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A BEETLE FAUNA (COLEOPTERA) FROM THE "WOLBROM 2"  
PROFILE  
PRELIMINARY RESULTS

Fauna chrząszczy (Coleoptera) z profilu "Wolbrom 2"  
Wstępne doniesienie

All provisionally investigated beetle remains origin from 15 samples analysed for plant macrofossils (see: pp. 75—115). Identified beetle macrofossils are listed in the Table 1.

REVIEW OF THE MORE IMPORTANT TAXA

*Dyschirius globosus* (Herbst). Palaearctic humicolous species occurring on moist grounds in open country. Now in all parts of Poland; as a sub-fossil, known from eight Holocene localities (also: Niechorze IV-a, Woryty 80, Żabinko, Mechlin, Czmoniec 2, Słopiec II, Podgrodzie A); noted in Holocene sediments of Sweden and Finland; in Great Britain found in "Mid-Weichselian Interstadial" sites.

*Pterostichus strenuus* (Panz.). An Euro-Siberian humicolous and muscicolous species occurring in damp forests on clayish soils, among moss and leaves. Now widely distributed in Poland; as a sub-fossil, known from five Holocene localities (also: Kluki, Słopiec II, Czmoniec 2, Puścizna Rękowiańska).

*Pterostichus* spp. Little characteristic fragments of few specimens of a small species — may be also of the subgenus *Argutor* Steph., or even *P. (Arg.) strenuus* and eventually *P. (Arg.) diligens* (Sturm), often occurring in peat-bogs.

*Coelostoma orbiculare* (Fabr.). Euro-Siberian hygrophilous and humicolous species occurring in stagnant pools, detritus ponds, marshes and peat-bogs. Nowadays rare, but distributed all over Poland; as a sub-fossil known from 12 Holocene and Pleistocene sites (oldest one — from end of the Eemian Inter-glacial period).

*Acidota crenata* (Fabr.). Holarctic — circumpolar humicolous and muscicolous species occurring mostly in moist forests and peat-bogs. Now in all parts of Poland, but not previously found as a sub-fossil; noted from few Late Pleistocene ("Mid-Weichselian interstadial") localities in Great Britain.

A beetle fauna from the "Wolbrom 2" profile

Table 1

samples with beetle remains	<sup>14</sup> C Age years BP	Pyschirius globosus	Pterostichus strabus	Pterostichus (Argutor?) spp.	Cecilotoma orbicularis	Acidota crenata	other Omaliinae spp.	Scirtes orbicularis and (or) haemisphaericus	Thymalus limbatus	Donaciinae spp.	Apion sp.	Hydrogonomus alis matis or Bagous	Notaris aethiops	Limnobaris pallistrata	Microslus ericace	Ceutorhynchinae spp. indet.	Macrofossil assemblage zones	
																	beetle	plant
	7020 ± 75																	
111-116																		WOL <sub>2</sub> III
	8390 ± 80																	
188-196																		WOL <sub>2</sub> III
	8800 ± 110																	
213-216																		
246-254																		WOL <sub>2</sub> III
	10110 ± 130																	
272-277																		
278-282																		
282-286																		
	10300 ± 100 10670 ± 190																	
297-302																		
302-307																		
307-313																		
	9410 ± 120 11800 ± 110																	
320-323																		
	11560 ± 120																	
333-338																		
338-343																		
	11630 ± 150																	
353-358																		
	12340 ± 160																	
377-387																		

Key head pronotum elytron tergites or legs minimal number of specimens (scale)

*Olophrum* sp. and other *Omaliinae* dominate in the described locality. Bigger species are often humicolous and muscicolous, and smaller species are mostly found on flowers of trees, shrubs and other plants, especially along shores of running and stagnant waters.

*Scirtes orbicularis* (Panz.) [and eventually some fragments of *S. haemisphaericus* (L.) also]. European (or Euro-Siberian) hygrophilous and humicolous species, occurring along running and stagnant water, in marshy forests and peat-

-bogs. Now — it is not common in Poland (mainly in lowlands and uplands), but as a sub-fossil — is often found in many Holocene sites of Northern and Southern Poland; in Pleistocene localities is not recorded — the oldest  $^{14}\text{C}$  data concern the time between 10000 and 11000 years B. P.

*Thymalus limbatus* (Fabr.). Western-Palaeartic, saprophagous and (or) mycetophilous species, occurring in the rotten wood and touchwoods. Present day distributed in the upland and mountain parts of Southern Poland, as well as in one isolated locality of NE Poland; as a sub-fossil previously not known.

*Donaciinae*. Numerous, phytophagous species of long-horned leaf beetles of the genus *Donacia* Fabr. and *Plateumaris* Thoms. are connected with hygrophilous plants, especially in peat-bogs: *Carex* sp., *Glyceria* sp., *Typha* sp., *Sparganium* sp., *Scirpus* sp., as well as *Phragmites communis*, *Phalaris arundinacea* and *Schoenoplectus lacustris*. Now, about 30 species are known from Poland; as sub-fossils — twelve species occur in many Holocene and Pleistocene localities — often as dominant ones; few taxa are noted from the British Vistulian and Holocene deposits.

*Hydronomus alismatis* (Marsh.) [or *Bagous* sp. indet.]. Euro-Siberian phytophagous species connected with *Alisma plantago-aquatica* and *Sagittaria sagittifolia*. Now in all parts of Poland; as a subfossil known also from two other Holocene sites: Czmoniec II and Słopiec II. [Remark: an incomplete elytron may be not distinguishable from elytra of some species of the allied genus *Bagous* Germ. also connected with hygrophilous plants: *Potamogetonaceae*, *Lemnaceae*, *Hydrocharidaceae*, *Typhaceae*, etc.].

*Notaris aethiops* (Fabr.). Holarctic phytophagous species connected with peat-bog plants. Present day distribution in Central Europe has a regressive character (only in few relict sites); very common and characteristic weevil in many Pleistocene and early Holocene deposits in Poland, as well as in Great Britain and Byelorussia.

*Limnobaris pilistriata* (Steph.). West-Palaeartic phytophagous species living on few wet meadow plants: *Scirpus sylvaticus*, *Juncus effusus* and some *Carex* sp. Now widely distributed in Poland; in Pleistocene (especially during interglacial periods) was common but only in short — moist and warmer episodes; known also from many Polish Holocene deposits: Kluki (see pp. 223—226), Żabinko, Jaszkowo, Mechlin, Drogomyśl, Łęki Dolne, Podgrodzie A.

*Micrelus ericae* (Gyll.). Western-Palaeartic phytophagous species living on *Calluna vulgaris* and *Erica tetralix* in moors and peaty meadows. Now in all parts of Poland; sporadic in Holocene deposits (also in "Kluki 74" profile — see pp. 223—226).

## CONCLUSIONS

In relation to other Polish Pleistocene/Holocene sites — a beetle fauna of the "Wolbrom 2" is rather untypical. Remains of weevils (*Curculionidae*) are sporadic and unabundant, while long-horned leaf beetles (*Donaciinae*) are

present only as few not identifiable small fragments. The carnivorous water beetles (*Dytiscidae*, *Haliplidae*, *Gyrinidae*) are also lacking. On the other hand, in "Wolbrom 2" a rich assemblage of *Omaliiinae* is found. All above mentioned facts may suggest that during the described period this peat-bog was covered by mosses, but externally dry — without open water.

Faunal unit I. The sample 377—387 (about 12.500 years B. P.) of the described profile — is a residual fragment of a typical Pleistocene peat-bog assemblage with characteristic weevil — *Notaris aethiops*.

Faunal unit II. During the period between 12.300 and 11.800 years B. P., we observe a little differential aspect of fauna, with a distinct domination of the ocellate rove beetles (*Omaliiinae*) and with the heath weevil *Micrelus ericae*; it may be an indicator of a moderately dry raised peat-bog.

Faunal unit III. During the period between 11.000 and 10.000 years B. P., a beetle fauna is richer, with the marshy *Coelostoma orbiculare* and hygrophilous *Scirtes orbicularis*, as well as the wet-meadow weevil *Limnobaris pilistriata*. In addition — a presence of tree flora in the locality is confirmed by finding of *Thymalus limbatus*. The above mentioned beetle assemblage may be an indicator of a wetter and warmer transitional (?) peat-bog.

The more precise designation of the "faunal units" (or "assemblage zones") of the investigated peat-bog, will be possible after the examination of a beetle material from the "Wolbrom 3" profile (now in technical preparation).

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