# CHAPTER 36

## Insect remains

*by Mark Robinson*

# 36 Insect remains

*Mark Robinson*

Excavation on the MTCP site (BAAMP00) discovered a Middle Bronze Age ring ditch which surrounded the much eroded remains of a round barrow. The ditch contained waterlogged organic sediment above the primary silting. There are examples known of round barrows in the Fenlands of East Anglia which were engulfed in peat as a result of a rising water table long after their abandonment. However, it is most unusual for a barrow ditch to contain waterlogged sediments likely to have been contemporaneous with the use of the monument. Therefore, extensive bulk sampling was undertaken for waterlogged biological remains, including insects. Assessment identified those samples with good potential for full analysis and showed a general similarity between the range of insects present in those samples with better preservation. It was therefore decided to analyse a single sample from context 320117, feature 324078, in detail. The waterlogged sediments were provisionally dated to the Middle Bronze Age.

## Methods

A sample of 10 litres was washed over onto a 0.25 mm mesh to recover organic material. The organic fraction was subjected to paraffin flotation to extract insect remains. The paraffin flot was washed in detergent and sorted in water with the aid of a binocular microscope for insect fragments. Specimens were identified by comparison with reference material at magnifications of up to x100.

## Results

The results are given in Table 36.1 for Coleoptera (beetles) and Table 36.2 for other insects. The tables record the minimum number of individuals represented by the fragments identified from the samples. Nomenclature follows Kloet and Hincks (1977). The Coleoptera have been analysed by species group in Figure 36.1 after Robinson (1991, 278-81).

## The origin of the assemblages and conditions in the ditch

The organic deposit in the ditch accumulated under water. The insects from it could be divided into aquatic and marginal species which lived in the ditch and terrestrial species which had entered the ditch from the surrounding landscape. There was no evidence that human activity, for example the dumping of refuse, had imported insects to the ditch. The assumption advanced in Robinson (1991, 316) has been followed that of the order of 50% of the terrestrial Coleoptera that reached the deposits by natural agencies had their origin within 50 m of the ring ditch.

Water beetles comprised around 20% of the total Coleoptera. They were all species characteristic of smaller bodies of stagnant water. *Helophorus* cf. *brevipalpis* was the

most abundant but there were several examples of *Hydrobius fuscipes*, which tends to favour stagnant water above a bed of organic debris. The occurrence of six individuals of the minute weevil *Tanysphyrus lemnae* suggested that its host plant, *Lemna* sp. (duckweed), covered the surface of the water in the ring ditch. Cyperaceae (sedges), the host plants of *Plateumaris sericea*, perhaps grew in the ditch although it is possible that this leaf beetle had flown in from vegetation alongside the nearby river channel. Some of the aquatic beetles were amphibious species, such as *Coelostoma orbiculare* and these, along with a few beetles of wet mud or dead waterside vegetation, such as *Lesteva longoelytrata* and *Platystethus cornutus* gp., probably lived on the sides of the ring ditch. However, there were few insects of marsh habitats, suggesting an abrupt transition to the terrestrial environment.

## The setting of the ring ditch

The terrestrial insects were almost entirely species which can occur in, or are dependent upon, grassland habitats. The wood and tree-dependent beetles of Species Group 4 only comprised 1% of the terrestrial Coleoptera (Fig. 36.1), suggesting a very open landscape. The only members of this group present were *Melanotus erythropus*, which occurs in very rotten wood and *Grynobius planus*, which bores into drier dead wood.

Members of Species Group 11, chafer and elaterid beetles with larvae which feed on the roots of grassland plants, were particularly abundant, comprising 21% of the terrestrial Coleoptera. This value was particularly high for an archaeological assemblage. The most numerous species were *Phyllopertha horticola* and *Agrypnus murinus* but other members of this community included *Hoplia philanthus*, *Agriotes lineatus* and *A. sputator*. The high percentage of this species group was perhaps because grassland extended to the very edge of the ring ditch. The strong presence of *A. murinus* would suggest well-drained permanent turf. Grassland vegetation was also implied by the majority of the leaf beetles and various of the weevils. The leaf beetles *Hydrothassa glabra* and *Crepidodera ferruginea* respectively feed on *Ranunculus* spp. (buttercups) and grasses. Together they comprised 5% of the terrestrial Coleoptera. The vetch and clover-feeding weevils of the genera *Apion* and *Sitona*, which make up Species Group 3, were, at 3% of the terrestrial Coleoptera, not sufficiently numerous as to indicate the presence of meadowland or tall uncut grass but at an appropriate abundance for pastureland. Weevils which feed on *Plantago lanceolata* (ribwort plantain), another grassland plant, such as *Ceuthorhynchidius troglodytes*, were also present. The most numerous species of ground beetle, *Calathus fuscipes* and *C. melanocephalus*, favour grassland habitats, unless very closely grazed, while various of the rove beetles, such as *Xantholinus linearis* or *longiventris* and *Staphylinus olens*, often occur in grassland. One of the species of ground beetle, *Pterostichus niger*, is now more usually associated with woodland habitats than grassland in Southern England. (Under the cooler and more humid conditions of Northern England, it readily occurs in grassland). However, it appears to have been living in grassland at Silbury Hill during the Neolithic (Robinson 1997, 43) and at Runnymede during the Late Bronze Age (Robinson 1991, 322). The ants included workers of *Lasius flavus* gp., the mound-building yellow ant of grassland.

The occurrence of dung beetles showed that the grassland was being grazed. The scarabaeoid dung beetles of Species Group 2, which feed on the droppings of medium-to-large-sized mammals, especially domestic animals on pasture, comprised 12% of the terrestrial Coleoptera. Such a value would be typical for pasture away from an area in which stock was concentrated (Robinson 1991, 278-80). The majority of these beetles were *Aphodius* cf. *sphacelatus* but other species of *Aphodius*, *Geotrupes* sp. and *Onthophagus* spp. were also present. There was a single example of *O. taurus*, which is now extinct in Britain, although it does still occur in the Channel Islands and parts of mainland Europe, including Belgium and Northern France (Jessop 1986, 26; Paulian 1959, 88-9). There are several Neolithic and Bronze Age records of *O. taurus* from England (Robinson 1991, 320; Robinson 1992). Its former occurrence in Britain could have been a reflection of climatic conditions being slightly warmer than those of the mid 20$^{th}$ century AD or could have been due to pasture on fertile, well-drained soils being less likely to experience episodes of deep cultivation than at present (its larvae develop in subterranean tunnels stocked with dung). Beetles of more general foul organic material including dung, which belong to Species Group 7, were, at 4.5% of the terrestrial Coleoptera, about as abundant as might have been expected given the proportion of Species Group 2. The most numerous member of this group was *Megasternum obscurum*.

The insects did not suggest any other major habitats in the vicinity of the ring ditch. There was a single specimen of *Heterogaster urticae*, a bug which feeds on *Urtica dioica* (stinging nettle). However, the leaf beetles and weevils which tend to be associated with weeds of arable land and disturbed ground, such as *Phyllotreta* spp. and various Ceuthorhynchinae, were poorly represented. There were no woodworm beetles (Species Group 10) to suggest the proximity of timber structures and other insects associated with human habitation were absent.

## Conclusions

The insects suggest that the barrow ring ditch held stagnant water covered with duckweed and was set amidst pasture being grazed by domestic animals. Human settlement appeared to have been absent from the vicinity of the barrow. Although there was a single example of the extinct scarabaeid dung beetle *Onthophagus taurus*, the beetle assemblage did not contain the high proportion of individuals of the genus *Onthophagus* that characterises some assemblages from towards the end of the Middle Bronze Age (Robinson 2006). The terrestrial component of the insect assemblages shows some similarity to the assemblage of Late Neolithic date from beneath Silbury Hill, Wiltshire (Robinson 1997). Despite their disparity in size, both were ceremonial monuments set amidst grassland whereas most other insect assemblages which have been studied of Neolithic to Bronze Age date have been from fen peats, palaeochannel sediments or settlement sites.

*Table 36.1: Coleoptera from the Bronze Age Ring Ditch on the MTCP site (BAAMP00)*

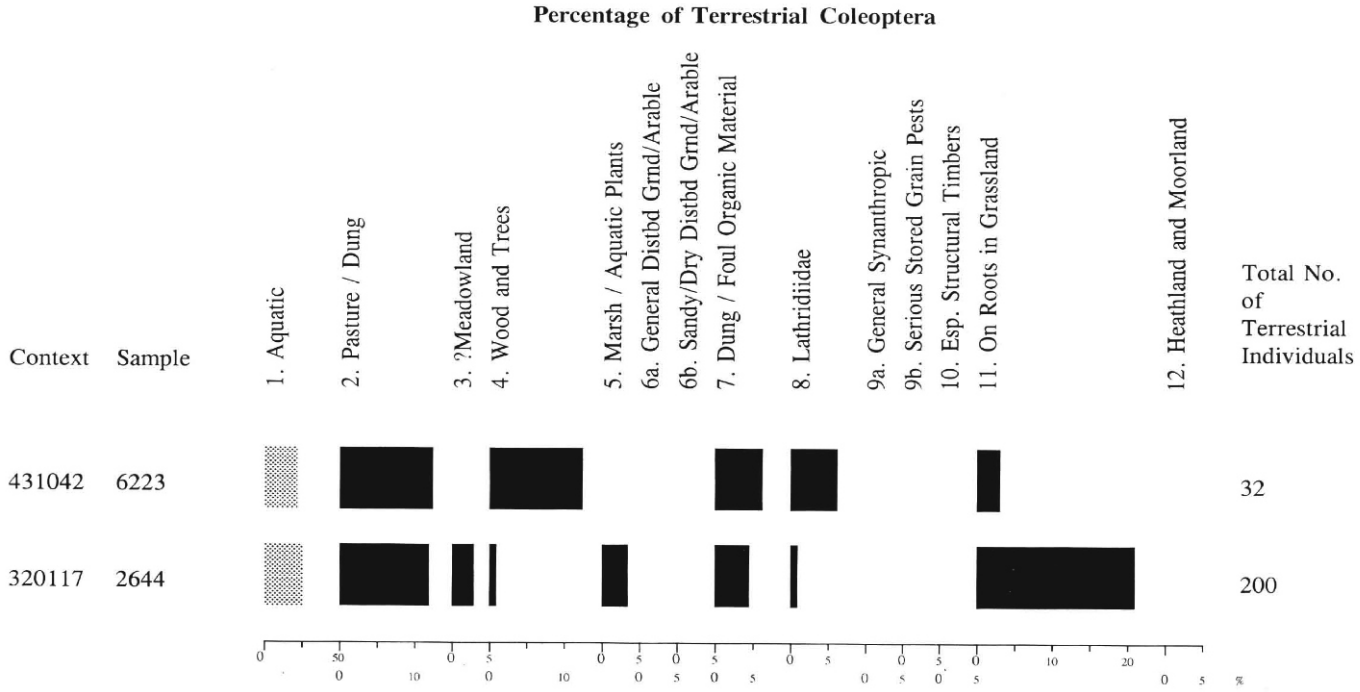
| | Context 320117<br>Sample 2644<br>Sample vol (litres) 10 | Min no of individuals | Species Group |
|---|---|---|---|
| *Carabus violaceus* L. | | 1 | |
| *Loricera pilicornis* (F.) | | 1 | |
| *Clivina collaris* (Hbst.) or *fossor* (L.) | | 1 | |
| *Trechus obtusus* Er. or *quadristriatus* (Schr.) | | 2 | |
| *Bembidion lampros* (Hbst.) or *properans* (Step.) | | 1 | |
| *B. guttula* (F.) | | 2 | |
| *Pterostichus anthracinus* (Pz.) | | 1 | |
| *P. cupreus* (L.) | | 1 | |
| *P. niger* (Sch.) | | 1 | |
| *P. melanarius* (Ill.) or *niger* (Sch.) | | 1 | |
| *P. nigrita* (Pk.) | | 1 | |
| *P. cupreus* (L.) or *versicolor* (Sturm) | | 1 | |
| *Calathus fuscipes* (Gz.) | | 4 | |
| *C. melanocephalus* (L.) | | 6 | |
| *Agonum* sp. | | 1 | |
| *Amara* spp. | | 3 | |
| *Dromius linearis* (Ol.) | | 1 | |
| *Haliplus* sp. | | 1 | 1 |
| *Hydroporus* sp. | | 1 | 1 |
| *Agabus bipustulatus* (L.) | | 3 | 1 |
| *Agabus* sp. (not *bipustulatus*) | | 1 | 1 |
| *Colymbetes fuscus* (L.) | | 1 | 1 |
| *Dytiscus* sp. | | 1 | 1 |
| *Helophorus aquaticus* (L.) | | 3 | 1 |
| *Helophorus* spp. (*brevipalpis* size) | | 27 | 1 |
| *Coelostoma orbiculare* (F.) | | 1 | 1 |
| *Sphaeridium bipustulatum F.* | | 1 | |
| *S. lunatum* F. or *scarabaeoides* (L.) | | 1 | |
| *Cercyon* spp. | | 1 | 7 |
| *Megasternum obscurum* (Marsh.) | | 5 | 7 |
| *Hydrobius fuscipes* (L.) | | 3 | 1 |
| Histerinae indet. | | 1 | |
| *Ochthebius* cf. *minimus* (F.) | | 6 | 1 |
| *Hydraena testacea* Curt. | | 1 | 1 |
| *Hydraena* sp. (not *testacea*) | | 1 | 1 |
| *Ptenidium* sp. | | 2 | |
| *Nicrophorus humator* (Gled.) | | 1 | |

| Context 320117<br>Sample 2644<br>Sample vol (litres) 10 | Min no of individuals | Species Group |
|---|---|---|
| *Silpha tristis* Ill. | 1 | |
| *Lesteva longoelytrata* (Gz.) | 3 | |
| *Carpelimus* cf. *corticinus* (Grav.) | 1 | |
| *Platystethus cornutus* gp. | 1 | |
| *Anotylus rugosus* (F.) | 1 | 7 |
| *A. sculpturatus* gp. | 2 | 7 |
| *Stenus* spp. | 5 | |
| *Lathrobium* sp. | 1 | |
| *Rugilus* sp. | 1 | |
| *Xantholinus linearis* (Ol.) or *longiventris* Heer | 4 | |
| *Philonthus* spp. | 3 | |
| *Staphylinus aeneocephalus* Deg. or *fortunatarum* (Wol.) | 1 | |
| *S. olens* Müll. | 1 | |
| *Tachyporus* spp. | 1 | |
| *Tachinus* spp. | 2 | |
| Aleocharinae gen. et sp. Indet. | 4 | |
| *Geotrupes* sp. | 1 | 2 |
| *Aphodius ater* (Deg.) | 1 | 2 |
| *A. pusillus* (Hbst.) | 1 | 2 |
| *A. rufipes* (L.) | 1 | 2 |
| *A.* cf. *sphacelatus* (Pz.) | 9 | 2 |
| *Aphodius* sp. | 1 | 2 |
| *Onthophagus ovatus* (L.) | 3 | 2 |
| *O. taurus* (Schreb.) | 1 | 2 |
| *Onthophagus* sp. (not *nutans*, *ovatus* or *taurus*) | 1 | 2 |
| *Hoplia philanthus* (Fues.) | 5 | 11 |
| *Phyllopertha horticola* (L.) | 18 | 11 |
| *Cetonia aurata* (L.) | 1 | |
| *Byrrhus* sp. | 2 | |
| *Dryops* sp. | 1 | 1 |
| *Melanotus erythropus* (Gm.) | 1 | 4 |
| *Agrypnus murinus* (L.) | 8 | 11 |
| *Athous haemorrhoidalis* (F.) | 2 | 11 |
| *Actenicerus sjaelandicus* (Müll.) | 1 | |
| *Agriotes lineatus* (L.) | 5 | 11 |
| *A. sputator* (L.) | 3 | 11 |
| *Agriotes* spp. | 1 | 11 |
| *Cantharis* sp. | 1 | |
| *Grynobius planus* (F.) | 1 | 4 |
| Cryptophagidae gen. et sp. indet. (not Atomariinae) | 1 | |
| *Atomaria* spp. | 3 | |
| *Olibrus* sp. | 2 | |
| *Coccinella septempunctata* L. | 1 | |
| Corticariinae gen. et sp. indet. | 2 | 8 |
| *Plateumaris sericea* (L.) | 1 | 5 |
| *Chrysolina* cf. *graminis* (L.) | 1 | |
| *Gastrophysa viridula* (Deg.) | 2 | |
| *Hydrothassa glabra* (Hbst.) | 5 | |

| | Context 320117<br>Sample 2644<br>Sample vol (litres) 10 | Min no of individuals | Species Group |
|---|---|---|---|
| *Phyllotreta vittula* Redt. | | 2 | |
| *Longitarsus* spp. | | 4 | |
| *Altica* sp. | | 1 | |
| *Crepidodera ferruginea* (Scop.) | | 5 | |
| *Chaetocnema concinna* (Marsh.) | | 1 | |
| *Chaetocnema* sp. (not *concinna*) | | 1 | |
| *Apion* spp. | | 2 | 3 |
| *Phyllobius* sp. | | 3 | |
| *Barypeithes araneiformis* (Schr.) | | 1 | |
| *Strophosomus* sp. | | 1 | |
| *Barynotus* sp. | | 2 | |
| *Sitona sulcifrons* (Thun.) | | 1 | 3 |
| *Sitona* sp. | | 3 | 3 |
| *Hypera punctata* (F.) | | 2 | |
| *Hypera* sp. (not *punctata*) | | 1 | |
| *Tanysphyrus lemnae* (Pk.) | | 6 | 5 |
| *Ceuthorhynchidius troglodytes* (F.) | | 1 | |
| Ceuthorhynchinae gen. et sp. indet. | | 1 | |
| *Anthonomus* cf. *rubi* (Hbst.) | | 1 | |
| *Tychius* sp. | | 1 | |
| *Mecinus pyraster* (Hbst.) | | 1 | |
| | Total | 251 | |

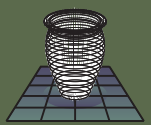
*Table 36.2: Stansted Bronze Age Ring Ditch other insects on the MTCP site (BAAMP00)*

| | Context 320117<br>Sample 2644<br>Sample vol (litres) 10 |
|---|---|
| *Forficula auricularia* (L.) | 1 |
| *Heterogaster urticae* (F.) | 1 |
| *Aphrodes bicinctus* (Schr.) | 3 |
| *Aphrodes* sp. | 2 |
| *Myrmica rubra* (L.) or *ruginodis* Nyl. - female | 1 |
| *Myrmica rubra* (L.) or *ruginodis* Nyl. - worker | 3 |
| *Lasius flavus* gp. – worker | 4 |
| *L. niger* – worker | 3 |
| Hymenoptera indet. (not Formicidae) | 2 |
| Diptera indet. – puparium | 1 |




Species groups expressed as a percentage of the total terrestrial Coleoptera (ie aquatics excluded). Not all the terrestrial Coleoptera have been classified into groups.

*Figure 36.1: Species Groups of Coleoptera from Bronze Age Ring Ditch 324078 and Late Bronze Age Waterhole 430084*



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