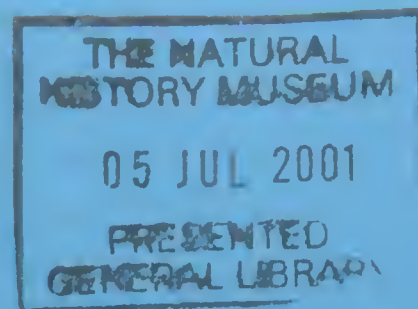


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A Journal of Scottish Natural History

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Founded 1871

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and *The Western Naturalist*

108th Year

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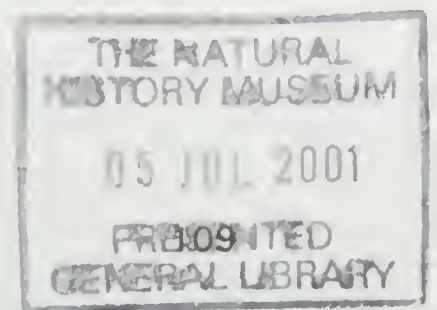
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1996

Editorial



**A. RODGER WATERSTON
1912-1996**

It is with the greatest regret that we have to record the death of Rodger Waterston, formerly Emeritus Keeper of Natural History at the Royal Scottish Museum, Editor of the *Scottish Naturalist*, and one of the most distinguished and widely versed natural historians of this century.

Rodger died on 12th July 1996, in his eighty-fifth year. A full obituary, with a bibliography of his most important scientific papers, will appear in the next issue of the *Scottish Naturalist*.

A NOTE ON THE DIPTERA AND COLEOPTERA ASSOCIATED WITH WRACK DEPOSITS ON THE ISLAND OF RAASAY

By SIMON HODGE

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Introduction

Wrack beds are accumulations of seaweed washed onto the upper shore either by high spring tides or during storms. The wrack usually persists on the shore until it is washed away by a subsequent storm or by the next high spring tide, and is commonly utilised by a number of detritivore species and their associated predators and parasites.

In Britain, the wrack fauna often contains a number of typical species of Diptera and Coleoptera which are specialised to exist in this unusual environment (see Egglshaw, 1965; Cheng, 1976 and references therein; Hodge and Jessop, 1996). This paper presents the results of an initial survey of the fauna of some wrack accumulations on the Hebridean island of Raasay.

Methods

The survey was carried out on the shore and the adjacent grassland in front of Raasay House (NG 546366) between 28th April and 2nd May 1996. The wrack present on the shore formed an obvious strand-line, approximately 0.5 metre wide and, at most, 30 cm deep.

Two methods of collecting insects were used:

Table 1. Summary of insects caught in wrack beds and near shoreline on Island of Raasay

	Hand samples	Pitfalls #1 (pooled)	Pitfalls #2			
			Shore	Wrack	Boundary	Lower Grassland Upper Grassland
DIPTERA						
Coelopidae	1	-	-	-	-	-
<i>Coelopa frigida</i> Fab. (W, B, E)						
Sepsidae	6	1	2	-	1	-
<i>Orygma luctuosum</i> Meig. (B, E)						
Sphaeroceridae	20	7	-	3	1	-
<i>Thoracochaeta zosterae</i> (Hal.) (W, B, E)						
Drosophilidae	-	1	-	-	-	-
<i>Drosophila subobscura</i> Collin						
Psychodidae	-	2	-	-	-	-
Unknown						
Mycetophilidae	-	1	-	-	-	-
Unknown						
COLEOPTERA						
Hydrophilidae	2	2	-	4	-	-
<i>Cercyon littoralis</i> (Gyll.) (W, B, E)						
<i>Megasternum obscurum</i> (Marsh.) (B)	-	3	-	-	-	-
Carabidae	5	2	-	-	-	-
<i>Agonum albipes</i> Kem. (W)						
<i>Nebria brevicollis</i> (Fab.)	1	-	-	-	1	-
<i>Pterostichus rhaeticus</i> Heer (B?)	-	-	-	-	1	-
Staphylinidae	2	-	-	-	-	-
<i>Creophilus maxillosus</i> (L.) (B, E)						
<i>Omalius laeviusculus</i> (Gyll.) (W, B, E)	1	10	-	4	-	-
<i>Quedius cinctus</i> (Payk.) (W, E)	-	-	-	-	1	-
<i>Quedius umbrinus</i> Er. (B)	-	-	-	-	3	-
<i>Thinobaena vestita</i> (Grav.) (W, B)	-	3	-	-	-	-

W = Wormell (1982) species found on the shore on the Island of Rhum.

B = Backlund (1945) species found in wrack beds in Scandinavia. (B? - possibly listed as *P. nigrita*)

E = Egglshaw (1965) species found in wrack beds on N.E. Coast of England.

(a) Insects were collected by hand, or by 'aspirating' using a portable car vacuum-cleaner [Black & Decker], on the strand-line and under rocks on the upper shore. Specimens collected were stored in 75% methylated ethanol.

(b) Pitfall traps (open end of 6.0 cm diameter) were placed out on two occasions; firstly (26/4/96) four pitfalls were placed in the shingle under the strand-line and the wrack material replaced, and secondly (27/4/96) five rows, approximately 3.0 metres apart, each consisting of five pitfalls, were placed out on the shore and adjacent grassland.

These five rows were thought to be representative of distinct ecological habitats present in the immediate shore area, as follows:

1. Shore: sand and shingle just above the average high-tide line.
2. Wrack: a strand-line of deposited seaweed material approximately 0.5 metre in width and 0.25 metre in depth.
3. Boundary: a sharp border region where the grassland and shore region came together. The grassland was raised approximately 0.75 metre above the shore and the subsoil had been eroded away by the sea. The gap between shore and grassland was filled with various wrack and flotsam material.
4. Lower grassland: a region of semi-improved grassland within 3.0 metres of the shore.
5. Upper grassland: the same grassland, 5.0-6.0 metres away from the shore.

75% methylated ethanol was placed in the pitfalls to act as a preservative. All traps were left in position for approximately 24 hours.

Results and Discussion

The captures of Coleoptera and Diptera are summarised in Table 1. Ninety-one specimens, belonging to sixteen species, were captured. No animals were captured on the grass fields above the shore. This was probably due to the short time the traps were left out in the field, and to the samples being taken early in the year for a site so far north (although the complete lack of Coleoptera in the catch was still considered to be unusual). Therefore, all the animals collected were taken from the shore or boundary habitats.

Three of the dipteran species captured, *Coelopa frigida*, *Oygma luctuosum* and *Thoracochaeta zosterae*, are considered to be wrack-bed specialists. *C. frigida* is often the dominant dipteran species in wrack beds in north-western Britain, so only capturing one specimen of this species was surprising.

Of the other Western Isles, *C. frigida* has been recorded from: Rhum (Wormell, 1982; Whiteley, 1994), South Uist (Waterston, 1981; Skidmore, 1994; Whiteley, Garland and Hancock, 1994), North Uist (Skidmore, 1994), Lewis, Barra, Flannan Isles (all Waterston, 1981) and Islay (Hodge, 1996). *Drosophila subobscura* was obviously a stray, and is thought to have been caught due to the fly being attracted to the alcohol in the pitfall trap.

Cercyon littoralis, *Thinobaena vestita* and *Omalium laeviusculum* are usually classified as typical wrack-bed species (Walsh, 1991) and the carabid *Agonum albipes* is also often associated with the shore (Lindroth, 1974).

These four species of beetle have previously been found on the shore amongst seaweed on the Island of Rhum, as has *Quedius cinctus* (Wormell, 1982). *Creophilus maxillosus* and *Megasternum obscurum* are generally associated with decaying organic matter (Harde, 1984) so their occasional presence amongst decomposing seaweed is not unexpected.

None of the species found is considered to be notable, although it is important to record their occurrence on Raasay since they were not mentioned in the previous surveys by Evans and Grimshaw (1916), Harrison (1937), Jackson (1955) and Garrard (1973).

We believe that the insect fauna of wrack beds tends to be generally understudied and that a more intensive sampling regime on Raasay, at different beaches and during the summer months, would reveal many further species. A further aspect of this system of current interest arises from the proximity of shore and terrestrial habitats (grassland and conifer woodland).

The identification of invertebrate assemblages which are characteristic of each specific habitat, those which are generalists and those which tend to occur at the habitat interfaces ('ecotones'; see Downie, Coulson and Butterfield, 1996) may also be worth further investigation.

Acknowledgements

We should like to extend our best thanks to all of the staff at the Raasay Outdoor Centre, and the staff and students who took part in the 1996 University of Sunderland field course.

References

- Backlund, H.O. (1945). The wrack fauna of Sweden and Finland. *Opuscula Entomologica*, Supplement V.
- Cheng, L. (Ed.) (1976). *Marine Insects*. Amsterdam: North-Holland Publishing Company.
- Downie, I.S., Coulson, J.C. and Butterfield, J.E.L. (1996). Distribution and dynamics of surface-dwelling spiders across a pasture-plantation ecotone. *Ecography*, 19: 29-40.
- Egglshaw, H.J. (1965). Observations on the fauna of wrack beds. *Transactions of the Society for British Entomology*, 16(8): 189-216.
- Evans, W. and Grimshaw, P.H. (1916). Notes on insects captured in the Island of Raasay. *Scottish Naturalist*, 1916: 299-300.
- Garrard, L.S. (1973). Notes on the natural history of Raasay and Scalpay. *Glasgow Naturalist*, 19: 7-11.
- Harde, K.W. (1984). *Beetles*. London: Octopus Books.
- Harrison, J.W.H. (Ed.) (1937). The natural history of the Isle of Raasay and of the adjoining islands of South Rona, Scalpay, Fladday, and Longay. *Proceedings of the University of Durham Philosophical Society*, 9: 246-351.
- Hodge, S. (1996). The occurrence of seaweed flies (Diptera: Coelopidae) on the Isle of Islay. *British Journal of Entomology and Natural History*, 9: 86.
- Hodge, S. and Jessop, L. (1996). Notes on Coleoptera found in wrack beds on the north-east coast of England. *Coleopterist*, 5: 7-12.
- Jackson, D.J. (1955). Further notes on beetles from the Island of Raasay and some Scottish records of Donaciinae. *Scottish Naturalist*, 1955: 34-39.
- Lindroth, C.H. (1974). Coleoptera: Carabidae. *Handbooks for the Identification of British Insects*, 4 (2). London: Royal Entomological Society.
- Skidmore, P. (1994). Composite list of Diptera in South Uist, Benbecula and North Uist in August 1989. *Dipterists Digest*, 14: 44-52.
- Walsh, G.B. (1991). Collecting-sample habitats. (Revised by J. Cooter). In: Cooter, J. (Ed.) *The Coleopterist's Handbook*. (3rd edition). Feltham: Amateur Entomologists' Society.

- Waterston, A.R. (1981). Present knowledge of the non-marine invertebrate fauna of the Outer Hebrides. *Proceedings of the Royal Society of Edinburgh*, **79B**: 215-321.
- Whiteley, D. (Ed.) (1994). A survey of Diptera on the Isle of Rhum - 1990. *Dipterists Digest*, **14**: 2-27.
- Whiteley, D., Garland, S.P. and Hancock, G. (1994). A survey of Diptera on South Uist and adjacent Outer Hebridean islands. *Dipterists Digest*, **14**: 32-43.
- Wormell, P. (Ed.) (1982). The entomology of the Isle of Rhum National Nature Reserve. *Biological Journal of the Linnean Society*, **18**: 291-401.

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MITES OCCURRING IN ANTS' NESTS IN LOCH ARD FOREST, NEAR ABERFOYLE

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Introduction

Little work has been carried out in Britain and Ireland on the Acari associated with ants and their nests since the publication in 1927 of Donisthorpe's *The Guests of British Ants*, which included a check-list of species. The mites listed in this present work were extracted mainly from the nests of six species of ants in Loch Ard Forest, near Aberfoyle, south-west Perthshire during 1994, either by hand sorting or by Tullgren Funnel. Five species of phoretic forms were removed from the body or legs of their hosts.

The main habitat of the study area is often wet, and comprises Sitka Spruce *Picea sitchensis* and some Scots Pine *Pinus sylvestris*, with Heather *Calluna vulgaris* and *Vaccinium* species as the dominant undergrowth. The ant *Leptothorax acervorum* occurred in slightly drier conditions than the other ant species. Seasonal sampling of the ants' nests suggested that the population density and species diversity of the mites decreased steadily from March to August. This probably reflects the population dynamics of the dominant soil fauna component of the nests. Population studies of forest soil mites, expressed as "total Acari", show peak densities during autumn and winter and a marked decline in May to August (Evans, Sheals and Macfarlane, 1961).

Nests of the following species of ants were sampled:

- (1) *Formica aquilona*
- (2) *Formica lemani*
- (3) *Myrmica scabrinodis*
- (4) *Myrmica sabuleti*
- (5) *Myrmica ruginodis*
- (6) *Leptothorax acervorum*

The number(s) following each taxon in the undernoted list of species refers to the nest/ant species in which the mite has been found. Numbers accompanied by an asterisk (*) refer to species occurring on the body of the ant, usually as a phoretic instar. The three species which are recorded as new to the British fauna, namely *Scutacarus ovideus* Karafiat, *Histiostoma formicarum* (Vitzthum) and *Histiostoma inchoatum* Mahunka, have been deposited in the collections of The Natural History Museum, London.

Systematic List

Subclass ACARI

Superorder PARASITIFORMES

Order MESOSTIGMATA

Family Ascidae

Proctolaelaps pygmaeus (Mueller) (1)

Family Laelapidae

Cosmolaelaps neocuneifer Evans & Till (1)

Holostaspis isotricha Kolenati (1*)

Holostaspis montana (Berlese) (1*)

Hypoaspis sp. deuteronymph (1), (5)

Family Parasitidae

Paragamasus vagabundus (Karg) (1), (5)

Family Trachyuropodidae

Oplites paradoxa (Canestrini & Berlese) (1)

Family Trematuridae

Trichouropoda spatulifera (Moniez) (1)

Superorder ACARIFORMES

Order PROSTIGMATA

Family Cheyletidae

Cheyletus eruditus (Schrank) (1)

Family Scutacaridae

Scutacarus ovideus Karafiat (4*)

Order ORIBATIDA

Family Achipteridae

Parachiptera willmanni v.d. Hammen (1), (2), (5), (6)

Family Ceratozetidae

Ceratozetes gracilis (Michael) (1)

Family Galumnidae

Acrogalumna longipluma (Berlese) (1), (3)

Pergalumna nervosa (Berlese) (1)

Galumnidae - Deuteronymph (1) and Tritonymph (1)

Family Nothridae

Platynothrus peltifer (C.L. Koch) (1), (2), (6)

Family Carabodidae

Carabodes marginatus (Michael) (1), (2), (5)

Carabodes minusculus Berlese (1), (5)

Odontocephus elongatus (Michael) (1), (6)

Family Cepheidae

Cepheus dentatus (Michael) (5)

Family Oppiidae

Oppia clavipectinata (Michael) (1)

Family Oribatulidae

Oribatula tibialis (Nicolet) (1)

Order ASTIGMATA

Family Acaridae

Forcellinia wasmanni (Moniez) (1*)

Family Histiostomatidae

Histiostoma formicarum (Vitzthum), (2*)

Histiostoma inchoatum Mahunka (4*)

Histiostoma sapromyzae (Dufour) (4*), (5*)

Discussion

The majority of the mite species collected from the ants' nests are soil-inhabiting forms commonly found in forest litter and humus. This is particularly true for the predominantly saprophytic Oribatida, with the exception of *A. longipluma* which is

chiefly myrmecophilous. Among the Mesostigmata, *P. pygmaeus* is a widely distributed species occurring in the nests of birds and mammals as well as in stored food products. It has broad feeding habits, including both prey and fungi in its diet. *O. paradoxa*, *T. spatulifera* and *C. neocuneifer* are myrmecophiles. The phoretic deuteronymphs of *T. spatulifera* attach to ants for dispersal. The British records of *Cosmolaelaps cuneifer* (Berlese) appear to be based on misidentifications and probably refer to *C. neocuneifer* (Evans and Till, 1966). The two species of *Holostaspis* were found on queen ants. According to Hughes (1959), *H. isotricha* is found amongst the egg-masses of *Formica* species, where it is considered to feed on secretions covering the eggs without harming them. Similar habits have been reported by Donisthorpe (1927) for a related species, *Holostaspis oophila* (Wasmann), which, after the ants' eggs have hatched, are found both on the bodies of queen ants and loose in the nests.

Females of *Scutacarus ovideus* were found attached by the strong claws of their first pair of legs to the body of *Myrmica sabuleti*. This appears to be the first record of the species in Britain. The four species of Astigmata are all represented by their non-feeding phoretic deuteronymphs (hypopodes) which attach to the cuticle of their hosts by means of postero-ventral suckers. *Histiostoma sapromyzarum* is a common and widespread species, and its deuteronymphs have been found on beetles and Diptera. *H. formicarum* was originally described from *Myrmica sulcinodis* in the Tirol, and *H. inchoatum* from "heath (*Calluna*) litter and soil (with part of *Formica* nest!)" at Körmend, Slovakia (Mahunka, 1968). Neither species has previously been found in Britain. *Forcellinia wasmanni*, on the other hand, is a relatively common species and Donisthorpe (1927) states that the "hypopi" (deuteronymphs) may "occur in such numbers in the ant's nests as to cause the destruction of the colony".

Acknowledgement

We are grateful to Dr. S. Mahunka, Budapest, for confirming our identification of *Histiostoma inchoatum*.

Note

Most unfortunately, Mr. Gordon Mackenzie, who was responsible for initiating this study and for collecting and sorting the Acari, tragically died before the submission of the manuscript for publication.

References

- Donisthorpe, H.S.J.K. (1927). *The Guests of British Ants: their Habits and Life-Histories*. (Chapter 14: Acarina, pp. 202-217). London: Routledge.
- Evans, G.O., Sheals, J.G. and Macfarlane, D. (1961). *Terrestrial Acari of the British Isles*. Vol. 1. London: British Museum (Natural History).
- Evans, G.O. and Till, W.M. (1966). Studies on the British Dermanyssidae (Acari: Mesostigmata). Part II. Classification. *Bulletin of the British Museum (Natural History) Zoology*, 14: 107-370.
- Hughes, T.E. (1959). *Mites or the Acari*. London: Athlone Press.
- Mahunka, S. (1968). Studies of the mite fauna of Hungary. I: (Acari). *Annales Historico-Naturales Musei Nationalis Hungarici. Pars Zoologica*, 60: 249-260.

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THE ROMANS AND STRATHCLYDE: THE ROAD SYSTEM

8. A Possible Roman Road via Dalmellington

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Introduction

From the upper Clyde to the Clyde estuary an ancient arterial route has been traced (Newall and Lonie, 1991a). The primary road, patently Roman, is dissected by cultivation rigs and drains of the eighteenth century and earlier, is overlaid by farmhouses and enclosures ranging from the mediaeval to the nineteenth century, and by a probably earlier round house. Travelling dykes cross or accompany the ancient route, and throughout its length it has attracted roads varying from mere tracks to mediaeval and later hollow ways, pre-eighteenth century trench-founded causeways, droving strips, and near recent communications.

During our surveys, local knowledge and traditions were gleaned from farmers and shepherds. From this emerges the vision of a thriving cattle industry in the west and south-west, yielding to a sheep-rearing economy, the main market for each being the Lanark Tryst.

Older men spoke of hog-droving in their boyhood or related by their fathers. In 1972 Mr. Cranston of Parkhead indicated that the Roman road at that time traced through his land, via Maidengill to Bodinglee, was an accepted drove pass in his youth. Polyangular hilltop enclosures south-east of Parkhead Hill, of Maidengill, and on the south-east shoulder of Bodinglee Law, "the last droving stop before Lanark", testify to the trade (Newall and Lonie, 1991a).

In 1973 Mr. James Latta of Glenmuirshaw mentioned his father's knowledge of a man who "in the old days" had spent four nights and four days in the hills, droving from Newton Stewart to Lanark via Carsphairn. In Mr. Latta's own locality, the droves passed over Niviston Hill, Auchtitench and Penbreck to run in

with the Roman-based complex on the approach to the Laird's Burn ford, NS 74002145.

At Dalgig the "Old Drove Gate" was indicated, and we heard of droving from there round Black Hill to White Hill with a road running up from the south by Tappet, Little Rigend and High Rigend hills. From White Hill, droves went eastwards by Carsgailoch and Carniven along the Roman line, while, from the north, a road ran in from the present Cairn road at Mossend by Mossback Bridge via Meikle Auchengisle. From the south-west, tracks by Stannery Knowe and Greengate Rig joined the system. In each case the connecting road was examined, but nothing obviously Roman was recorded. South of Rankinston, however, beyond a stretch of mineral road an apparently older road was seen mounding its way through rough pasture. This was followed south for a short distance.

Near Kilmein Hill a shepherd referred to the gathering of animals at Stair and Dalmellington for the Lanark drive, the last resting place being at Bodinglee. In particular he described the local drive from Dalmellington over Kilmein Hill, between Bow Hill (Cattle Hill) and Ewe Hill, towards Rankinston and by the Glen tributary of the Water of Coyle, i.e. the Howford Burn, going over the hill via Ravenscroft to run - again along the Roman road - through the farmlands of Old Polquhairn, Piperhill and Auchincloigh. The road from Dalmellington to Rankinston he actually referred to as "the bridle road to Littlemill"!

An Echo was Sounding Loudly

"Departing from Dalmellington, for two miles it forms what is called the bridle road to Littlemill. It then strikes off from the Littlemill way, in the farm of Burnhead, and passes through Chapmeknows, Pennasson, Smithston, and Cube" (Macdonald, 1893: 418, citing Chalmers, 1824, Volume 3: 448-449). The road then ran through Borland and over Mains Hill, passing Causeway, Percluan Mill, Brae, Lindsayston, Cockhill and Whitestones, possible to connect with the Foul Causeway in Ayr. This was the old Ayr-Dalmellington road, at one time held to be Roman until convincingly discredited by Macdonald (1893).

North of Cockhill, Castlehill and Forehill were in line. Smith (1895: 160) recorded that from south-east of Castlehill to near the farm steading of Breston the road remained in splendid preservation and was 11 feet overall, bordered by a row of boulders on each side and paved or causewayed with small stones.

Macdonald (1893: 423-424) sectioned the road at Smithston and showed it to comprise a "shallow trench, 10 feet 7 inches or so in breadth". Large kerbstones

lined the sides to retain a "bottoming" of large stones, over which a covering of smaller stones was capped "with gravel, to a depth of 4 or 5 inches".

At Burnhead, the last remnants of the road were raised, c. 1830. It was 10 to 11 feet wide between boulder kerbs, and of small stones. So from Castlehill, Ayr, to Burnhead, Dalmellington the description of the road is consistent and non-Roman. But what of the evidence to the south, beyond the departure from the bridle road to Littlemill? The truth should lie in the vicinity of Burnhead. This we resolved to examine.

In view of the mention of Lachtalpin as a toll point in the 1202 charter of the Royal Burgh of Ayr, Burnhead was approached via Laight Alpin Castle, NS 45000889. No through road was found close to the castle, but the place name extends to Laight and Laight Cottage further south, which lie nearer to the early road-line. Indeed if this is the Lachtalpin of the thirteenth century, for it is difficult to accept the southern attribution (Reid, 1960: 133-134) on grounds of distance, the known independence of the Lords of Galloway, and the possibility of Wigtown having been a royal burgh before the thirteenth century, then it confirms a road to Ayr earlier than that recorded above.

At the castle site a slightly scarped motte might be postulated, perhaps of the twelfth or thirteenth century. Occupation earth beneath the latest rampart on the north yielded several fourteenth-fifteenth century sherds, while beneath the latest ramparts lie traces of earlier dykes, perhaps of a clay castle. In the latest phase a tower house was incorporated (Lonie and Newall, 1974).

The Road

Since the road diverges little from the Littlemill road this report should be read in tandem with the Ordnance Survey 1: 25 000 maps NS 40 and NS 41. For mapped detail south of Burnhead see Hothersall (1989: 6, Figure 4).

At Burnhead the farmer stated that the early road north from his farm, already separated from "the old Ayr road", had run towards Rankinston, but turned off for Ravenscroft via the Howford Burn glen, passed by Auchincloigh and ran by the north of New Cumnock to Bodinglee for Lanark. The Dalmellington droves used this line, some coming up from Carsphairn. Others joined in "from north of Kirkconnel, up the glen" a route now known to have followed a Roman road (Newall and Lonie, 1991b and 1992; 1995: 107-111).

Running S.S.E. from Burnhead farmhouse, a hollow way with upcast kerbstones lying along the sides, presumably the remains disturbed c. 1830, can be traced towards the Dunaskin Burn, which it fords just west of the present bridge. At the crossing approach there is the suspicion of a broad levelled mound alongside. As the hollow way rises from the ford to run south-east, the mound develops clearly along its north side. Within 100 feet (30.48 m) the hollow way has cut through to run parallel with it just south of the modern road to Dalmellington. The hint of a reduced mound continues, but in 1974, at the close of a long day in which research was concentrated to the north of Burnhead, this was not followed closely, although a length of hollow way was mapped crossing Hare Craig, NS 47000800, as it changed direction towards Sillyhole, clearly cutting through a 24 feet (7.32 m) wide mound. Thereafter the mound faded to the ghost of a camber.

North of Burnhead

To the north of Burnhead the hollow way has been levelled and re-used as a mineral line. To the east, for a short distance northwards a broad low mound was traced through heath until obliterated by open-cast workings. Beyond these, as it follows the east bank of the Burnhead Burn, secondary metalling - the latest surface of the Littlemill bridle track - is present. Profiles at NS 45600928 and NS 45580940 are respectively 22 feet 4 inches (6.8 m) and 24 feet 6 inches (7.4 m) overall. Where the west side has been eroded, the metal is clearly seen to have been set into a lower mound and to be only 15-16 feet (4.58 - 4.88 m) wide. Occasionally the edge of the metal is distinct and sharply scarped.

At the Burnhead Burn, where traffic has formed a deep cutting, cobbled on the south bank but reduced to rock bottom on the north, all traces of camber have been eroded, but 2.0 feet 7 inches (0.8 m) above the base of the 18 feet (5.49 m) wide cutting on the south bank, the shoulders of the earlier road-flanks survive. On the opposite bank, beyond the bedrock exposure the cutting rises to a flat metalled surface 18 feet (5.49 m) across, NS 45600948. Beneath, the stream is excising a lower stratum of small stones in iron-pan impregnated grey clay.

At NS 45500975 the Lethanhill-Benquat road crosses from east to west. Almost certainly a nineteenth century mineral way, this cuts through the underlying road mound on each side to effect a neat junction with the upper metalling which, in view of the comparative overburden, is probably little earlier, and in its course connecting the industrial centres of Chalmerston and Rankinston, was also probably resurfaced as a mineral way. The earlier road mound is also cut along the east side by agricultural rigs, which are limited by the 15 feet (4.58 m) wide later

road. Just beyond the junction, the entire system has been removed by a deep cutting.

To the north the overall width appears to decrease from 24 feet 8 inches (7.5 m) to 23 feet 8 inches (7.2 m), NS 45430980. Inspection reveals that the secondary road surface is flanked on the west by a stone boundary wall, a nineteenth century feature which gradually edges closer to it. The edge of the primary road beyond this provides a consistent width of 29 feet (8.84 m).

At its closest approach to the Burnhead Burn before it flows to the east, NS 45351025, the road changes direction abruptly from north to N.N.W. to run straight for the narrow col, deepened by cutting, between Kilmein Mount and a rise to the west. Over this stretch of some 400 yards (356.5 m) it forms the parish boundary, which has been deflected sharply to follow the road line. Approaching the cutting, the primary mound is distinct and 36 feet (10.97 m) wide, crested by a 10 feet 9 inches (3.28 m) metal strip. The cutting reduces all to 27 feet 7 inches (8.4 m) and the mound is erased by traffic, but to the north, NS 45151085, it rises, 31 feet (9.45 m) wide, with the metalled road, 13 feet (3.96 m) wide, now running along its east side. A 4.0 feet (1.22 m) wide ditch has now developed along the west side.

Just south of this point, close to the west side is a circular green mound 3.0 feet 5 inches (1.0 m) high and 33 feet (10 m) in diameter. A minor stream curves round the south side. Slight hollowing follows the east and west sides, while round the south arc is a curvilinear dark crop mark. The minor stream issues from a culvert beneath the secondary road. The outflow has washed out part of the mound, and slippage provides a partial section of the metalled road, showing it to consist of compacted stones with smaller metal on top and to be 8.0 inches (20 cm) thick. The mound beneath is of sandy grit in grey clay laid directly on yellow clay and shale subsoil.

North of Kilmein Mount, the road deflects to head for the gap between Bow Hill (Cattle Hill) and Ewe Hill, keeping to the east side of Bow Burn. An ancient turf dyke crosses from Bow Hill to the foot of Barn Hill, NS 44931207. The present road gap in this boundary is c. 42 feet (12.8 m), but the dyke ends are disturbed. To the east there is erosion by a minor stream; to the west a boulder protruding from the primary road mound may be dyke bottoming. If so, the dyke may have partly crossed the road to leave a narrow gap for later traffic. Without excavation the point is non-proven.

Clear of the dyke, at a point where, leaving the Bow Hill-Barn Hill pass, it is possible to sight past the spur of Ewe Hill, NS 44951210, the road deflects abruptly from N.N.W. to N.N.E. towards Ravenscroft. At NS 45131250, a mineral road from Bow ironstone pits on the west runs in to overly the complex, and within a short distance, at NS 45221262, the road switches to slightly west of north towards Rankinston. To the immediate east lie the Rankinston ironstone pits.

Just south of the Rankinston stretch, double culverting is present, the upper relating to the 10 feet (3.05 m) Bow Hill track, the lower to the heavy stone bottoming of the earlier metalled road from the south. Of the primary road there is no trace. Had it been intended for Rankinston, there would have been need for neither deflection. It is much more probable that the abrupt twitch towards Ravenscroft is that of the primary road, that towards Rankinston marking the line of "the bridle road to Littlemill" (Chalmers, 1824) where, having followed the earlier mound as far as was convenient, it headed for its destination.

That the earliest road was pre-eighteenth century is patent. Its relationship to the old Ayr-Dalmellington road would render it much earlier, while the dissected, reduced, obliterated lengths east and south of Burnhead are indications of antiquity. In built and characteristics it follows the Roman mould.

South of Burnhead

In 1987, in view of proposed extensive open-cast coal mining in the area south of Burnhead, an intensive field survey was conducted by the Association of Certificated Field Archaeologists (A.C.F.A.). The Association's chairman, Mr. Ian Marshall, invited Frank Newall to re-examine the early road with him. This allowed a closer inspection of the remains to the south of Burnhead. The results of the Marshall-Newall 1988 survey are summarised in the A.C.F.A. report on the area (Hothersall, 1989: 5-7). Here we conclude with the more detailed account provided for the Primary Archive (held by the National Monuments Record of Scotland, at R.C.A.H.M.S.) by Ian Marshall.

Ancient Road - Burnhead Farm to Caldwell's Glen

A faint terrace located to the E.S.E. of Burnhead Farm was measured at NS 45870908 and at NS 45950895, and was found to measure 7.32 m at both points. This terrace aligns with the cambered road mound detected by W. Lonie and F. Newall in 1974 to the north of the spoil heap which crosses its

projected path and which was measured at NS 456093 (6.8 m) and at NS 456094 (7.4 m).

This line establishes the earliest road, east of the "Littlemill Bridle Way" which runs over it further to the north; and east of the later secondary metalled upper layer of the same; and east of the branch road to Ayr, later re-used in part by a mineral track.

At every point subsequently checked, this road appears to be the earliest.

A much dissected length of mound south-east of the Dunaskin Burn, NS 46080890 - NS 46130885, was cut by the later hollow way. Across the kink in the present road, NS 46450855 - NS 46500850, the hollow way is a shallower broader track cutting alongside the earlier road mound. This broad low mound was traced from NS 46560845 to NS 48700832, where it gradually develops into the head dyke which runs across the moors to the east, and in so doing not only adopts the early road line for some distance as a boundary, but eventually runs across it, to be itself cut by the later road. In 1974 a trace of the hollow way was detected crossing the Hare Craig at NS 470080 and in 1988 the broad road mound cutting along the west side of the present road, c. NS 47080810 - NS 47100795, was recorded avoiding the last extreme turn south at the head of Caldwell's Glen.

On comparing the land usage on each side of the glen, it was noted that on the east side the glen ravine itself was the boundary with dykes running to the edge, while to the west the earliest mounded road was the boundary. All field systems seem to lie to the south and west of it, and the banks which bound them seem to follow a course dictated by the road line. Despite the reference to the possible power of parsimonious landlords in the report which summarises the 1988 survey (Hothersall, 1989: 7), it must be remembered that the old Ayr-Dalmellington road, i.e. the secondary not the primary road, was being taken up in different localities, and with the enterprise and direction of local landowners, from 1755 until 1835-1840.

The Hole (Siliyhole) is also significant, especially in this district, for while care has to be taken with "hole" names, which might refer to natural features such as caves or hollows, in many cases it is the Old Welsh "heol" (or "road") which is the origin. Holehouse, to the north, lies beside the main Roman road heading for the crossing of the River Doon. Holehouses are generally road-houses, and many lie along Roman roads. It does not follow that they indicate Roman roads, but they certainly indicate very early roads.

Thus, while we would not wish to restore the status of 'Roman Road' to this section of our road, it must be noted that it does appear to be the earliest feature in the area, and that at 24 feet (7.3 m) it conforms with the commonest width of cambered Roman hill road mounds. It would also appear that, at an early date, it was a skilfully engineered major road, and that it follows known Roman practice in its direct ascent of the Caldwell's Glen to establish an early contoured route towards at least Rankinston as quickly as possible. Through Rankinston passes the Roman east-west road towards the Holehouse mentioned above, this area, unfortunately, being pitted with mineral workings and their upcast.

We would thus be content with 'Ancient Road, possibly of Roman Origin' at present. It should be noted that on the earliest Ordnance Survey maps of the area, two lengths of 'Roman Road' are shown passing through by Bellsbank to the south of Dalmellington and there is obviously some scope for fieldwork to be done on this some day.

Addendum

Since this 1989 report, the lengths of so-called 'Roman road' in the Bellsbank area, south of Dalmellington, have been examined by F. Newall and W. Lonie. They show no signs of Roman structure and, with a small-stone surface largely of water-rolled pebbles, are probably remnants of the Ayr-Dalmellington system of the eighteenth century and earlier. Doubtless they were familiar to John Loudoun Macadam during his stay at nearby Craigengillan.

Beyond Bellsbank, from Pennyarthur farm the east road runs south as the old coach road. This has been investigated near Loch Doon, again without any Roman indicators having been recognised. In view, then, of the reference to droving via Carsphairn, it may well be that research will require to concentrate on the moors to the south-east of Dalmellington.

References

- Chalmers, G. (1824). *Caledonia*. Volume 3. Edinburgh.
- Hothersall, S. (Ed.) (1989). *An Archaeological Field Survey at Chalmerston, Dalmellington, Cumnock and Doon Valley District, Strathclyde Region*. Association of Certificated Field Archaeologists. Occasional Paper No. 1. Glasgow University.

- Lonie, W. and Newall, F. (1974). Ancient road: Laight Alpin Castle. *Discovery and Excavation in Scotland*, 1974: 26-27.
- Macdonald, J. (1893). Notes on the "Roman" roads of the one-inch Ordnance map of Scotland. 2. The Ayrshire road. *Proceedings of the Society of Antiquaries of Scotland*, 27: 417-432.
- Newall, F. and Lonie W. (1991a). The Romans and Strathclyde: the road system. 4. Loudoun Hill and the Southern Uplands Boundary Fault frontier. *Scottish Naturalist*, 103: 113-150.
- Newall, F. and Lonie W. (1991b). Roman road and ring ditch site. *Discovery and Excavation in Scotland*, 1991: 15.
- Newall, F. and Lonie W. (1992). Roman road and ring ditch site. *Discovery and Excavation in Scotland*, 1992: 23.
- Newall, F. and Lonie W. (1995). The Romans and Strathclyde: the road system. 6. The Nith Valley roads. Part 1. The Roman system. *Scottish Naturalist*, 107: 85-115.
- Reid, R.C. (1960). More notes on Roman roads. *Transactions of the Dumfriesshire and Galloway Natural History and Antiquarian Society*, 37(3rd series): 123-135.
- Smith, J. (1895). *Prehistoric Man in Ayrshire*. London.

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SHORT NOTES

WATER SHREW IN AYRSHIRE

On 2nd May 1996 my wife and I watched a cat playing with a dead shrew near the harbour at Dunure, Ayrshire. The cat fairly soon abandoned the shrew, without making any attempt to eat it, whereupon we went across to examine the specimen and found it to be a freshly killed adult Water Shrew *Neomys fodiens*.

Although the distribution of the Water Shrew in the West of Scotland has become increasingly well-known during the past half century (*Glasgow Naturalist*, 19: 264-265), this record is from the 10-km square NS 21, for which recent confirmation was requested in the current distribution map given in the *Atlas of Ayrshire Vertebrates* (1984).

J.A. Gibson

WATER SHREW IN COWAL, ARGYLL

On 18th May 1996 I found a dead specimen of the Water Shrew *Neomys fodiens* in Dunans Estate, near Glendaruel, Cowal, Argyll. The specimen was fairly fresh, and was an unexpected discovery during a botanical expedition to Dunans Estate to visit what is considered by the Forestry Commission to be the largest tree in the British Isles, a Douglas Fir *Pseudotsuga menziesii* which measures 212 feet (*Champion Trees in the British Isles*, Technical Paper No. 7, 1994).

This specimen of the Water Shrew was found in the 10-km square NS 09, which is an addition to the *Atlas of Cowal Vertebrates* (1980).

J.A. Gibson

PINE MARTENS IN SOUTH ARGYLL

During the past five years an increasing number of reports have reached me, in my capacity as Clyde Area Recorder for the Mammal Society, of possible sightings of the Pine Marten *Martes martes* in south Knapdale, Argyll.

Although formerly present as far south in Argyll as Kintyre until about the 1870s (Gibson and Colville, 1975), the Pine Marten was considered to be virtually extinct in the Clyde area by the turn of the century (Gibson, 1976). During the past few decades, however, several isolated but authentic occurrences have been recorded in mid-Argyll, south of Loch Awe, with the occasional sighting further south.

During the early summers of 1995 and 1996 I had the good fortune to have several excellent sightings of adult Pine Martens in south Knapdale, in the 10-km squares NR 87 and NR 86, and I understand that there have also been several additional sightings in this area, so the exact localities are not being disclosed at the moment.

At present these apparently represent the most southerly records of Pine Martens in Argyll this century, and although as yet there is no indication that the Pine Marten has crossed the narrow isthmus at Tarbert into Kintyre, hopefully this extension will not be too long delayed.

Needless to say, I shall be very grateful to receive any additional information.

Gibson, J.A. (1976). Land mammals of the Clyde faunal area. *Glasgow Naturalist*, 19: 259-301.

Gibson, J.A. and Colville, D. (1975). The mammals of Kintyre. *Western Naturalist*, 4: 1-28.

J.A. Gibson

LESSER RORQUAL STRANDED ON THE ISLAND OF BUTE

On Saturday 19th October 1996 a specimen of the Lesser Rorqual *Balaenoptera acutorostrata*, some 16 feet long, was stranded at Scalpsie Bay, Island of Bute. The whale first came ashore at Ardsalpsie (NS 054583) on the afternoon of 19th October, and a detailed description of the strenuous efforts made locally to save the whale over the next 24 hours appeared in the *Buteman* of

Friday 25th October 1996. Several times the whale was refloated and swam off towards the open water, but each time it turned to its left and headed back ashore.

Eventually, on the evening of Sunday 20th October, the whale was obviously showing signs of increasing distress and was humanely killed by the local veterinary surgeons, Mr. Duncan McIntyre and Miss Rhona Campbell, who had been in attendance throughout most of the previous 24 hours.

Since the drugs used in the lethal injection are potentially dangerous, the whale was then temporarily removed to safe custody in Rothesay slaughter-house, prior to a later post-mortem in Dunoon by the Inverness Veterinary Investigation Laboratory, although at the time of writing no results of the post-mortem are yet to hand.

The Lesser Rorqual has undoubtedly been increasing in the Clyde sea area within recent years (see Gibson, 1995), but to the best of my knowledge this is the first stranding recorded for the Island of Bute.

Gibson, J.A. (1995). Increase of the Lesser Rorqual in the Clyde faunal area. *Scottish Naturalist*, 107: 71-73.

J.A. Gibson

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