AML Report 3063

Seamer Carr, Yorkshire. Interim report on the insect fauna.
by P.J.Osborne.

In August, 1978 material was collected by Dr. Girling and myself to be examined for insect remains. A section one metre in depth in a trench already cut was sampled at 5cm intervals, each layer providing about 6 Kgs of matrix. The twenty samples taken were divided at random between M.A.G. and P.J.O., each worker taking ten bags to be worked independently. Figure 1 shows the way in which the samples were divided, M.A.G. taking those layers shaded in and P.J.O. those left unshaded. The samples which in fig. 1 are shown marked with an asterisk (*) are those which have been worked on to date and which form the subject of this report.

The material, a peat with occasional sticks and lumps of clay, washed down fairly readily in hot water, although sometimes it was found to be helpful to add sodium carbonate in those samples containing clay. Breaking down of the compacted peat resulted in a considerable increase in volume and so paraffin flotation was resorted to to concentrate the arthropod remains prior to sorting under a binocular microscope. All the insect remains recovered appeared to be very fragile and were prone to shrivel up entirely on drying out so that identifications were made on wet material wherever possible, or, when this was not practicable, the fragments were examined on a damp filter paper and returned to liquid as soon as possible for storage. Very few insects other than beetles were recognised and these, mostly Hemiptera, are noted after the Coleoptera in each list. The beetles are listed according to the classification of Kloet and Hincks, 1973 and the numbers given are the minimum number of individuals which had to have been present to supply the skeletal parts recovered.

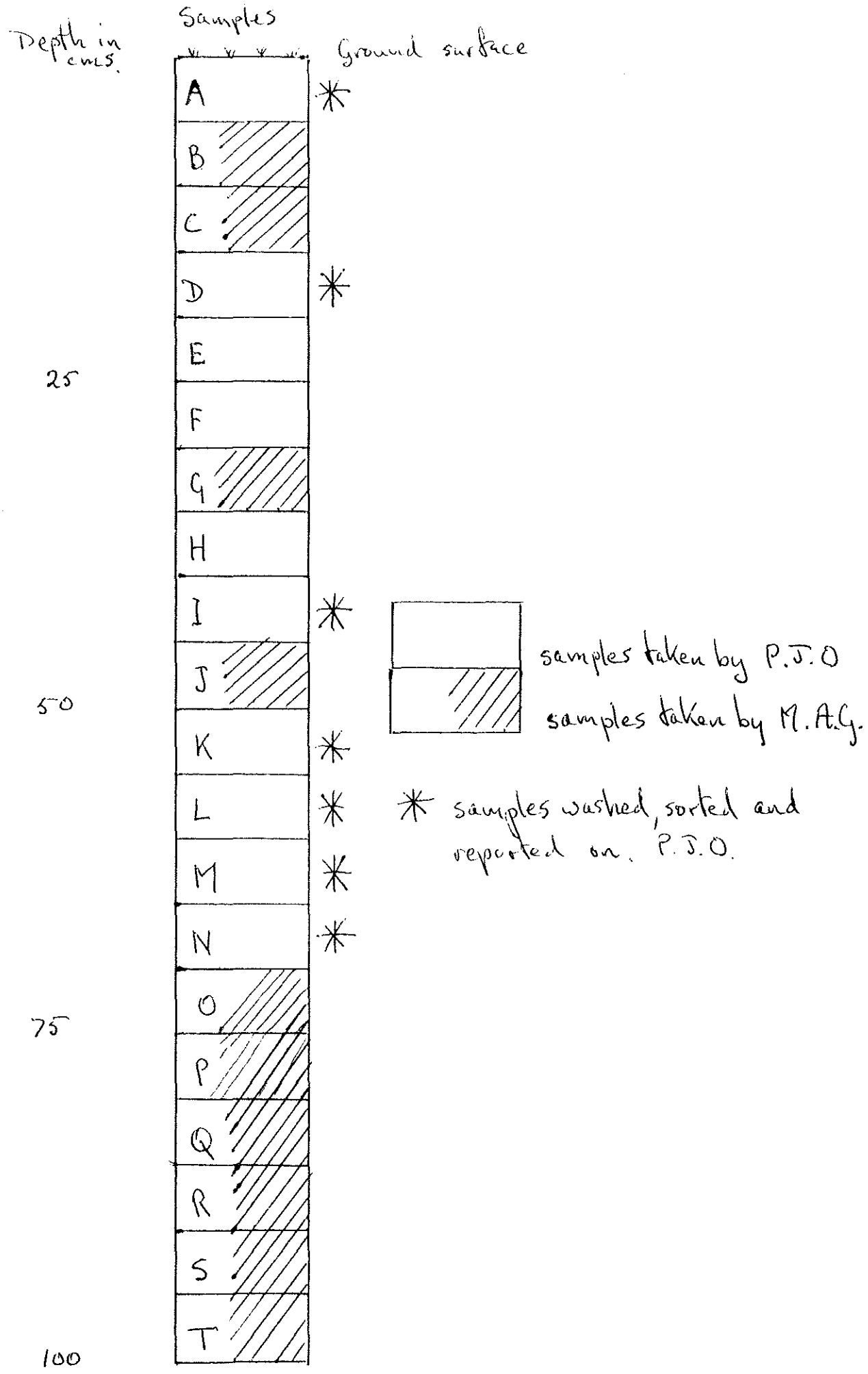
Faunal lists

Sample A

No insects worth noting

Sample D

Few insects worth noting



Seamer Carr, coll. Aug. 1978, M.A.G. and P.J.O.

Fig. 1

Sample I

COLEOPTERA

Hydrophilidae

Chaetarthria seminulum (Hbst.) 1

Ptiliidae

Acrotrichis sp. 1

Staphylinidae

Lathrobium sp. 2

Pselaphidae

gen. et sp. indet. 2

Scirtidae

gen. et sp. indet. 1

MEGALOPTERA

Sialidae

Sialis sp. 1

Sample K

COLEOPTERA

Dytiscidae

Agabus sp. 1

Ilybius sp. 1

Hydrophilidae

Cercyon sp. 2

Hydrobius fuscipes (L.) 1

Staphylinidae

Stenus sp. 1

Lathrobium sp. 2

Alaeocharinae indet. 1

Scirtidae

gen. et sp. indet. 6

Curculionidae

Magdalis carbonaria (L.) 1

Limnobaris ?pilistriata (Steph.) 1

Seed of *Menyanthes* and number of *Betula* seeds noted

Sample L

COLEOPTERA

Carabidae	
Odacantha melanura (L.)	1
Dytiscidae	
Agabus sturmi (Gyll.)	1
Agabus sp.	1
Hydrophilidae	
Helophorus sp.	1
Hydrobius fuscipes (L.)	1
Hydraenidae	
Ochthebius sp.	1
Hydraena palustris Er.	1
Ptiliidae	
Acrotrichis sp.	1
Staphylinidae	
Olophrum fuscum (Grav.)	2
Carpelimus sp.	1
Stenus spp.	7
Euaesthetus ruficapillus Bois. & Lac.	1
Paederus sp.	1
Lathrobium sp.	1
Alaeocharinae indet.	2
Scirtidae	
gen. et sp. indet.	13
Dryopidae	
Dryops sp.	1
Anobiidae	
Ptilinus pectinicornis (L.)	1
Sphindidae	
Aspidiphorus orbiculatus (Gyll.)	1
Cerylonidae	
Cerylon ?ferrugineum Steph.	1
Apionidae	
Apion sp.	1
Curculionidae	
Brachysomus echinatus (Bonsd.)	1
Tanysphyrus lemnae (Pk.)	1
Dorytomus sp.	1

Scolytidae	
Trypophloeus asperatus (Gyll.) or *granulatus* Ratz.	1
HEMIPTERA	
Saldidae	
Chartoscirta sp.	1

Sample M

COLEOPTERA	
Carabidae	
Pterostichus diligens (Sturm)	1
Pterostichus nigrita (Pk.)	1
Odacantha melanura (L.)	1
Hydrophilidae	
Hydrochus brevis (Hbst.)	1
Helophorus sp.	1
Coelostoma orbiculare (F.)	5
Hydrobius fuscipes (L.)	1
Chaetarthria seminulum (Hbst.)	6
Histeridae	
Saprinus semistriatus (Scriba) group	1
Hydraenidae	
Ochthebius sp.	1
Hydraena britteni Joy	2
Hydraena palustris Er.	5
Limnebius aluta (Bedel)	7
Limnebius nitidus (Marsh.)	1
Ptiliidae	
Acrotrichis sp.	1
Staphylinidae	
Metopsia retusa (Steph.)	1
Olophrum fuscum (Gr.)	9
Carpelimus sp.	1
Stenus spp.	27
Latrobium sp.	3
Falagria thoracica Steph.	8
Alaeocharinae indet.	5
Pselaphidae	
Trissemus impressa (Pz.)	6

Geotrupidae	
Geotrupes sp.	1
Scirtidae	
gen. et sp. indet.	19
Elateridae	
Dalopius marginatus (L.)	2
Denticollis linearis (L.)	1
Nitidulidae	
Epuraea sp.	1
Glischrochilus hortensis (Fourc.)	1
Glischrochilus quadripunctatus (L.)	5
Sphindidae	
Aspidiphorus orbiculatus (Gyll.)	1
Cerylonidae	
Cerylon ?ferrugineum Steph.	3
Cerylon histeroides (F.)	2
Corylophidae	
Corylophus cassidioides (Marsh.)	9
Colydiidae	
Bitoma crenata (F.)	1
Salpingidae	
Rhinosimus planirostris (F.)	1
Apionidae	
Apion spp.	2
Curculionidae	
Phyllobius spp.	2
Brachysomus echinatus (Bonsd.)	4
Strophosomus sp.	1
Sitona sp.	2
Dorytomus sp.	1
Phytobius comari (Hbst.)	2
Scolytidae	
Trypophloeus asperatus (Gyll.) or *granulatus* (Ratz.)	3
HEMIPTERA	
Saldidae	
Chartoscirta sp.	11

Sample N

COLEOPTERA

Carabidae	
Elaphrus ?uliginosus F.	2
Trechus rivularis (Gyll.)	2
Pterostichus diligens (Sturm)	2
Pterostichus minor (Gyll.)	2
Dytiscidae	
Hygrotus inaequalis (F.)	1
Agabus sturmi (Gyll.)	1
Ilybius sp.	1
Hydrophilidae	
Hydrochus brevis (Hbst.)	2
Coelostoma orbiculare (F.)	1
Cercyon spp.	41
Hydrobius fuscipes (L.)	1
Laccobius sp.	7
Chaetarthria seminulum (Hbst.)	2
Hydraenidae	
Ochthebius minimus (F.)	2
Hydraena riparia Kug.	8
Hydraena sp.	6
Limnebius aluta (Bedel)	20
Ptiliidae	
Ptenidium sp.	10
Acrotrichis sp.	1
Leiodidae	
Agathidium sp.	1
Staphylinidae	
Micropeplus tesserula Curtis	1
Metopsia retusa (Steph.)	1
Olophrum fuscum (Grav.)	14
Acidota crenata (F.)	1
Lesteva heeri Fauvel	5
Dropephylla heeri (Heer)	1
Phloeostiba lapponica (Zett.) or *plana* (Pk.)	1
Carpelimus sp.	2

Anotylus rugosus (F.)	1
Anotylus tetracarinatus (Block)	1
Stenus spp.	21
Euaesthetus ruficapillus Bois. & Lac.	5
Lathrobium sp.	1
Quedius sp.	1
Gymnusa brevicollis (Pk.)	1
Falagria thoracica Steph.	4
Alaeochara sp.	1
Alaeocharinae indet.	28
Pselaphidae	
Bryaxis sp.	9
Rybaxis laminata (Motsch.) or longicornis (Leach)	5
Trissemus impressa (Pz.)	4
Scarabaeidae	
Geotrupes sp.	1
Serica brunnea (L.)	1
Scirtidae	
gen. et sp. indet.	73
Elateridae	
Ampedus sp.	1
Dalopius marginatus (L.)	1
Anobiidae	
Ptilinus pectinicornis (L.)	1
Nitidulidae	
Glischrochilus hortensis (Fourc.)	1
Rhizophagidae	
Rhizophagus sp.	1
Sphindidae	
Aspidiphorus orbiculatus (Gyll.)	3
Silvanidae	
Silvanus ?unidentatus	1
Cerylonidae	
Cerylon ?ferrugineum Steph.	6
Cerylon histeroides (F.)	1
Corylophidae	
Corylophus cassidioides (Marsh.)	10
Coccinellidae	
Coccidula rufa (Hbst.)	1
Lathridiidae	

Lathridiidae	
Corticaria group	2
Salpingidae	
Rhinosimus planirostris (F.)	1
Bruchidae	
Bruchus ?loti Pk.	1
Chrysomelidae	
Phyllodecta sp.	2
Curculionidae	
Tanysphyrus lemnae (Pk.)	2
Dorytomus sp.	1
Phytobius sp.	2
Limnobaris pilistriata (Steph.)	8
Scolytidae	
Trypophloeus asperatus (Gyll.) or *granulatus* (Ratz.)	6
HEMIPTERA	
Saldidae	
Chartoscirta sp.	2
MEGALOPTERA	
Sialidae	
Sialis sp.	1
ODONATA	
Zygoptera	
?Agrion sp.	1

Preliminary observations on the insect faunas

It can be seen from the foregoing lists that insect remains became increasingly sparse from above sample L upwards. This could have been the result of an increasing rate of deposition which tended to dilute the available insect parts with more vegetable matrix or the general environment could have been changing to one which supported smaller populations of fewer species. On the other hand it is possible that numbers of insects living at the site remained the same but for some reason, possibly recurrent drying out of the growing peat, the fragments decayed and disappeared. It is probable that all three factors may have played some part in the apparent decline in insect populations. Certainly some of the fragments recovered from these upper samples were very frail and tenuous, and a change is discernible at about this level in that birch trees seem to put in their first appearance, perhaps signifying some drying up of the ground.

The few insects recorded from above sample L were frequently so fragile as to be unidentifiable but those that could be named suggested a pool or other form of still water in which Hydrobius, Ilybius and the Alder Fly, Sialis lived. Somewhere along the water margin there were reeds growing. Limnobaris pilistriata lives on such plants as Carex and Scirpus and members of the family Scirtidae are usually found living on waterside reeds. On drier but still damp ground members of such genera as Acrotrichis and Lathrobium, together with the Pselaphidae and the occasional Alaeocharine, were living amongst moss or leaf litter whilst Magdalis carbonaria indicates the presence of its host plant, birch, somewhere in the vicinity, a fact bourne out by the appearance in this sample of Birch seeds. This, in the layers so far examined, seems to be the first appearance of Betula but there is the possibility that it will be found when the lower samples are investigated.

Samples L, M and N all contained substantial insect assemblages and each layer will be discussed separately, although their environmental implications are rather similar to each other.

Sample L

Agabus sturmi, Hydrobius fuscipes, Hydraena palustris and probably Agabus sp., Helophorus sp. and Ochthebius sp., are inhabitants of still or slowly flowing water. The weevil Tanysphyrus lemnae whose host plant is the duckweed, Lemna, also suggests water that was not flowing sufficiently fast to carry the floating duckweed

away. Deep, damp moss is the usual habitat of Euaesthetus ruficapillus and would have provided a suitable pabulum for most of the Staphylinidae recorded from this horizon. The weevil Brachysomus echinatus, too, is usually encountered amongst moss. The predator Odacantha melanura lives amongst reeds, particularly Carex and the unidentified scirtids are mostly associated with reed beds. Trees are indicated by a number of the species of beetle recovered. Dorytomus sp., a weevil, spends its larval life in the catkins of various members of the genus Salix and this genus of plants contains the principal hosts of the bark beetle Trypophloeus asperatus/granulatus Cerylon species live beneath the bark of dead and rotting logs and Ptilinus pectinicornis is a wood borer in dead trees in its larval state. Dead trees infested with fungus or ~~or~~ the fruiting bodies of the fungus themselves provide the habitat for Aspidiphorus orbiculatus Although these last three species may be found associated with a number of different sorts of tree all ~~may~~ can be found on Willow and as Salix is indicated by other beetles present it is possible that other trees were not present. At any rate, if they were they have left no sign of their existence, either in the form of insects with a specific host plant or as plant macrofossils, i.e. seeds.

Sample M

Many of the beetle species found in this layer occurred also in L and the environment implied is very much the same. Again still water is indicated, by Hydrochus brevis, Hydrobius fuscipes, Hydraena britteni, Hydraena palustris and probably by Helophorus sp. and Ochthebius sp. Muddy margins to this water provided habitats for Coelostoma orbiculare, Chaetarthria seminulum, Limnebius aluta and Limnebius nitidus. Reed beds were present, as shown by the Scirtidae and by a number of Corylophus cassidioides, a species which lives under decaying reeds. Trissemus impressa is usually found living in deep moss, preferably near water, and probably all the Staphylinidae recorded would have been at home in this habitat, although most of them would probably have been equally at ease amongst leaf litter. The two species of Pterostichus, diligens and nigrita may often be found amongst waterside moss, frequently Sphagnum. Salix is suggested again by the presence of Dorytomus sp. and by Trypophloeus asperatus/granulatus but as well as these a number of other beetles were found which are associated with deciduous trees and it cannot be ruled out that all were living on Willow. This group includes Denticollis linearis, Cerylon ?ferrugineum, Cerylon

histeroides, Bitoma crenata and Rhinosimus planirostris, all of which live in the wood of, or under the bark of rotting logs, and also Glischrochilus hortensis and Glischrochilus quadripunctatus which are particularly associated with the borings of bark beetles and Aspidiphorus orbiculatus whose habitat is tree fungi.

Sample N

Over sixty taxa have so far been identified from this level so that it is possible that the lower samples may provide very extensive faunal assemblages. Although more species are recognised the basic habitats indicated are much the same as in M.

Still water species include Hygrotus inaequalis, Agabus sturmi, Ochthebius minimus, Hydrochus brevis, Hydrobius fuscipes, Hydraena riparia and the aquatic weevil Tanysphyrus lemnae, whilst those insects which live amongst the mud at the edges of water were Coelostoma orbiculare and Chaetarthria seminulum, joined sometimes by Limnebius aluta, which will also inhabit wet moss. Damp moss, often witb a mixture of Sphagnum, although not usually as a pure culture of Sphagnum, provides a habitat for many of the beetles obtained from this horizon.Most of the Staphylinidae recorded, the ptiliids Acrotrichis and Ptenidium and the carabids Pterostichus minor, Pterostichus diligens and Trechus rivularis, and particularly the Pselaphidae Rybaxis laminata/longicornis and Trissemus impressa, are all most frequently found living in moss, usually beside water. More species representative of reeds were found in layer N. As well as large numbers of Scirtidae and Corylophus cassidioides the ladybird Coccidula rufa and the weevil Limnobaris pilistriata make their appearance. Those insects found in rotting logs, either in the wood or beneath the bark, the Cerylon species, Rhinosimus planirostris and Ptilinus pectinicornis are joined in this sample by Rhizophagus sp., Silvanus ?unidentatus and Ampedus sp. whilst Aspidiphorus orbiculatus, Glischrochilus hortensis, Dorytomus sp, and Trypophloeus asperatus/granulatus occur again, accompanied by Agathidium sp., usually associated with fungi on trees. Again the only tree species specifically indicated is Salix.

The 'Dor' beetle, Geotrupes, recorded from both this and the previous sample is a dung beetle, suggesting the presence of large grazing mammals. The beetle is a powerful flier, however, and could have come from some distance. It is joined in sample N, though, by Anotylus rugosus whose principal habitat is also dung and by Anotylus tetracarinatus, a species found in all kinds of decaying vegetable refuse, including dung, so this pabulum, with its

hint of grassland somewhere nearby must be noted.

It is clear that the environment demonstrated by the beetles from layers L, M and N is substantially the same in each case. That is, still or slowly flowing water bordered by reeds and Carex in places with probably moss down to the waterside in others, and in places muddy margins. On the drier ground trees were present but only dead ones were indicated and the only specific host to those beetles recorded was Salix. Above this the faunas became too sparse to give an accurate clue to the local environment but Birch, indicated by both beetle evidence and the presence of its seeds seems to have made an appearance.

There is no suggestion that the climate of the time need have been less warm than that of the present day nor can it be safely postulated on the present evidence that it was any warmer. A small number of beetles which are slightly north of their present geographical ranges might as easily have been influenced by the activities of man as by the vagaries of the climate. Examination of samples O downwards will perhaps provide some more evidence on this point.

This report must only be regarded as tentative until more of the lower samples have been examined and their evidence assimilated. Even then it will be made infinitely more useful if backed up by some radiocarbon dates as the beetles can give little clue to the age of the deposit. The dearth of trees except Salix, the presence of Limnobaris pilistriata and Trechus rivularis and the absence of seeds of the Alder, which are very robust and most likely to survive had they been present, combine to suggest very tentatively an early Flandrian age, perhaps between 8 and 9000 years B.P. but this is more intuitive than deductive and is little better than a guess.