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Aegomorphus wojtylai, a new species from Poland, with a key to European species of *Aegomorphus* HALDEMAN (Coleoptera: Cerambycidae)

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ABSTRACT. *Aegomorphus wojtylai n.* sp. is described from Poland. Biology of the new species and key to European species of *Aegomorphus* HALDEMAN is given.

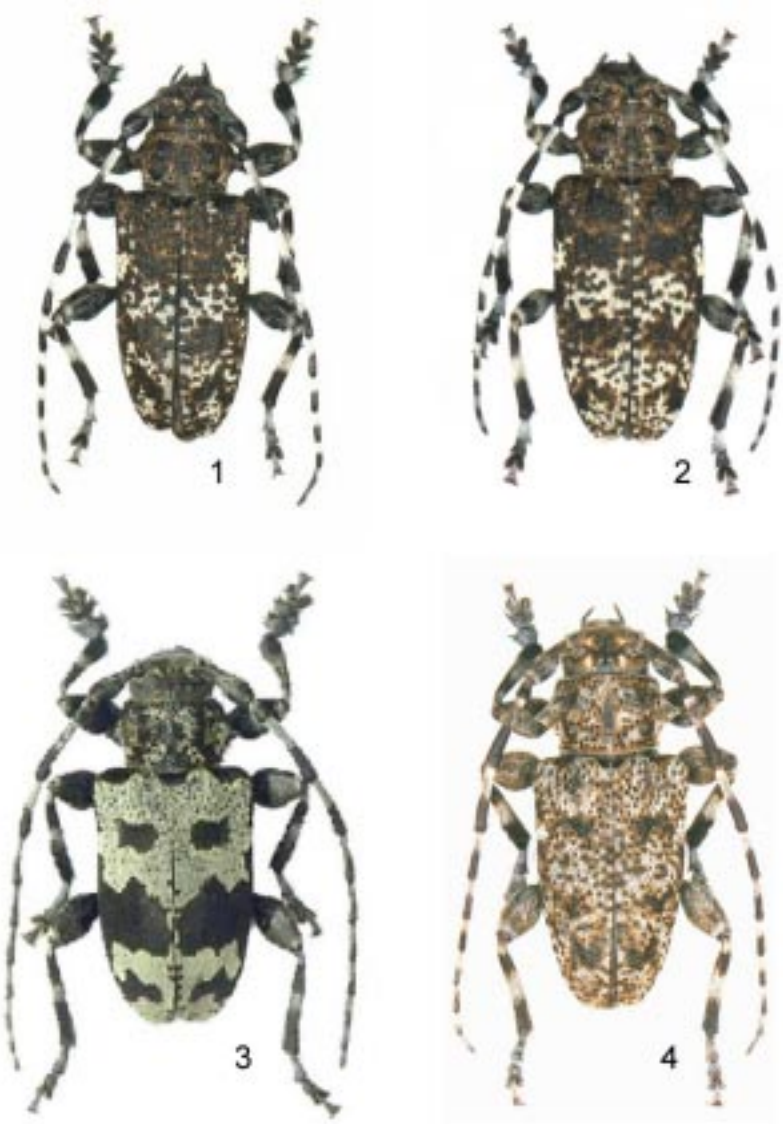
Key words: entomology, taxonomy, Cerambycidae, *Aegomorphus*, new species, Europe, biology, key to *Aegomorphus* spp.

The genus *Aegomorphus* HALDEMAN, 1847 comprises three species in Europe: *A. clavipes* (SCHRANK, 1781) (Palaearctic), *A. krueperi* (KRAATZ, 1854) (Greece) and *A. francottei* SAMA, 1994 (France, Macedonia, Montenegro, Bulgaria, and Romania). Recently another species has been described from Asia Minor: *A. planiusculus* HOLZSCHUH, 1998, which in general resembles *A. clavipes*. These species used to be treated as *Acanthoderes* SERVILLE, 1835, but SAMA (1994) separated *Aegomorphus* HALDEMAN, 1847 from Neotropical and Central American species with type species *A. daviesii* (SWEDERUS). The overall habitat of *A. clavipes* and *A. francottei* is frequently very similar and determination can sometimes be quite challenging. ALLEMAND et al. (2002) presented a combination of characters enabling separation of *A. clavipes* from *A. francottei*. Especially the shape of parameres was shown to be a useful diagnostic feature. In the present paper a new species of the genus *Aegomorphus* HALDEMAN, 1847 is described from Poland based on clear differences in adults morphology and in the biology of the species. The key to adults of all European species of *Aegomorphus* is included.

Aegomorphus wojtylai n. sp.

ETYMOLOGY

The name "*wojtylai*" is dedicated to Karol WOJTYŁA, the late Pope JOHN PAUL II.



1-4. Adults of *Aegomorphus* spp.: 1, 2 - *A. wojtylai*, 1 - male, 2 - female, 3 - *A. krueperi*, male, 4 - *A. clavipes*, male

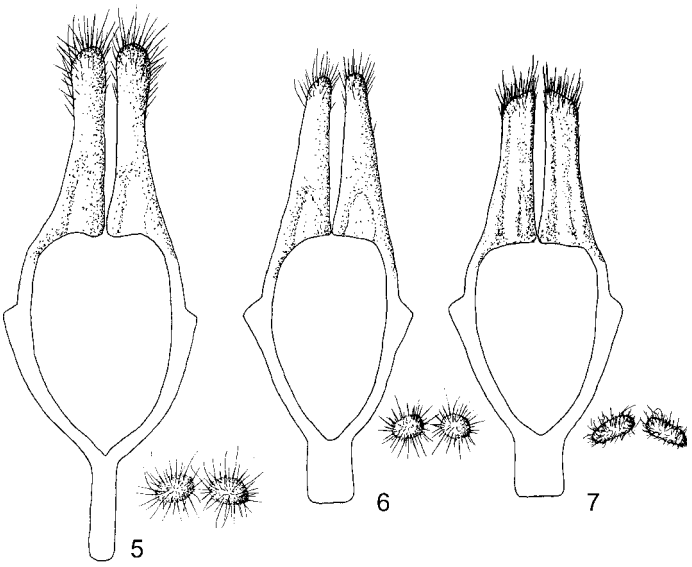
DIAGNOSIS

European *Aegomorphus* spp. represent a morphologically uniform group and differ mainly in their color pattern, size and shape of elytra, pronotum and shape of male genitalia. *A. wojtylai* can be separated from other species of the genus by the dominant black and brown color of body pubescence and shorter pronotum (Figs 1, 2). *A. wojtylai* also differs from *A. clavipes* in having characteristic shorter and flatter paramers and short, broader base of tegmen (Fig. 7). The general shape of male genitalia resembles *A. francottei* and especially *A. krueperi*.

TYPE MATERIAL

Holotype ♂: Biebrza National Park (BPN) (Poland, Podlasie), Honczarowska Grobla, pupa in oak stem 18.V.2004, emergence of adult indoors 5-10.VI.2004 leg. J. Hilszczański. Paratypes: 2 ♀ the same data as holotype; BPN, Leszczynowe 29.V.2000, 1♂ by sweeping leg. C. Bystrowski; BPN, Leszczynowe V.2001, 1♂ leg. J. Hilszczański; BPN Kopciowe 10.VI.2002, 1 ♀ dead specimen in emergence hole in dead branch of oak leg. G. Tarwacki; BPN Honczarowska Grobla 25.V.2003, 1♂1 ♀ on cut oak branches leg. C. Bystrowski; BPN Honczarowska Grobla 4.VI.2004, 1♂ from pupal chamber in a wounded oak leg. J. Hilszczański; BPN Honczarowska Grobla 18.V.2004, emerged XI.2004, 1 ♀ reared indoors from oak stem (without overwintering) leg. J. Hilszczański.

Holotype is deposited in the collection of Forest Research Institute in Warsaw (located in Sękocin Las). Paratypes are in the authors' and other private collections.



5-7. Parameres of *Aegomorphus* spp., with the view of the tops on the side of each drawing: 5 - *A. clavipes*; 6 - *A. francottei*; 7 - *A. wojtylai*

DESCRIPTION

Holotype: length of body (measured in the natural perpendicular position of the head to the body axis) 11.7 mm.

Body black. Head and pronotum covered with predominantly dark, black and brown, and to lesser extent with white pubescence. Scutellum black. Basal third of elytra almost completely black and dark brown, otherwise with three unclear horizontal white bands in middle and posterior part, which are speckled with black variable spots bearing one puncture each (Fig. 1). Ventral part of the body covered with sparse white and rarely brown short hairs. Legs black with white pubescence present on femora and forming white bands on base and middle of tibiae. Tarsi with white pubescence on 1st and 4th segments and black on 2nd and 3rd segments. Antennae black with white bands on base of 3rd to 11th segments. Head big, narrower than pronotum with unclear depression between antennae. Pronotum distinctly narrower than base of elytrae and short (the ratio of pronotal length in the middle to elytral length along suture is 0.25-0.27) with small lateral spines just behind the middle and pointed slightly backwards. Elytra shiny, with longitudinal unclear tubercles in the middle of the base and deeply punctured, puncturation becoming sparser towards apex. Elytral carinae feebly developed except an unclear one along sutural depression and along humera. Antennae slender. Wings well developed. Legs rather long, femora thickened, front tibiae anteriorly indistinctly extended. Genitalia with short, broad and flat paramers and short, broad base of tegmen (Fig. 7).

Paratypes: length of body (measured in natural perpendicular position of the head to the body axis) in females 10.7-12.3 mm and in males 9.5-11.6 mm. Colour of body pubescence varies from more brown to more black. Spines on pronotum (usually smaller than in other *Aegomorphus* spp.) varies from very small in some males to bigger ones in females. Sometimes middle and hind tarsi completely or partly with white hairs on 2nd segment. Sutural depression sometimes with delicate wrinkles.

Sexual dimorphism: Front tarsi in females narrow and simple, in males clearly broadened with long black, basal, hairs on each segment. Antennae in females slightly extending beyond elytral apex and in males extending the apex by about 3 last segments.

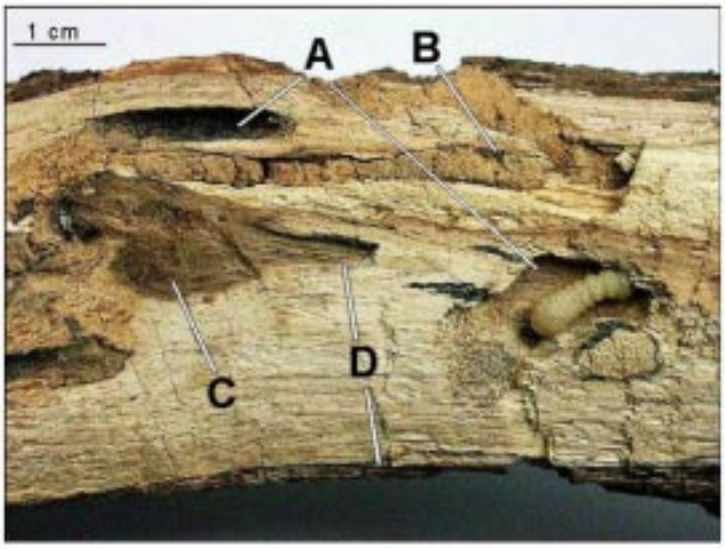
HOST PLANT AND BIOLOGY

The only known host of *Aegomorphus wojtylai* is Pedunculate oak (*Quercus robur* L.). Larvae were found in dead trees or dead parts of living ones, such as dead branches or wounds. Trees of small diameter (5-20 cm) are strongly preferred. Larvae feed under the bark and later enter sapwood where they excavate tunnels several centimeters long and densely filled with frass and excrements (Figure 3). Flat and broad pupal chambers are excavated before winter in sapwood, usually >5 mm below the surface of wood. This behavior is in contrast to that of *A. clavipes* which develops exclusively under the bark and only pupates shallowly in sapwood or under the bark (BURAKOWSKI et al. 1990; SVACHA 2001; SAMA 2002).

Larvae of *Aegomorphus wojtylai* overwinter and pupate after second winter in April-May. Adults emerge through a newly built oval exit hole of about 5x6 to 3x4 mm in size. Life cycle lasts two years. Adults are active from second half of May and were collected in the field on oak branches left from winter cutting or by sweeping from the vegetation close to oak trees.

REMARKS

All known localities of *A. wojtylai* were found in the southern basin of Biebrza National Park (Podlasie Region) and are located on mineral dunes created after the last glaciation in ice marginal valley about 13-18 thousand years ago (ŻUREK 1991). Dunes are currently surrounded by marshes and covered with rich xerothermic vegetation and open shrub mixed forest with Pedunculate oak, which reached this area in the warm and dry Boreal period, and has been a dominating species since warm Atlantic period of Holocene (about 8000 to 5000 years ago) (LINDNER 1992). Except oaks, lime *Tilia cordata* MILL., hazel *Corylus avellana* L., aspen *Populus tremula* L. and birch *Betula* spp. are present. The trees are to a high degree affected by game, mainly moose. In the surrounding wetlands other deciduous tree species occur, including alder *Alnus glutinosa* (L.)GAERTN. and numerous willows *Salix* spp. *A. wojtylai* develops in oak and has not been found on other tree species. Two other species of *Aegomorphus*, i.e. *A. krueperi* and *A. francottei* are according to known data also associated with oak *Quercus* sp. (ALLEMAND et al. 2002), while *A. clavipes* is polyphagous on deciduous trees, preferring aspen and birch and has been reared from oak only sporadically (PALM



8. Larval galleries of *Aegomorphus wojtylai*: A) pupal chambers; B) larval tunnel; C) heartwood; D) range of sapwood

1959; BURAKOWSKI et al. 1990; BENSE 1995; SAMA 2002). In Biebrza National Park both species i.e. *A. wojtylai* and *A. clavipes* occur sympatrically, although they are rare.

CONSERVATION OF THE SPECIES

All of the known localities of *A. wojtylai* are located on the area of Biebrza National Park which assures sufficient protection of the species. Additionally, all localities represent remote and hard to access mineral dunes on wetlands, although most of the places are accessible in winter and are sporadically utilized by local people as a source of firewood. The traditional managment of this habitats includes sustainable harvesting of the oak, leaving behind sufficient amount of dead wood, wounded living trees and preserving the open oak stands. It is believed that *A. wojtylai* benefits from this kind of management and if sustained at present level it should ensure continuity of the insect population.

KEY TO EUROPEAN SPECIES OF *AEGOMORPHUS* HALDEMAN

1. Elytra predominantly white with contrasting 3 big black spots on each one, without brownish and black pattern of smaller spots around elytral punctures (Fig. 3).
……..…….. *A. krueperi* (KRAATZ)
–. Elytra differently colored, with big black spots usually less contrasting or not contrasting at all and with black and brownish or orange smaller spots of variable size around elytral punctures.
...…….... 2.
2. Elytra predominantly black and dark brown, especially in basal 1/3, so that the big black spots are not separated. White color is restricted to three unclear horizontal bands. Elytral punctures located on elytral disc, surrounded widely with black and partly dark brown hairs forming small spots (Figs 1, 2). PEI* 0.25-0.27. Parameres short, wide and flat on top (Fig. 7).
.....…. *A. wojtylai* n. sp.
–. Elytra gray-white including basal part, so the black spots are separated. Small spots around punctures in the middle of elytra usually only slightly black in the middle and surrounded with orange-brown hairs. PEI 0.28-0.33. Parameres usually longer and finger or club like in shape on top (Figs 5, 6).
.....…… 3.
3. Elytra in basal part indistinctly granulose, with humeral black spot clear and other big spots contrasting. Elytra more parallel. Parameres usually finger like in shape on top (Fig. 6).
……..…….....……. *A. francottei* SAMA

* PEI – the ratio of pronotal length in the middle to elytral length along suture.

–. Elytra in basal part granulose, with or without indistinct humeral black spot. Elytral big black spots less contrasting. Elytra distinctly narrowed beyond middle (Fig. 4). Parameres long and club like in shape on top (Fig. 5). ..... *A. clavipes* SCHRANK

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