the life, *barbarico stilo* and *sermone rustico*, which Ailred used for his life of St. Ninian.

But while we may thus explain some of the peculiarities of the texts we have been examining, we are still without a clue to the source of our Scottish list, before that arrived in Dublin. One wonders if it may have been sent to Ireland by a cleric in the entourage of St. Malachy on his way through south-west Scotland to and from Rome in 1139, or 1140.⁴⁵ If so, it would presumably have been sent in the first instance to Armagh; but by this time the influence of Armagh had become paramount at Killeavy, as might indeed be inferred independently from the Cottonian text, ch. 1.2. That such material should have travelled by some such route may seem remarkable, but perhaps no more remarkable than that a life of St. Finnian of Moville, clearly of Irish provenance, should, as seems likely, have turned up in Kilwinning about the same date. Could that too have come by way of Killeavy and Armagh?

If the Scottish list is, as I have suggested on other grounds, a late addition to the Dublin dossier, its absence from Ussher's life of the Cloncurry saint need occasion no surprise; for when, not long after our time, the diocesan boundaries were more or less fixed (the dispute between Dublin and Glendalough dragged on for centuries), and Cloncurry A. like Cloncurry B. was allotted to Kildare, no one in Dublin any longer had any motive in preserving

⁴⁵ For St. Malachy's journeys through south-west Scotland see the dialogue between Canon Wilson and Sir H. Maxwell in *Scot. Hist. Rev.*, XVIII (1921), 70 ff., 228 ff., 319. This supersedes the discussion in H. I. Lawlor, *St. Bernard of Clairvaux's Life of St. Malachy of Armagh* (1920). They are also discussed in the preface to R. C. Reid's *Galloway Charters*.

material (once believed (wrongly) to relate to the otherwise obscure saint who was reputed to have founded this otherwise obscure house.

Conclusions

From the evidence here passed in review we can I fear draw only the most tentative conclusions. I would summarize them as follows: (1) St. Finnian had associations with Whithorn closer than we might infer from the circumstance, itself hypothetical, that he was trained there. (2) There are grounds for suspecting that legends relating to him and legends relating to St. Ninian may have got confused. (3) Some information as to the identity of monasteries founded in the Pictish area by a saint connected with Whithorn seems to have been preserved there down to the time when the *Miracula* was composed. (4) St. Finnian was in touch with the monastery of Killevey and was held in honour there. Since Merville and Killevey both had active scriptoria in his time, gifts or loans of MSS. between them cannot be excluded. (5) Some Irish house seems to have been in possession of traditions and records relating to a saint, known as Mo-ninn or Mo-nenn, who founded churches in Scotland and who died at one of them, and that one was not Candida Casa. As to the identity of the saint, it was not St. Darerca of Killevey or St. Modwenna of Burton-on-Trent. (6) The place or places where these traditions were preserved cannot be determined; but the indications point to Killevey as being the source of some of them. (7) The provenance of the list of Scottish foundations must remain an unsettled question.

BIRKHILL

By W. A. J. PREVOST

The lands of Polmoodie lie at the head of Moffatdale and extend from Birkhill down to their western marches near the farmhouse of Polmoodie, a distance of three miles. Their known history begins in 1318 when Robert the Bruce granted a charter of the whole lands of "Polbuthy" to James, Lord of Douglas.¹ Sir William Fraser records that after a lapse of over 200 years and between 1520 and 1521 a 19-year lease of these lands was granted to James Johnstone,² and finally, in 1543, Johnstone of that Ilk was granted a charter under the great seal by Mary, Queen of Scots, of the whole lands of Johnstone, with tower and fortalice, and of other lands which included Polmoodie, the whole to be called the Barony of Johnstone.³

Polmoodie remained a possession of the Johnstones of Annandale for over 400 years till 1961 when its 4665 acres were sold by the Annandale Estates to the Forestry Commission for afforestation, but fortunately 2190 acres lying to the north of the main Moffat-Selkirk road, much of which is said to be unplatable land, was acquired from the Commission in 1962 by the National Trust for Scotland.⁴ The Trust now owns an area of land which contains the waterfall and beauty spot known as the Grey Mare's Tail, Loch Skene, Dob's Lin and other interesting places. Nearby is the cottage at Birkhill, now privately owned, where lived the shepherd who was responsible for a hirsle of Black-faced Sheep which once belonged to the farmer of Polmoodie.

Birkhill is situated at an altitude of 1080 feet on the watershed between the two streams of Moffat and Yarrow. The hills on both banks of each of these rivers are mountainous and the most natural road between the two counties of Dumfries and Selkirk passes over the summit by Birkhill Cottage. The main highway carries traffic along that road today and there is ample evidence to show that a way for travellers existed since time immemorial on the north side of Moffat Water Head which is not quite so precipitous. It was along this way that Blind Harry in his half-fabulous poem, *Schir William Wallace*, describes how Edward I pursued his flight into England after his defeat by Wallace in a battle which may have been fought at Roslin in 1303.⁵ There is reason to doubt whether the battle was ever fought at all but there is no reason to doubt the poet's knowledge of the Scottish countryside when, writing between 1450 and 1460, he names Birkhill as a halting place used by the king.⁶

"Thus socht he south with gret sorou and cair;
At the Byrkhill a litill tary maid;
Syne through the land but rest our Sulway raid." ⁷

1 Sir William Fraser, *The Annandale Family Book of the Johnstones*, i. p. xvi.

2 *Ibid.* i. p. xxx.

3 *Ibid.* i. p. lv.

4 *Scotsman*, 27 Feb., 1962.

5 Henry the Minstrel, "Schir William Wallace," *Scottish Text Society* (1889), xxxv. xxxvi, xli.

6 George Neilson, "Annals of the Solway," *Glasgow Archael. Trans.*, iii, No. VII, 291.

7 Henry the Minstrel, *op. cit.*, lines 760-762.



Fig. 1—Part of Ainslie's map of Selkirkshire, surveyed in 1772.
By kind permission of the Trustees of the National Library of Scotland

It is difficult to trace out a route which Edward I may have followed to the Solway crossing, but to reach Birkhill from the north he may well have used the "King's Road" which was the route taken by James V in his memorable expedition in 1529 when Johnie Armstrang of Gilnockie, Adam Scott of Tushielaw and many other marauders were seized and executed.⁸ This road made its way by Drumelzier glen into Megget and down to St. Mary's Loch and it seems reasonable to assume that it linked up with the ancient way by Birkhill. Another way, "The Thief Road," said to have been used by Moss-troopers re-

⁸ *History of Peebleshire*, Edd. James Walter Buchan and Rev. Henry Paton, iii, 530, 540.

turning north from forays south of the Border, passes near the Birkhill Path, running by Winterhope, Cramalt, over Dollar Law to Lyne, Linton and the Cauldstane Slap in the Pentland Hills.⁹ The Cauldstane Slap was the aim of droves proceeding south from Crieff and the Falkirk Trysts, and though a main drove road from Peebles to St. Mary's Loch carried on to Tushielaw,¹⁰ there is no reason why some honest drovers should not have passed by Birkhill. There, behind the cottage, a track slants up the face of the hill to reach the crest where it ends abruptly, a characteristic of drove roads in the hill districts of the border country. At any rate the way by Birkhill was well-known to travellers, partly because the watershed between the two valleys marked the boundary of the Sheriffdom of Ettrick Forest,¹¹ and partly because of the way's steep and hazardous passage down into Moffatdale, known as the "Birkhill Path." It is so marked on Timothy Pont's survey of 1608 and on maps which were made in the following century. Today the line of this trackway can be seen from the main highway, but more about this anon.

Seventeenth century factual references to Moffatdale are rare and little or nothing is known about the people who lived there until 1684 when Mr Johnstone, minister of Moffat, compiled a list of persons in his parish which included the names of all persons, male or female, over the age of 12 years, grouped according to their residences.¹² Ten males and eight females are shown as then living on Polmoodie, a great difference to the census roll of 1951 which lists only four males and two females over the school leaving age of 15. Hill farming is not prospering and country people, to quote the words of an old Moffat shepherd, "are not leaving but are being driven off the land."

The parishoners roll of 1684 was dated 24 September when the persecution of the Covenanters was at its peak. The trials and tribulations of these unfortunates provided the theme for two of James Hogg's well-known romances, **The Brownie of Bodsbeck**, and his poem "Mess John." In both these works Hogg has made use of his knowledge of the district when he associated his characters and certain incidents with place-names, thus creating an impression of authenticity which has deceived many of his readers. The story of "Rob Dobbs," a young shepherd at Birkhill in 1823, is pure imagination and typical of the Ettrick Shepherd's writings, but his references in "Mess John" to Dob's Linn, added in a footnote to give a touch of realism, contain a particle of truth. The story of the two Covenanters, Hab Dob and Davie Din, is well known and, in short, Hogg describes how the two men took refuge in a "cottage" on the edge of the linn where they wrestled with the Devil and finally overcame him by throwing him into the burn some 150 feet below. The rectangular outline of the walls of the so-called cottage is still visible on a grassy shelf as described.

⁹ Pennicuk's *History of Tweeddale* (1815), 211.

¹⁰ A. R. B. Haldane, *The Drove Roads of Scotland*, See map.

¹¹ John Adair's map, "The Sheriffdom of Ettrick Forest," 1680.

¹² *Register of the Privy Council*, 3rd series, ix, 399.

¹³ Professor Louis Simpson in James Hogg, *A Critical Study* (1962), comments that Hogg added footnotes to his stories to give them a touch of realism.

a most inconvenient place for a dwelling, but it is suggested that the cottage was really only a hut or shelter built for the use of shepherds in lambing time and during the summer grazings.

There is no shadow of truth in Hogg's story in **The Brownie of Bodsbeck** of the summary execution by Claverhouse of five Covenanters near Birkhill, a story repeated as true in Moffat guide books and even in a Ordnance Gazetteer of Scotland.¹⁴ The story goes that Claverhouse was making "a sweeping and exterminating circuit" with his troops when they came upon a Covenanter who was shot by a dragoon while attempting to escape. "He is buried on a place called the Watch Knowe . . . beside a cairn where he had often sat keeping watch for the approach of enemies . . ." A cairn was there in Hogg's day for an older version of the name "Watch Knowe" is "The Watchman's Cairn," so marked on a plan of Polmoodie, dated 1767,¹⁵ but by whom and for why the cairn was erected remains a mystery. "Four more men," writes Hogg, "were surprised and taken prisoners on a height called Ker-Cleuch Ridge, who were brought to Clavers and shortly examined in the Erne Cleuch, a little above the old steading of Hopertoudy." He ordered them all to be shot and their bodies "were afterwards carried away by the fugitives, and some country people, and decently interred in Ettrick churchyard. Their graves are all in a row a few paces from the south-west corner of the present church."¹⁶ These men were also buried, according to another writer, near the path to the Grey Mare's Tail, where "a dry stone dyke encircles the spot."¹⁷

C. S. Terry in **John Graham of Claverhouse** takes the **Gazetteer** to task for having taken the word of James Hogg for the accuracy of the story though doubtless its editor had relied on a Moffat guide book for his information. Such a blatant outrage was never chronicled by Wodrow who could hardly have missed such a good story when compiling his *History*¹⁸ had the story been true. Claverhouse himself never refers to this encounter in his correspondence. One would imagine that the slaughter of four rebels would have called for special mention, and in particular a report on those of his own men who, as Hogg relates, were ambushed and killed shortly before the Birkhill affray.¹⁹ Moreover there are no martyrs' graves in Ettrick Kirkyard. "If there had been," writes Mr Fordyce, minister of Ettrick,²⁰ "the knowledge of them would have been handed down, and indeed care would have been taken to mark them, and with an inscription."

There is, however, one romance connected with Moffatdale which is founded partly on fact. It is told by Sir Walter Scott in his description of Sir Robert Redgauntlet in **Wandering Willie's Tale**. "Men thought that he

¹⁴ Ordnance Gazetteer of Scotland (1901). Ed. Francis H. Groome who states, under "Birkhill," that four men "were shot near the inn's door."

¹⁵ Survey of the "farm of Moffat Water," 1767, by William Tennoch. Scottish Record Office, RHP 10149.

¹⁶ Rev. Thomas Thomson, *The Works of the Ettrick Shepherd* (1869), i, 27, 28, 29.

¹⁷ Robert Crosbie, *Poems and Songs* (1833), 132.

¹⁸ Rev. Robert Wodrow, *The History of the Sufferings . . .* (1721, 1722).

¹⁹ Rev. Thomson, *op. cit.*, i, 6.

²⁰ Letter 12 March, 1960, from Rev. F. A. Fordyce, Ettrick Manse.

had a direct compact with Satan, that he was proof against steel, and that bullets hopped off his buff-coat like hailstones from a hearth, that he had a mear that would turn a hare on the side of Carrifra-gawns,²¹ and muckle to the same purpose" This might well have referred to Claverhouse, about whom a similar story has been told, whose bullet proof coat, with the marks of bullets on it, is now on display for all to see in the crypt of Glamis Castle.

Between the years 1747 and 1755 William Roy was preparing the first detailed map of Scotland and at some time during that period he field-mapped Dumfriesshire. Though his triangulation was sketchy and inaccurate, the finished map is full of information and shows the names of hills and farms, woods and fences, arable land and the main roads as they then existed. His road up Moffatdale has now almost completely disappeared, particularly that section between Bodesbeck and the Tail Burn where it criss-crossed the Moffat Water nine times, but after the Tail Burn the track up the Birkhill Path can still be seen. The cottage at Birkhill does not appear to be marked but it was there in 1741, for Will Edgar shows it on his map as "Birkhill Sheil."²² The road and the Grey Mare's Tail, but not the cottage, are well described by Bishop Forbes²³ who, on 8 August, 1769, went from Moffat up Moffatdale with a party of friends to view what he considered to be the finest fall of water in all Scotland. The following account of the afternoon's outing is recorded in his journal.²⁴

"We set out accordingly at 2 o'clock, three chaises in company, Bishop Gordon²⁵ and I in one, Mrs Forbes and Miss Jackie MackDonell in another, and Mr David Lyon and his servant, Sandie, in the third; Mrs Lyon not being so well as to go; and Mr Angus MackDonell,²⁶ our hospitable landlord, on a good mare, to be our conductor"

"After driving about two miles, we enter one of the finest and richest vallies I have ever seen, called the Glen of Moffat Water, standing thick with corn and hay, interspersed with meadow grounds, and bounded on each hand with a ridge of green mountains, decorated with bushes of wood, and with large flocks of sheep feeding and frisking up and down under the eyes of the careful shepherds tending them night and day with their sagacious dogs."

"In this fertile valley there were likewise herds of horses and black cattle, fat and sleek as otters, which upon the sight and rattling of the chaises took fright, stared, snorted, and galloped up and down with ears erect and tails standing out"

"When in the midst of a wood about half-way to the fall,²⁷ one of the

21 Carrifran Gans as spelt on O.S. maps. A precipitous hill north of Polmoodie house. "An Evedraught of the Lands on Moffat Water," surveyed by J. Tait in 1758, marks "Top of the Gawns." He also marks "Dob's Cleugh," a better description of "Dob's Linn." Scottish Record Office, RHP 10141.

22 Will Edgar. "The Shire of Peebles and Tweeddale," 1741.

23 Rev. Robert Forbes, Bapt. 4 May, 1708. Came to Edinburgh in 1735 and laboured all his life at Leith. In 1762 he was appointed Bishop of Ross and Caithness.

24 Rev. Robert Forbes, "The Lyon in Mourning," iii, 227, 236, 238-240. **Scottish History Society, XXII.**

25 Bishop of London.

26 Angus M'Donald who paid Window Tax on the 11 windows of his house in Moffat in 1763.

27 The Duke's Wood on Crofthead through which the road passed.

ends of the flichtet²⁸ of our chaise happened to break, which occasioned a halt 'What! Mr MackDonell,' said I, 'did you not tell me that many wheel machines have been driven the same way? And may not chaises go now where chaises have gone before?' 'All true,' said he, 'but then such heavy rains have fallen of late that the fords will be very deep, and they are rough and bad enough of themselves!'"

With the help of a rope the broken chaise was made as strong as ever and soon after this Mr MackDonell managed to find a guide to direct the party through the fords. They arrived at the Tail Burn where Bishop Forbes dismounted from his chaise, "stept over the burn and scamper'd up a green hill the best way I could; about the midst of which I came to a level bit of green about the extent of an ordinary table . . ." where he got a fine view of the fall. "It is white as snow and falls with such violence that the drops of water rebound to an extraordinary height. For ordinary it consists of three falls, rushing from one shelf of the rock to another, and at last disappearing into a hollow gulph which no eye could ever yet reach, around the mouth of which some trees wave their tops and serve to add to the beauty . . ."

"When we got into the chaises [to go back to Moffat] Mr Gordon said 'We cross'd the Moffat Water so often that we will now, in our return, count the number' which turned out to be no less than 16, without counting several other crossings of rivulets that discharge themselves from the hills into Moffat Water. But we brought the crossing of the Tail Burn into the reckoning."

The distance by road from Moffat to Birkhill is eleven statute miles and the kindest thing one could say about the old road is that it was not an all weather one. There were no bridges, the Birkhill Path was almost impassable to wheeled traffic and little was done to improve the roadway. However, the year after Bishop Forbes' jaunt, "A Plan for improvement of the High Roads in the County of Dumfries"²⁹ was drawn up wherein it was proposed that the Commissioners of Supply and heritors should voluntarily oblige themselves to pay so much a year for a certain term of years, and that the money so raised should be spent firstly towards the making and repairing of the most public and useful roads; secondly on the private and cross roads. A new highway from Moffat to Tweeds Cross by Erickstane Brae had by now been completed, with two bridges across the Annan, and such a great improvement on the old road that Bishop Forbes remarked on its excellence in his journal. It would seem that determined efforts were to be made to make a new road up Moffatdale, and allowing for a ten to twenty-year time lag, several miles of the road had been finished by 1786, and in 1793 the Minister of Yarrow was able to report that "Now a communication for carriages is opened up the Yarrow river, from Selkirk to Moffat and the West Country."³⁰ Crawford's map of 1804 shows this road following the line of the present road along the

²⁸ Flichtet, found only here. Possibly a corruption of English "futchell," a piece of wood in the forecarriage, supporting the splinter bar and pole of a chaise. **SND.**

²⁹ Scottish Record Office, Clerk of Penicuik Muniments (GD 18), No. 6114.

³⁰ Statistical Account of Scotland (1793), "Yarrow," vii, 511.

north side of the vally. It avoided the many crossings of the Moffat Water until it reached a point some hundred yards before the Tail Burn where as late as 1841, if the map of Dumfriesshire in the *New Statistical Account* can be relied upon, the road is shown crossing to the east of the river and by-passing the burn altogether. It then followed a line, still clearly visible, higher up the hillside above the present main road with which it merges near the Raking Gill. The river was undermining the hill below the road at one place and this necessitated a new section of road of about three quarters of a mile in length from the Raking Gill down to the Tail Burn which it then crossed by a ford.³¹ It was one of the duties of the Moffat Water roadman in frosty weather to break the ice on the ford during the years before a bridge was at last built. The Birkhill Path was thus done away with and the new road climbs the hill in an easy gradient along the south side of the valley.

The road from Birkhill, which skirted the north side of St Mary's Loch and carried on down Yarrow, was in a very unsatisfactory state, and in 1801 a committee was appointed for the purpose of suggesting some improvements.³² They reported that they were unable to advise "whether the Road ought to be carried along the North side of St Mary's Loch or along the South side. At present the Common road is on the North side and it takes a very circuitous course, to avoid Henderland meadow, which is a flat piece of ground, contiguous to the Loch . . . , which in its present state is not passable. But they were informed that formerly the road was on the South side of the Loch, and, in moderate weather, by the water's edge for the most part, upon the gravel or granate, which the water threw out." They thought that a passage might be opened across Henderland meadow and a bridge built over Megget Water, and this plan was afterwards carried out, but not before 1812 when Dr Singer wrote that "the very natural and ancient road into Selkirkshire, by Moffat, and the lakes at the head of Yarrow is hardly passable."³³

Roy's map shows only the "Moffatt-Selkirk" road on the south side of the loch. John Ainslie's map of 1773 (see plate) shows both and it was along one of these roads that Mr Scott of Harden (1724-1793)³⁴ drove his carriage and two spirited ponies, a courageous performance and spoken of as a wonder by those who witnessed it. On another occasion he was riding that way with a servant who related how they came to the Birkhill Path which Mr Scott was afraid to descend on horseback. "He accordingly dismounted and gave the horse to me. But on looking back, and finding me riding the one horse and leading the other, he was very much astonished and displeased."³⁵ Sir Walter Scott had also used the old road and, while halting at Birkhill on his way to Drumlanrig in 1826, the shepherd's wife put him in mind that he had "come twice over those hills and bogs with a wheeled-carriage before the road,

31 The O.S. Map of 1861 shows this new section.

32 Scottish Record Office, Buccleuch Muniments (GD 224), Box 583.

33 Dr Singer, *Agricultural Survey of Dumfriesshire* (1812), 409.

34 Walter Scott of Harden, 1724-1793, grandfather of Henry Francis Scott, Baron Polwarth, 1800-1867. *Scots Peerage*, vii, 83.

35 J. Russell, *Reminiscences of Yarrow*, 93.

now an excellent one, was made. I know it was true; but, on my soul, looking where we must have gone, I could hardly believe I had been such a fool."³⁶

About this time the shepherd at Birkhill was a man named James Hastie, assisted by a young herd, Walter Boa. It may have been Hastie's wife who in 1820 began to keep an open house³⁷ and with such success that the cottage became a well-known halting place. There, according to the Statistical Account of 1834, refreshment could be obtained and visitors could find accommodation. Moffat was then doing its best to entice people to stay there in the season, not only for the benefit of the spa but as a holiday resort. There were many beauty spots to visit, chief of which was the Grey Mare's Tail where the fall itself had been made accessible by a path cut along the face of the hill at the expense of Mr Hope-Johnstone of Annandale.³⁸

Birkhill was well placed to serve fishermen and visitors, and in due course the place became noted for its hospitality,³⁹ due to the efforts and outstanding qualities of a remarkable family. Four generations of this family are shown in an appendix where the pedigree starts with John Broadfoot, who went to Birkhill as shepherd in 1843,⁴⁰ and his wife, Janet or Jenny Rogerson. Broadfoot was no ordinary man. Said to have been very intelligent and well read, he included among his accomplishments the reputation of being one of the best shots in the district. "Jenny of Birkhill" was outspoken, witty and of uncommon nerve and was a "character who was worth knowing."

There were three children of the marriage. The eldest, William, was young herd to the father, and his untimely death when he was only 22 years old was a great blow to his parents. It was in December, 1847, and snow was lying on the ground when William went away to his hill. His dog was holding a sheep on the steep slope of the Bran Law which rises almost perpendicularly from a ravine about a quarter of a mile below the cottage. The dog could not shift it so his master climbed up to help it. The surface of the ground was treacherous and William slipped, and falling down into the burn below, broke his back against a rock. He lingered on for three weeks, and dying two days after Christmas, was buried in Moffat on New Year's Day.⁴¹

The young herd's place was filled by William Brown who had come to Moffat parish from Glengeith on Crawford Moor to work for Mr John Johnstone of Hunterheck. Like his father-in-law, he was reputed to have been very intelligent⁴² and in his later years was described as being "tall and spare of form, with strong fashioned features and massive head crowned with thick iron-grey hair."⁴³ He married Allison or Ailie, Jenny Broadfoot's elder daughter, and this combination of the two families maintained the high traditions of Birkhill for exactly half a century.

36 J. G. Lockhart, *Memoirs of Sir Walter Scott* (Macmillan & Co., 1914), v. 27.

37 As noted in the Birkhill Visitors' Book.

38 A *Guide to Moffat* (1833), by a Visitor.

39 William Keddie, *Moffat. Its Walks and Wells* (1854), 44. Birkhill, inhabited by John Broadfoot, where visitors "may rely on good homely cheer, and a hearty reception from the gudewife."

40 Memorial in Moffat kirkyard.

41 *Ibid.* and Duncan Fraser, *Riverside Rambles of an Edinburgh Angler* (1895), 79.

42 *Herald*, 2 Sept., 1898.

43 C. R. B. M'Gilchrist. *Birkhill* (1899), 10.

Jenny and Ailie kept an open house and seemed to cope with a constant stream of visitors and passers by. At the height of their season in June and July as many as a hundred people are known to have visited Birkhill during the course of a month, and though the majority of these people were not staying there, the number itself is remarkable. Many came by the regular excursion coaches which in the eighteen fifties left the Annandale Hotel in Moffat for the Lochs every Tuesday and Saturday,⁴⁴ and in years to come thrice weekly.⁴⁵

Broadfoot died in 1867 and Jenny in 1876 at the age of 85. The night before her death she had gone "to a house-heating where she had danced till midnight and dropped while carrying water to the house early the following morning."⁴⁶ William Brown remained on as shepherd and though Ailie had not the forceful personality of her mother her imperturbable good nature and cheery disposition induced many people to patronise the Inn as she herself once called it.⁴⁷ The two Browns had many friends and that C. R. B. McGilchrist was devoted to them is evident in his book *Birkhill*.

The Broadfoots and the Browns kept visitors' books. The four volumes contain the signatures of many people who had ventured forth on what was then considered an eventful expedition to the Lochs or to Loch Skene. Of special interest is the signature in 1890 of Charles Lapworth, the geologist, whose work in Dob's Linn between 1872 and 1877 has been recognised as being of great importance. The man and his achievement is commemorated by a tablet, erected on the wall of Birkhill cottage by Scottish Geologists in 1931. Besides the bare signatures there are occasional entries but only two are noteworthy. The first, dated 24 September 1864, records how fourteen men, headed by James Proudfoot of Craigieburn, carried a boat, the *Jane Laurence*, from Birkhill to Loch Skene where it was launched "with all the honors due to the occasion." The second, made on Wednesday, 22 May, 1867, mentions that it was "Derby Day and snowing hard and not likely to stop." Nevertheless, it was not a White Derby and the daily papers reported that it was bright and fine at Epsom till ten o'clock that morning when there was a sharp shower, followed by alternate showers of hail, rain and snow which only lasted a few moments.

The last volume ends in 1898 when William Brown retired and had to leave his home for over fifty years. His grandson, William Elliot, returned in 1908 to herd the Loch Skene sheep, and with his departure further down the valley to Roundstonefoot after 18 years in charge of that hirsle he brought to an end the association of his family with what is now a rather tired and lonely looking place, the cottage at Birkhill.

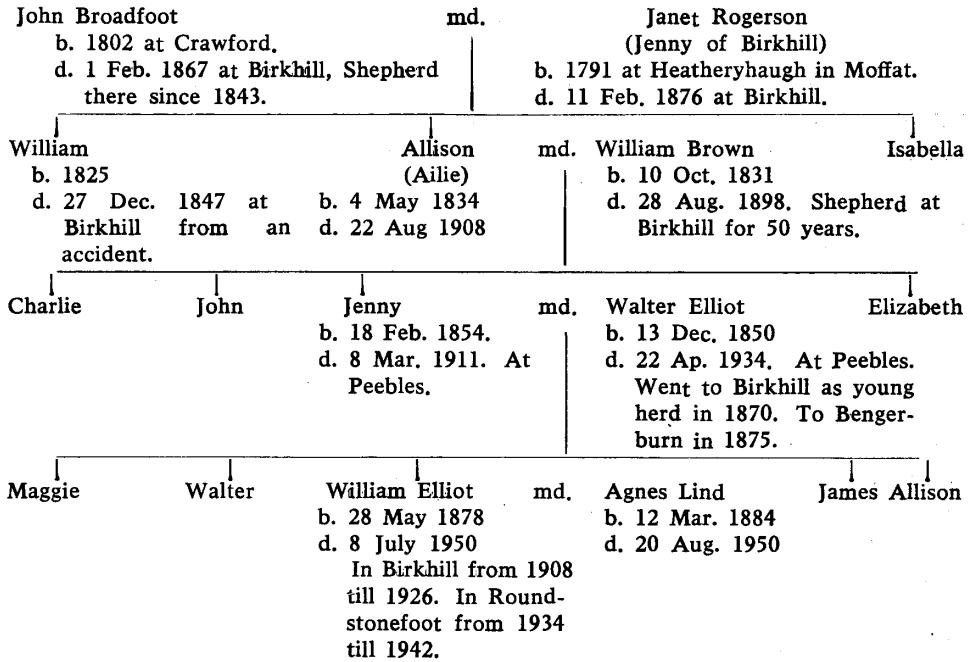
⁴⁴ *Moffat Register*, 8 Sept., 1860.

⁴⁵ Forrest's *Illustrated Guide to Moffat* (1900), xx. The Annandale coaches connected with the coaches from Selkirk.

⁴⁶ Diary in possession of the late J. Mackintosh Bell.

⁴⁷ *Herald*, 4 Sept., 1908. Birkhill is referred to as being a carrier's inn by the *Moffat Register*, 16 July, 1859.

APPENDIX



ACKNOWLEDGMENT

I am grateful to Mr W. F. Cormack for his help in completing this paper. I am also indebted to the late Mr William Elliot for information about his family and about Birkhill.



Plate XVII—View of Birkhill from the South-West in 1969. L...-R. Dob's Linn, the Birkhill Path in the middle distance, and the Moffat-Selkirk road.

LEAD-MINING AT WOODHEAD, CARSPHAIRN

By J. SASSOON

From 1840 to 1873 at Woodhead in the parish of Carsphairn, Colonel M. Cathcart fostered a remarkable development, but, characteristic of so many similar enterprises, its benefit was to be ephemeral. The decline in population was temporarily halted, for a time there was employment for all and a degree of prosperity ensured. The lead mines at Woodhead had the most up-to-date equipment and a "model" village community flourished—an example of the combination of enterprise and philanthropy on the part of the proprietor, but, some thirty years after its establishment the village had lost its *raison d'être* as the clamour and smoke declined with diminishing production. The moor was returned to the wild although, even yet, there is evidence of the workings and of the village. The stout shells of the miners' rows and of the two-storey school-house bear poignant witness to the aspirations of an earlier generation. An industrial community had been planted so improbably in a remote moorland setting. It flourished and withered.

What was it that had encouraged Colonel Cathcart to make such profound changes, and what were these changes? He could not have been induced by high lead prices, for they stood at their lowest for a hundred years. He may have been influenced by two factors. The first of these is what Dr Smout describes in the context of speculative mining in a previous age, as "the eighteen century instinct for gambling and amateur science" which may still have found expression in the Colonel. The second of these factors may well have been philanthropy, for the proprietor would have some responsibility for the poor on his estate, and may have found himself with the means to fulfil his duty on an impressive scale (The mine at Tyndrum was started expressly to provide employment in the relief ofcrofting distress on the Marquis of Breadalbane's estate). Hoping that prices could now only rise, he may have anticipated that along with the satisfaction of duty done and a hobby pursued, there might even be that of a return on the investment.

It is clearly evident that, for whatever reasons, the Colonel was thoroughly interested, for "efforts were under his own command." It was more customary for landowners to lease out the mine-working to companies at a "tack" of one bar in six, but less if production declined below a stated level, and with reservations as to the proper maintenance of the workings.

The most modern equipment was installed. A thirty-foot wheel was to drive the crusher, power being water, skilfully led from the neighbouring mountains. Smelting furnaces were "on the most approved plan," and preparations were made for separating the silver. It was hoped to take advantage of the abundant coal and lime to be obtained on the Ayrshire side (The Cathcart family's Ayrshire background would, no doubt, facilitate dealings with the coal and lime masters).

A large village, whose population became about three hundred, was built with a school and school-house, the schoolmaster and female teacher being rewarded "with a liberal salary." Colonel Cathcart provided the foundations of a library.

All this capital investment and infra-structure was laid down on this up-to-date and lavish scale before even an ounce of lead had been smelted. Perhaps Mr Welsh was right when he wrote: "It seems that the proprietor sought perfection rather than enrichment . . ." At all events "a wonderful change was wrought . . . in the bosom of a remote mountain" which had now become a scene of industry and activity "to be witnessed to be understood and which cannot be contemplated without astonishment."

During the period of this mine's activity, about two hundred tons of hæmatite were brought to the surface nearby, but this was never even taken to the smelter (probably the Dalmellington Iron Company) and lies there to this day. Small deposits of many ores had been found in the region (gold had been panned a mile away) but never in sufficient quantities to justify serious investment. This, then, was the background against which the Colonel was proceeding with his development at Woodhead.

The lead was smelted down, using coal obtained from Dalmellington some eight miles away. The carts brought coal up to Woodhead and took away the bar metal which had been re-smelted, if not continuously then from time to time, in order to extract the silver. From this silver the Cathcart family had a service made. The Colonel's wife, who presented Dalmellington with its church, provided the silver from which some of its communion cups were made.

Scottish ores are reported to have averaged seven or eight ounces per ton of lead, according to the Reverend J. Moir Porteous in his intriguingly titled "God's Treasure House in Scotland," published in 1876.

This gave Woodhead two advantages. Coal was a great improvement over peat, and elsewhere the cost of the more efficient fuel was usually found to be prohibitive. The silver, if its extraction was truly an economic proposition, could be looked on as a bonus, although its removal was necessary to maintain the purity and softness of the lead.

From Wanlockhead and Leadhills, at altitudes of about 1300 feet, as against about 800 feet at Woodhead, the road was long and rough both to Edinburgh (about 54 miles) and Dumfries (about 45 miles), but it was only eight miles to Dalmellington from Woodhead, using the new access road and the coaching road. Here the lead was stored in the "leid-yaird" and was dispatched as the market demanded. Because, generally, roads were poor, it was important to get the lead to a port as early as possible on its way to the consumer. It was only fifteen miles to Ayr, whence coasters were able to take the lead to market, either in Liverpool or London where, on account of its superior quality, it is reported to have commanded a higher price than metals from rival mines.

Lead was much used in pipes and roofs in building, and in the pottery industry. It had been exported to Amsterdam as "potters' ore."

Alongside the advantages of easy access to fuel and market must stand the technical advantage associated with modern plant. Two flues were erected on the hill-side with ducts leading up from the furnaces. From these additional lead was obtained, as it "condensed out of the smoke."

The village at Woodhead, being new, probably provided more comfort than

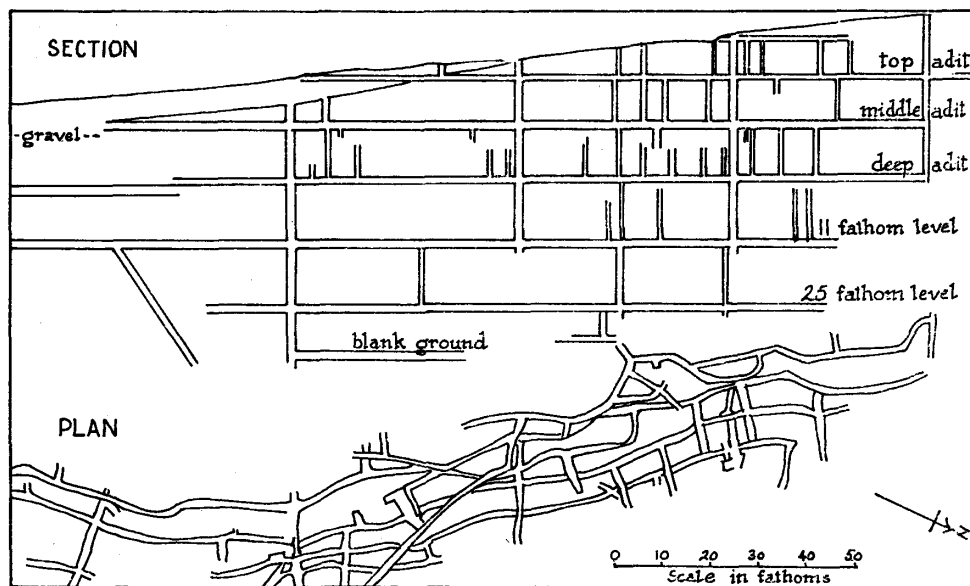


Fig. 1—Woodhead Lead Mine. Taken from an original drawing, this sketch shows the northern two-thirds or so of the workings.

other mining villages. The cottage roofs were of slate and the walls sturdy and weather-tight.

As was the case at the other villages, the proprietors permitted the miners to make gardens. This was very important, for the vegetables acted as an antidote to the scurvy which had been rife in these communities. It is reported that, in 1742-3, miners purchased five times as many anti-scorbutics as the other customers of the chemist in Sanquhar, as well as twice as many purgatives to ward off the horrors of lead-poisoning. No doubt the diet, basically of meal, would be augmented by the occasional trout from the burn, with or without the proprietor's permission.

The introduction of ducts and flues to take fumes away from the mine plant was a great contribution towards the reduction of the incidence of lead-poisoning, and Woodhead was fortunate in having this refinement right from the start, bearing in mind the earlier remark that lead was obtained from the gases which were drawn off in this manner. But for this, the miners would have found the noxious gases of the smelting process permeating the workings

and even poisoning the water supply, just as they may have experienced in the communities from which they had come.

The short working day (six to eight hours) was due to the uncongenial conditions of work. To pass their spare time the miners read a great deal, and following the precedent of Leadhills, a library was established, containing donations from the proprietor's own shelves. However, reading was not the only pastime in these communities. In 1784 the minister in one mining community wrote, ". . . . During the few months I have been here I have baptised more bastard children than for sixteen years before." A century later, a successor was noting "No less than SEVEN HUNDRED AND TWENTY POUNDS sterling was spent on tobacco in the village of Wanlockhead and Leadhills in the year 1875, whilst in the three churches not much above THIRTY POUNDS were contributed to promote the evangelisation of the world." Such profligacy by what was probably a minority, however active, was only in retaliation against the harshness of surroundings and the rigour of work.

From this, it seems it would not be difficult to distinguish between the shepherds and farm workers on the one hand, working long hours for poor wages, the rigours of their occupation having weeded out the weak and, on the other hand, the pallid miners, working much shorter hours for more wages, but showing the signs of the rigours of their occupation.

Paternalism was the system governing the mining workers' conditions of life and employment, and, in spite of all that has been said, many must have felt gratitude just for being in work, of whatever kind. The other side of the coin was in the conditions of work, in debt to the proprietor for tools and provisions and in fear of summary punishment for misdemeanors such as drunkenness.

How was the actual work of the mine organised?

At the surface were the smelters, the smallest group and suffering the greatest health hazard through the furnace gases, backed up by the crushing operation. This was often done, in early days, by boys of nine years' age, in the open or under rude shelters with simple hammers; but at Woodhead, the great thirty-foot wheel drove the crusher. Blacksmiths kept the tools and bogies and their railway in operation.

Below ground, groups of workers contracted with the management to extract the ore, with pick and shovel, on the basis of tonnage of bar lead smelted out (no lead—no pay) or to dig adits at a rate per fathom. Prices ranged between £2 15s and £6 per ton of lead raised, and £6 and £7 10s per fathom of working. Such bargains only ran for a month or two at a time or during the Master's pleasure. "because there is always the chance of a vein growing richer and in that event the workmen would have extravagant wages" considered the manager at Wanlockhead in the 1760's.

Before 1860 (at Dalree) about half the cost of smelting was in wages, the other half being fuel (peat at 2d a load, coal at 20d a load) and lime, the whole

of this running to about one pound per ton. To this had to be added the mining costs, plus drainage, exploration, transport (at about 10% of the market price at Leith of Leadhills lead, down the toll-free road via Biggar in the 1740's), management and the "tack" paid by the exploiter to the proprietor. Of course, at Woodhead, there was no tack, as exploitation was in the laird's hands.

The risk, to the entrepreneur's capital and to the life and limb of the humble

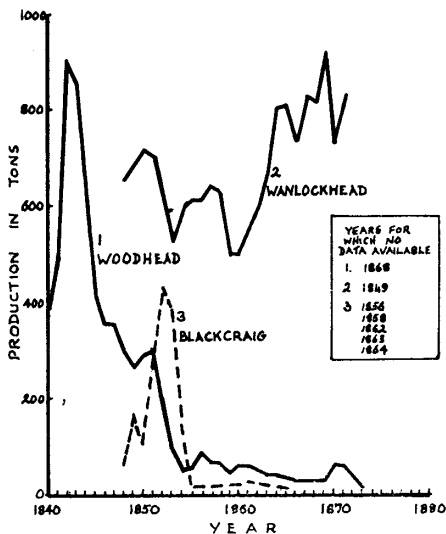


Fig. 2—Some production figures for three lead mines, 1840-1873; from records of the School of Mines and Geological Survey.

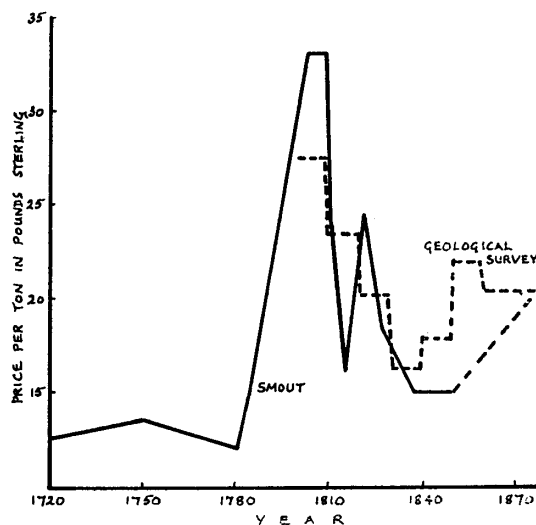


Fig. 3—Some lead prices for Scotland, 1720-1880; from Geological Survey Special Report and T. C. Smout.

worker was high. Sir John Erskine of Alva used to tell visitors, "Out of that hole I took fifty thousand pounds—and I put it all into that hole!" At one time about one third of the useful surface water at Wanlockhead was disappearing down a new level at adjacent Leadhills. This sort of thing led to great and unexpected expenses in lading water—and in litigation.

Thus, in 1839, perhaps on a whim, perhaps on a high sense of duty, perhaps on a simple desire for gain, Colonel Cathcart brought about an exciting change on his estate. Two centuries previously the land had been in process of having its natural timber cover removed. Then sheep and black cattle for which Galloway was noted took over. Now, for some thirty years there was to be industry, with the clank of machinery, the ring of hammer, and also with noxious fumes. With the closure of the mine (some reasons for which are suggested in the notes on the graphs) shooting seems to have become the proprietor's interest. By 1909 the Ordnance Sheet was indicating that some of the cottages had become kennels, and the most substantial house, possibly the manager's or the school-house, had become a shooting lodge. The shafts were fenced off and used as rubbish tips. Livestock once again

roamed the site, sheltering in the broken-down buildings or under the few trees that had been planted to soften the line of the bare hillside. The daffodils that had been planted persist today.

The great wheel remained until the 1920's and in the second war all the houses, except the lowest-lying row, were being cannibalised for the slates and timber, or even vandalised, for proper supervision of the estate was impossible in war-time. The surviving house is used for holidays and the others in its row have been converted into an implement-shed.

The land reverts and Woodhead sees only the shepherd, the occasional hill-walker and the lorries which come from time to time to remove the spoil for road-metal.

There is practically no documentary evidence of what social and economic life was like at Woodhead, or of the motivation for, and economics of the actual mining enterprise. For instance—how many workers were there at any time? Harper wrote that there was a village of some 300 souls, but how many were able-bodied men, or how many were children? What was the "liberal salary" of the school-master and his assistant? It is said that the community worshipped at Carsphairn and the now-ruined Free Church at Lamloch nearby. From whence did the people come, and indeed where did they go? It seems that many came from the other Southern Uplands Mines. The blacksmith at Carsphairn in 1898 was a Cornishman—probably a former mine employee.

For Wanlockhead and Leadhills there are the detailed diaries of the managers as well as letters and reports by others, often the minister, or even a worker, but for Woodhead these do not now exist. There is no one who can himself recall the mine in its heyday, only descendants who may remember what anecdotes grandparents recounted.

Thus, it is necessary to piece together the picture of the lead-mine at Woodhead by using the evidence of others' eyes and the details of other enterprises. At its best it must be shadowy, patchy, drawn by inference rather than direct evidence. Despite this, on visiting what is left of Woodhead, it is possible to imagine the scene of "industry and activity" so enthusiastically described by Mr Welsh, who would have been sorely disappointed to see, in 1873, after only thirty-five years, the last of that year's paltry twelve tons of lead leave on the cart for the "leid-yaird" at Dalmellington.

What, now, of the future of Woodhead? As trends run today, the village may disappear under afforestation, or, to some improvement of the land, perhaps the sheep may give way to the black cattle as beef ousts lamb in the housewife's favour.

It is most unlikely that lead should once again be extracted from that "bosom of the mountain."

ACKNOWLEDGMENTS

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 D. L. Smith, author of "The Dalmellington Iron Company."
 T. C. Smout, M.A., Ph.D., Department of Economic History, University of Edinburgh.
 A. E. Truckell, M.A., Dumfries Burgh Museum

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NOTES ON FIGURES 2 AND 3

The Geological Survey prices are given for 10-year averages, while Dr Smout's are those noted in his papers "The Lead Mines at Wanlockhead" and "Lead-Mining in Scotland, 1650-1850." Although there are discrepancies, the trends are similar.

Rises in the price of lead are attributable to the American and Napoleonic Wars. The post-Napoleonic drop was brought about by the withdrawal of import restrictions and the consequent entry of cheap Spanish lead into the market. The building boom of the '30's may have prevented prices from slumping even further.

Comparing the production-graphs of the three mines, it is to be noted that the only one with a generally rising tonnage is Wanlockhead, and this, in fact, after some three hundred years of recorded extraction.

Both Woodhead and Black Craig reached their peaks in under five years from beginning extraction, and immediately thereafter tonnages fell sharply, never to recover seriously.

Wanlockhead tonnages made some response to the rising prices after 1850, Woodhead made a small, temporary recovery and Black Craig was, at that time, in the throes of its opening spurt.

Accordingly, it seems that the two younger mines were in no position to take advantage of higher prices, but worked at their highest rate till they were worked out, or until costs were exceeding returns to a punitive degree. The relatively easy extraction-period seems to have been a matter of only two or three years.

By comparison with Wanlockhead, Woodhead and Black Craig were really quite unimportant, in economic terms.



Plate XVIII—Woodhead Mine, from the S.-E., about 1870

PRELIMINARY NOTICE OF VERTEBRATE FOOTPRINTS FROM THE TRIAS
OF DUMFRIESSHIRE

By J. B. DELAIR

Except for a single Chirotheroid footprint (originally described as *Labyrinthodont*) recorded by Harkness in 1850 (3: p. 206) from Corse Hill quarry, 2½ miles north of Annan, all the known Scottish examples of Triassic vertebrate footprints have come from the sandstones of Morayshire. These were noticed as early as 1852 (2), and were afterwards the subject of, or were mentioned in, papers by, among others, Beckles (1), Huxley (4), and Jolly (5). One of these forms has been described and named *Chelichnus*

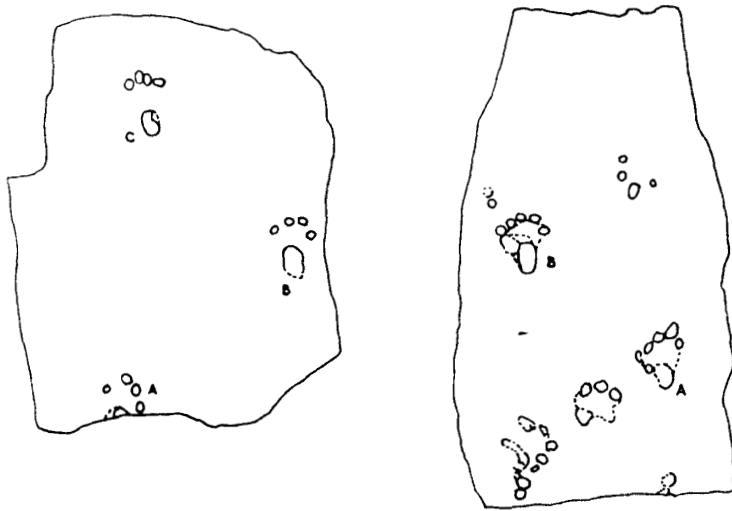


Fig. 1 (left) and Fig. 2 (right)—Both are half natural size

megacheirus, but other, ill preserved footprints of different character are also known, being in fact still encountered occasionally in Morayshire sandstone quarries.

The discovery, late in October, 1968, of additional Triassic footprints near Annan was, therefore, an event of considerable interest, not only because it occurred at a locality hitherto unproductive of fossil ichnites, or because the Corse Hill "*Labyrinthodont*" specimen is now either lost or misplaced, but because the new material is quite unlike the Morayshire *Chelichnus* footprints or, indeed, any previously reported from the Scottish Trias. The following details constitute a preliminary account of this new discovery.

The present evidence consists of natural casts of both isolated footprints and portions of tracks (not infrequently overlapping or crossing one another at various angles and irregular intervals) on five slabs of fine grained, deep red, and generally unfossiliferous sandstone from the west bank of the River Annan, near Violet Bank, some 400 yards downstream from the present water bailiff's cottage (grid ref. NY 192674). The slabs were collected by Colin Burgess (16 years) and David Urquhart (12 years), who subsequently presented them to Dumfries Burgh Museum.

In addition to the isolated footprints of various sizes and proportions, at least three distinct tracks are represented. Of these, the smallest (text-fig. 1, a-c) is typified by four unevenly arranged, irregularly-shaped digits separated from a narrow sole of elongate shape. A slightly larger kind of footprint (text-fig. 2, a-b) characterises the second kind of track, in which there are five well spaced, nearly circular-shaped digits arranged in a tight arc and separated from a sole of a general oblong configuration. The third track con-

sists of ichnites possessing broader soles having rounded posterior margins and bordered anteriorly by four strongly developed, evenly spaced digits of irregular shape set obliquely to the long axis of the imprint (text-fig. 3, a-d). These latter ichnites are somewhat reminiscent of those elsewhere named *Chelichnus*.

Plans are now in hand to explore the site more thoroughly in the hope that it will



Fig. 2—One half natural size.

yield additional and more extensive material preparatory to the eventual publication of more detailed descriptions of this interesting new evidence.

My sincere thanks is due to Mr A. E. Truckell, of Dumfries Burgh Museum, for bringing this discovery to my attention and for loaning the specimens currently extant.

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FIRST DUMFRIESSHIRE RESERVE OF SCOTTISH WILDLIFE TRUST

By Dr H. MILNE REDHEAD

The Dumfriesshire and Stewartry of Kirkcudbright Branch of the Scottish Wildlife Trust was inaugurated on 7th June, 1967, and six months later the first local nature reserve was established. Known as the Fountainbleau and Ladypark Reserve, it

followed an agreement with the joint owners, Messrs J. J. & S. Dick, Ltd., of Fountainbleau Farm, and Mr James B. Kerr, of Ladypark Farm. Originally the site of a sheet of water known as the Black Loch and a "favourite resort of our curlers during the season of the roaring play" (so said the New Statistical Account of Scotland for the Parish of Dumfries, 1841), it occupies a natural depression below 50 feet O.D. with a high water level, drainage into the river Njth impeded by the subterranean outflow pipe. In the Ordnance Survey Map of 1870 it is shown as largely planted with conifers and with a curling pond in one corner. The main drainage ditches remain as then but now the dominant tree is the Birch in all stages from seedlings through a thicket stage as saplings to open canopy and proceeding to dead poles, rotting stumps and fallen logs, these latter providing an ecological niche for a wide range of small invertebrates. Common Sallow, Bay Willow, Rowan, Oak, Alder and Bog Myrtle are also present in varying quantity, with Hawthorn edging the wood in places. The herb layer is typically of Purple Moor-grass (*Molinia caerulea*) with Narrow Buckler Fern (*Dryopteris carthusiana*) and Common Hair-Moss (*Polytrichum commune*) between the tussocks. Interspersed are quite extensive wetter ground societies dominated by Bottle Sedge (*Carex rostrata*) associated with White Sedge (*Carex curta*), large amounts of Marsh Cinquefoil (*Potentilla palustris*) and Marsh Bedstraw (*Galium palustre*), also Marsh Violet (*Viola palustris*) and a little Bog Bean (*Menyanthes trifoliata*). Bog Mosses (*Sphagna* spp.) abound and the common bryophytes of acid habitats, notably Silky Pendulous Thread Moss (*Pohlia nutans*) and *Dicranoweisia cirrata*, but the recent immigrant *Orthodontium lineare* and *Aulacomnium androgynum*, elsewhere unknown in Dumfriesshire, also occur.

When the wood was first visited as a potential reserve in May, 1967, the birdlife was obtrusive. The "chay" of a Willow-tit led to the birds being watched at their nest-hole then and on several subsequent occasions. Redpolls constantly trilled overhead while Willow-warblers and Reed Buntings were ubiquitous. That season at least two sets of Mallard ducklings were reared and one family swam close up to the observer at a junction of the draining ditches, which would be a suitable place for a look-out point. Spotted Flycatchers used the birch poles as vantage points and many other species were present. A bird census is planned. Roe Deer are often encountered and are reported to breed, as do no doubt smaller mammals including Water Voles. Small Pearl-bordered Fritillaries were seen, but the Lepidoptera is only one of the orders of animal life that will require to be listed.

The main drains will require bridging and this is to be undertaken when conditions are suitable. A Nature Trail is envisaged and a Hide will be constructed.

The Reserve has, therefore, an extensive natural history interest, and its relatively undisturbed state and accessible position should make it valuable both for educational purposes and as a sanctuary for wildlife almost on the Burgh boundary.

A BOAT-SHAPED STRUCTURE ON ROCKHALL MOOR

By J. WILLIAMS

On 1st January, 1969, the writer took Mr A. E. Truckell along the Torthorwald ridge to a point near its Southern end, high on the ridge and almost on the watershed, to inspect a structure (Map reference NY069759), apparently hitherto unrecorded, which the writer had noticed, surveyed, and drawn. This note is to draw attention to a structure which, whatever its date, is of a type not previously noticed in this Society's area.

An area roughly 75 feet long by 15 feet wide is enclosed by a low yet sharply outlined sod and rubble bank against which some six inches of peat has accumulated.

Within the enclosure there is nine inches of silt. Though it is on a slight slope the interior is still very marshy and the whole thing was reminiscent to some degree of the Southern English dew-ponds. It lies within 135 feet of a large double circle

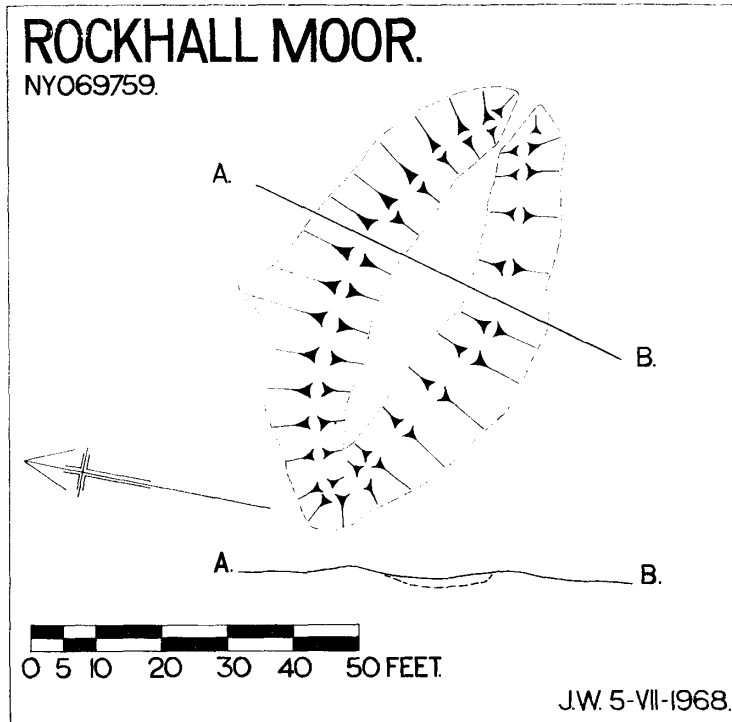


Fig. 3—Plan of boat-shaped structure on Rockhall Moor.

comprising concentric rubble rings from which large stones, brought from some little distance as there is no exposed stone nearby, protrude: it has all the appearance of a Bronze Age mortuary enclosure, or could be something of henge type.

The boat-shape of the small enclosure although paralleled in some large fortifications (such as Green Island, Milton Loch) is unique so far in our area for pond-like banked enclosures. Its position practically on the watershed rules it out as a mill-pond and makes it unlikely as a livestock watering-place.

IRON AXEHEAD FOUND AT ANNAN

By J. G. SCOTT

The iron axehead, reg. no. 1967-269, shown in fig. 4 was found at a depth of about 18 in. during the making of a house garden at Stapleton Road, Annan. It was presented to the Burgh Museum, Dumfries, by ex-Provost Thomas Dykes.

The axehead measures 10½ in. from top to bottom, and 7¾ in. along the edge of the blade, which is about ¼ in. thick. The surface is pitted by corrosion, which has no doubt caused the hole near the front of the blade. The socket for the haft is triangular in shape,

and flat on top. It seems to have been formed by bending the top of the blade back upon itself and fire-welding it into the body.

Formidable although this axe might appear, it is probably to be regarded as a wood-working implement rather than a weapon. An axe with a head of rather more pronounced

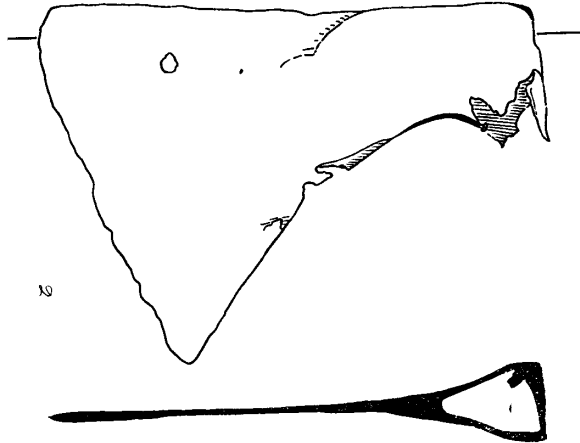


Fig. 4—An Iron Axehead found at Annan (one quarter scale)

“bearded” type, i.e. with the rear part of the blade drawn out from a narrower body, and with a rather short haft similarly angled, is shown in the hands of a carpenter in a piece of stained glass now in the Burrell Collection, Glasgow (inv. no. 200). The stained glass has been dated to about 1400.¹ The triangular type of socket found on the Annan axehead is a mediæval rather than a Viking characteristic. With these considerations in mind, one might therefore provisionally classify the Annan axehead as a woodworking implement of about 1400.

¹ Hans Wentzel, “Unbekannte Mittelalteliche Glasmalereien der Burrell Collection zu Glasgow,” in *Pantheon* (July-August, 1961), 181 and 184, fig. 11. I am indebted to my colleague, Mr W. Wells, Keeper of the Burrell Collection, for this information.

QUILLON DAGGER FROM TIBBERS CASTLE

By J. G. SCOTT

The iron dagger, Reg. No. 1965—107 [Grierson Coll. Reg. No. 45], now in the Burgh Museum, Dumfries, was found at Tibbers Castle (Fig. 5).

The dagger is 14 in. long, with a blade 9½ in. long, the tip of which is missing. One complete quillon, 1½ in. long, shows that the cross must originally have been 3 in. long.

The stiff blade, originally straight, is diamond-shaped in section. The surviving quillon seems also to have been a diamond section, at least towards its tip, which is slightly expanded and somewhat drooping. The pommel is a variety of the wheel shape, bevelled and perhaps originally faceted, though extensive corrosion makes it difficult to be certain of this.

In mediæval swords, the wheel-shaped pommel had a long life, but Oakeshott ascribes to the faceted form, his Type II, a period of greatest popularity from about

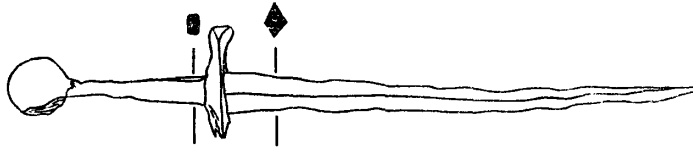


Fig 5—A Quillon Dagger from Tibbers Castle (one quarter scale)

1360 to about 1440-50.¹ The stiff blade, of diamond section, suitable for thrusting, is also found in swords of the later rather than the earlier mediæval period, classified by Oakeshott as his Type XV.² It seems reasonable to assume that the quillon dagger, where it shows similar characteristics, may be classified on similar lines. It may, therefore, be suggested that the Tibbers Castle quillon dagger should be dated to the first quarter of the 15th century. I am grateful to Mr J. Williams for preparing figures 4 and 5.

1. R. E. Oakeshott, *The Sword in the Age of Chivalry* (1964), 103.
2. *Ibid.*, 56-9.

MEMORANDUM OF A JOURNEY TO DRUMCRIEF IN 1740¹

(In Sir John Clerk of Penicuik's own handwriting)

Transcribed by W. A. J. PREVOST²

I went there on the 9 of Agust sd year and carried with me in a coach with 6 horses my wife and my daughters Ann and Joanna. Sr Ja. Holborn was likeways with us. Our equipage consisted of a coachman, a postilion, 1 servant on horseback, and one with a baggage horse. We dined at the Crook but the Bille is a better place.

We we:e from Pennicuik about 8. Came to the Crook in 5 houres, and from thence to Moffat in 4 houres.

We staid in Drumcrief from the sd 9 of Agust to the 6 of September, and in that time spent 37 lib 10 sh str. The house was kept by me but we had mutton and grass for our horses in my son George's park. Corn was very dear, for in that time our horses, which were only 2 coach ones, 3 riding horses with 2 more for my son James and his servant for 5 days cost me in all about 4 lib 10 sh.

Our common accompt to Mary Johnstone weekly for bread, ale, meal, malt, peats was about 3 lib str.

The bills at Moffat for my self and Sr Ja. Holborn cost at least 40 sh.

I was 2 nights at Drumlanrig with the D(uke) of Q(ueensberry) and gave in drink-monie 1 guinea and about 5 sh to the meaner servants. I was 1 night by the way at Neitherurd and this cost me one way or other about 1 lib 3 sh str. We lodged at the House of Neitherurd and my horses were kept at a change house on the road half a mile off and cost me 12 sh 6d.

We went a shooting and fishing on all fair days. Our sport was best for moorfoul at the joyning of the Water of Kinnel to another water which comes from Queensberry hill.³ We had no sport at the river moss nor saw we ever a heath fowl. In fishing for 3 days neither George nor I cou'd raise one salmon, but we took abundance of small trouts called parrs, having 8 or 9 bleuish spots on each side and about 5 inches long. As for large trouts we took very feu. We fished on the Water of Kinnel but had bad sport. We tried the salmon net but without success. We did not set by Drumcrief damhead

where we might have found abundance of trouts, as also in a part of Evan near the meeting of the waters⁴ which might have given us fine diversion.

We took a large pyke with a nett at a pond in the moor about half a mile west of Girthhead called the Gate Side.

We tried a salmon nett twice but with no success. I found the moorfoul in Anandale much larger than ones in Lothian.

Our circumstances at Drumcrieff

My wife and I had the best room but it is ill provided with furniture, and wou'd take a folding up bed with curtains of the same collours. Stamped linnen wou'd do best and the room is about 20 elles round and 2 elles high, so that to the cornice it wou'd take about 40 elles square of such linnen. The bed needed take but little.

The dining room belou stairs is not in order. Painted paper wou'd be best to hang round it. It wou'd likeways take about 40 elles square with some fine prints in frams.

The Brae on the front of the house wou'd require about 50 beeches at 15 or 20 feet wide.

The grass on the water side is very rich and fit for duck lands but it is in the hands of bad tenants for making of butter and their coves are good for nothing.

Our horses were sometimes in our nighbour's corns and cou'd not be kept in my son's inclosures. They spoiled the sheep going in the park with the stone wall and therfor if hay had been cheap it would have been better to have kept them on hay.

Note I owe George⁵ at least 30 half crowns for his grass and at leist 30 or 40 sh for mutton and lamb, but I gave him a present of a chaise horse and am to make him a complement of a small right I have in a feu in Moffat which belonged to one Porteous and on which my father in the year 1712 lent 200 merks. George may make about 13 lib ster of this or better.

These memorandums are only made to put me in mind of some things in case it please God that I go there again.

1. Scottish Record Office, Clerk of Penicuik Muniments, 2332.

2. v. Dumcrieff and its owners in these Transactions, Vol. 45, p. 200.

3. Lochan Burn.

4. The Meeting of the Waters. (Annan, Evan and Moffat.)

5. His son, George, afterwards Sir George Clerk, 4th baronet.

REVIEW

"Christianity in Britain, 300-700," ed. M. W. Barley and R. P. C. Hanson, Leicester University Press, 1948, 50 shillings.

This handsome 221-page volume, covering the early centuries of the organised Christian Church in Britain, has of course a very great relevance to our own area: and in fact such sites as Kirkmadrine and Whithorn figure prominently and Dr C. A. Ralegh Radford and Professor Charles Thomas, both well known to this Society as excavators in its area and as writers on local sites in its Transactions, are prominent among the contributors, the former on "The Archæological Background on the Continent" and the latter on "The Evidence from North Britain." All the papers were submitted to a conference at Nottingham in April, 1967, and include besides those already mentioned an Introduction by Professor Myres, "The Western Church in the Fifth and Sixth Centuries," by A. H. M. Jones, "The Christianization of Roman Britain," by W. H. C. Frend, "Christianity in the Roman Army in Britain," by G. R. Watson, "The Literary Evidence," by J. R. Morris, "Some Linguistic Evidence Relating to the British Church," by D. Greene, "Eccles in English place-names" by Kenneth Cameron, "St. Patrick and the

British Church," by L. Bieler, "The Church in Wales," by W. H. Davies, "Le Latin du De Excidio Britanniae de Gildas," by F. Kerlouégan, "Pagan Motifs and Practices in Christian Art and Ritual in Roman Britain," by Professor Jocelyn Toynbee (another who has contributed to our own Transactions on two occasions), "An Early Christian Cemetery at Ancaster," by D. R. Wilson, "Britonia," by E. A. Thompson (how many of us know that there seems to have been a British colony, with its own Bishop, in North-West Spain?), and, to round the whole off, "Summary and Prospect," by R. P. C. Hanson.

Most of these titles explain themselves: Professor Thomas' paper is of particular interest to our area, with its suggestion of sub-Roman dioceses in South Scotland and its evidence of very early Christian activity at such sites as Carlisle.

For anyone interested in this most obscure period—and for many people these obscure marginal periods have a special attraction—this handsomely produced volume is well worth fifty shillings.

A. E. T.

OBITUARY

Mr ERIC KERR ADAM

The sudden and unexpected death on 29th July, 1969, of Mr Eric K. Adam in his 70th year has deprived the Society of one of its most efficient and energetic honorary treasurers. Even in the brief period since accepting office in October, 1966, Mr Adam had amply demonstrated his capacity and fitness for the onerous work involved and for safeguarding and promoting the interests of the Society, and we now mourn the loss of an exceptionally valuable, trustworthy and enthusiastic member of our Society and of our Council.

After graduating M.A. and B.Sc. (Engineering) at Glasgow University, Mr Adam completed training as a Civil Engineer and was duly admitted as an associate member of the Institute of Civil Engineers. Thereafter he undertook many large-scale works of civil engineering both at home and overseas before joining the Air Ministry Works Directorate during the last war, when he was responsible for the construction of Airfields and Aerodromes. Subsequently he transferred to the Ministry of Works and was engaged on the Spadeadam Rocket Establishment, Cumberland, until its abandonment in 1960. He then came to Dumfries, where he was a member of the staff of the Roads Department of Dumfries County Council until his retirement in December, 1965.

His generous service to this community during his stay here was acknowledged by the presence at a Memorial Service on 2nd August, 1969, at Laurieknowe Church, Dumfries, of representatives of each of the various bodies of which he was an active member.

The deepest sympathy of the Society is extended to his widow, Mrs Winifred Adam, who is also an esteemed Member.

J. R.

PROCEEDINGS

1968

11th October—The Annual General Meeting of the Society was held at 7.30 p.m. in the Ewart Library, Dumfries. The retiring President, Mr J. D. Stuart Martin, was in the Chair. The Accounts of the Hon. Treasurer were adopted. Mr James Robertson was elected as President of the Society and the list of other office-bearers nominated by Council was confirmed. Sixteen adult members and

six Junior members were elected. Mr Martin then vacated the Chair and installed Mr Robertson as President. Mr Robertson then called on the retiring President to deliver his Presidential Address, the subject of which was "Round the Loch," a study of the flora and fauna inhabiting the shores of a loch throughout the year, illustrated with very fine colour slides.

- 25th October**—Dr W. Graham Jardine, of the Department of Geography of the University of Glasgow, lectured on "Landscape Evolution in Galloway," his talk being finely illustrated with colour slides. Six adult members were elected.
- 8th November**—Mr David Cunningham, a past-President of the Society, presented an interesting programme "Colour Slides of Plants and Butterflies of the Dolomites and the Oberland." One adult member was elected.
- 22nd November**—Mr Daniel Hay, Librarian and Curator at Whitehaven, presented "Some Historical Links between Whitehaven and Dumfriesshire and Galloway," his lecture being illustrated with colour slides.
- 6th December**—Four films were shown, three on archæological and historical subjects and one on natural history. Three adult members were elected.

1969

- 10th January**—Mr Gordon Petrie, of the Department of Geography of the University of Glasgow, lectured on "Aerial Survey and Photogrammetry applied to Archæology," his talk being illustrated with colour slides and diagrams. One adult member was elected.
- 24th January**—Miss M. H. Milroy spoke on "Travels in Three South Asian Countries" and showed colour slides of Hong Kong, Cambodia, Thailand and Malaysia. Two senior members were elected.
- 7th February**—Mr Charles Daniels, of the Museum of Antiquities of Newcastle-upon-Tyne, lectured on "The Roman Fort at Broomholm Knowe, Langholm," his talk being illustrated with colour slides of the site and the surrounding country. Three adult members were elected.
- 21st February**—Mr S. A. J. Oldham was unable to come because of illness, and Mr George N. Stallard, of the City of Glasgow Parks and Botanic Gardens Department, kindly substituted for him and lectured on "Landscape Conservation in the West of Scotland." Mr Stallard showed a fine series of slides. One adult member was elected.
- 9th March**—Mr George Jobey, of the University of Newcastle, lectured on "Hill Forts and Settlements in Eastern Dumfriesshire," his talk being illustrated with colour slides. One adult member was elected.

Publications of the Society

Transactions and Journal of Proceedings: 1st Series—(a) 1862-3, (b) 1863-4*, (c) 1864-5*, (d) 1865-6*, (e) 1866-7*, (f) 1867-8. New or 2nd Series—(1) 1876-8*, (2) 1878-80*, (3) 1880-3*, (4) 1883-6, (5) 1886-7, (6) 1887-90, (7) 1890-1, (8) 1891-2*, (9) 1892-3, (10) 1893-4, (11) 1894-5*, (12) 1895-6*, (13) 1896-7, (14) 1897-8, (15) 1898-9*, (16) 1899-1900, (17) 1900-5 (in 5 parts), (18) 1905-6, (19) 1906-7, (20) 1907-8, (21) 1908-9, (22) 1909-10, (23) 1910-11*, (24) 1911-12. 3rd Series—(i) 1912-3, (ii) 1913-4, (iii) 1914-5, (iv) 1915-6*, (v) 1916-8, (vi) 1918-9, (vii) 1919-20*, (viii) 1920-1, (ix) 1921-2, (x) 1922-3, (xi) 1923-4, (xii) 1924-5, (xiii) 1925-6*, (xiv) 1926-8, (xv) 1928-9, (xvi) 1929-30, (xvii) 1930-1, (xviii) 1931-3, (xix) 1933-5, (xx) 1935-6, (xxi) 1936-8, (xxii) 1938-40*, (xxiii) 1940-5, (xxiv) 1945-6, (xxv) 1946-7, (xxvi) 1947-8 (xxvii) 1948-9 (Whithorn Vol. 1), (xxviii) 1949-50, (xxix) 1950-1 (with Index of Vols. i to xxvi), (xxx) 1951-2*, (xxxi) 1952-3*, (Hoddam Vol.), (xxxii) 1953-4, (xxxiii) 1954-5, (xxxiv) 1955-6 (Whithorn Vol. 2), (xxxv) 1956-7, (xxxvi) 1957-8, (xxxvii) 1958-9, (xxxviii) 1959-60, (xxxix) 1960-61 (with Index of Vols. xxvii to xxxviii), (xl) 1960-62* (Centenary Vol.), (xli) 1962-3, (xlii) 1965 (new format), (xliii) 1966, (xliv) 1967, (xlv) 1968.

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- Birrens and its Antiquities**, by Dr J. Macdonald and James Barbour, 1897. 7s 6d post free.
- Communion Tokens**, with a Catalogue of those of Dumfriesshire, by Rev. H. A. Whitelaw, 1911*.
- History of Dumfries Post Office**, by J. M. Corrie, 1912*.
- History of the Society**, by H. S. Gladstone, 1913*.
- The Ruthwell Cross**, by W. G. Collingwood, 1917*.
- Records of the Western Marches, Vol. I**, "Edgar's History of Dumfries, 1746," with illustrations and ten pedigree charts, edited by R. C. Reid, 1916*.
- Records of the Western Marches, Vol. II**, "The Bell Family in Dumfriesshire," by James Steuart, W.S., 1932*.
- Records of the Western Marches, Vol. III**, The Upper Nithsdale Coalworks from Pictish Times to 1925, by J. C. I. M'Connell, 1962. 15s.
- Notes on the Birds of Dumfriesshire**, by Hugh S. Gladstone, 1923*.
- A Bibliography of the Parish of Annan**, by Frank Miller, F.S.A.Scot.*.
- Index to Transactions. Series 1 and 2.** £1 post free.

*Indicates out of print

REPRINTS (Selection)

ARCHAEOLOGY

- Bronze Age Metalwork in Dumfries and Galloway**, by Dr John M. Coles (1965), 38 pp. with 11 figs., 1 pl., and inventory of 233 finds. 4s post free.
- Food Vessels in S.-W. Scotland**, by D. D. A. Simpson (1965), 26 pp., 76 vessels illustrated, described and fully discussed. 3s 6d post free.
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- A Mesolithic Site at Low Clone, Wigtownshire**, by W. F. Cormack and J. M. Coles (1968), 29 pp., 10 figs., 1 pl. 5s post free.
- Cinerary Urns and Pygmy Vessels in S.-W. Scotland**, by A. Morrison (1968), 61 pp., 139 pots inventoried, illustrated and fully discussed. 10s 6d post free.

NATURAL HISTORY

- Fossil Footprints from Dumfriesshire with description of new forms from Annandale**, by J. B. Delair (1966), 17 pp., 4 figs. 2s 6d post free.
- Fish Fauna of the Castle and Mill Lochs, Lochmaben**, with special reference to the Lochmaben Vendace, *Coregonus Vandesius* Richardson, by Dr P. S. Maitland (1966), 18 pp., 2 pls., 2 figs. 2s 6d post free.
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