

## ***Megachile nigriventris* SCHENCK, 1868 and its nest parasite *Coelioxys lanceolata* NYLANDER, 1852 (Hymenoptera, Apoidea, *Megachilidae*) in Poland**

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Abstract. The distribution of *Megachile nigriventris* SCHENCK and its nest parasite (*Coelioxys lanceolata* NYLANDER) in Poland are described. The relation of *M. nigriventris* to *Megachile maacki* RADOSZKOWSKI is discussed. Data on their morphology and bionomics are given.

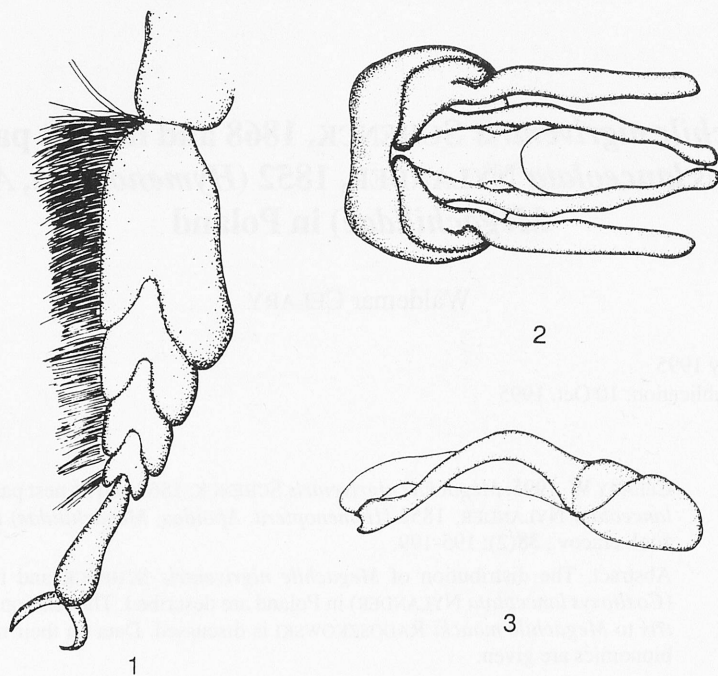
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*Megachile nigriventris* SCHCK. has two colored forms. A dark form with black pollen-collecting brush in female (SCHENCK 1868, GERSTAECKER 1869 – described as *Megachile ursula*) exists in Alps (sporadically in Carpathians, Sudetes and Fennoskandia). The pale form with reddish-yellow scopa (black hairs only on the sides and at the end) described by THOMSON (1872) as *Megachile curvicrus*, occurs in Fennoskandia, Sudetes and Carpathian Mts (DORN & WEBER 1988, TKALCU 1976). Pale form is similar to the Siberian species *Megachile maacki* described by RADOSZKOWSKI (1874), therefore in paper of DYLEWSKA and ZABŁOCKI (1972) almost all Polish specimens (with the exception for specimen of female from Pieniny Mts, belonging to the dark form) are recorded as *Megachile maacki* RAD. Comparison of material with the descriptive type of *Megachile maacki* (Holotype ♀, Russia: Siberia: Irkutsk; Institute of Systematics and Evolution of Animals of the Polish Academy of Sciences, Kraków) as well as with descriptions of *Megachile nigriventris* SCHCK. (DORN & WEBER 1988, GERSTAECKER 1869, NIEMELÄ 1936, SCHENCK 1868, THOMSON 1872, TKALCU 1966, 1976) and specimens of *M. nigriventris* SCHCK. coming from Alps indicated, that all specimens from Poland belong to the pale form of *Megachile nigriventris* SCHCK.

Female of *M. nigriventris* can be readily separated from that of *M. maacki* by the lack of whitish and erect fasciae on distal margins of tergites 3-5, whereas the male can be easily recognized by characteristic structure of the foretarsus (Fig. 1) and genital capsule (Figs. 2-3).

Mature adults of the species emerge in June and fly till the end of July. As one of few species of the genus *Megachile* it nests in rotting wood, beams, stumps and boughs (sometimes in door- and window-frames). It builds brood cells of ovals and circles precisely cut out of leaves of *Betula* sp., *Fagus silvatica* L., *Acer pseudoplatanus* L., *A. platanoides* L., *Rosa* sp. and *Epilobium* sp. This is an oligolectic species, collecting pollen of plants of the family Fabaceae such as: *Medicago*



Figs 1-3. *Megachile nigriventris* SCHCK. 1 – foretarsus of male; 2 – dorsal view of male genitalia; 3 – same in lateral view.

*sativa* L., *Trifolium repens* L., *T. pratense* L., *Lotus corniculatus* L., *Vicia sepium* L., *Lathyrus pratensis* L., *L. latifolius* L. (DORN & WEBER 1988, NIEMELÄ 1936, WESTRICH 1989).

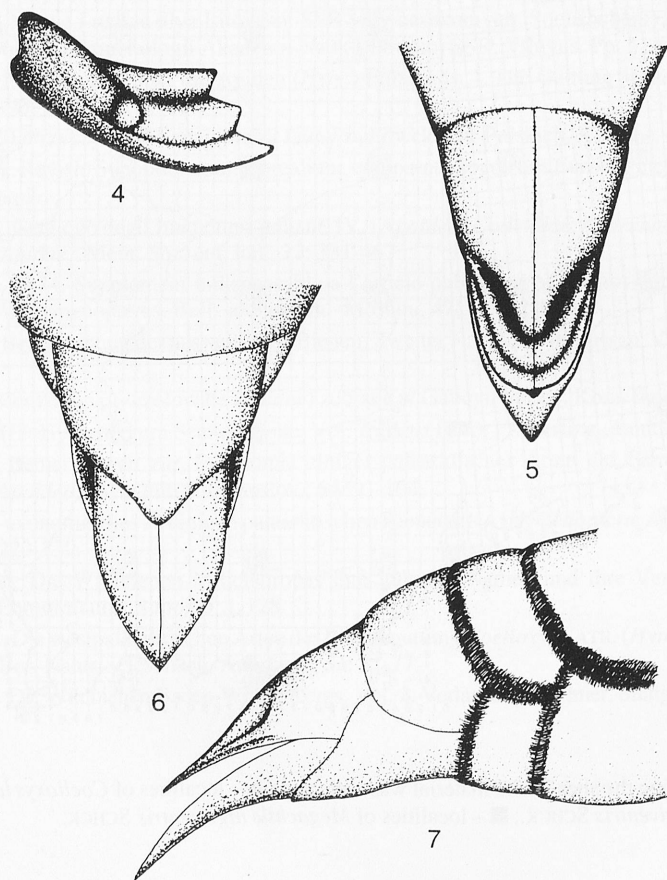
Apart from Poland (West Carpathians), *M. nigriventris* is known also from Spain (Pyrenees) and Italy (PAGLIANO 1993), Switzerland (Alps), Austria and Germany (Alps), Bohemia (Sudetes) and Denmark (WARNCKE 1986), Lithuania (MONSYAVICHYUS 1984), Finland, Sweden (NIEMELÄ 1936), and Norway (TKALCU 1976). The characteristic distribution limited to Northern Europe and mountains of Central Europe as well as very wide disjunction on the Great European Plains distinctly indicates, that it is a Boreo-montane element (postglacial relict) in the fauna of Europe.

In Poland *M. nigriventris* SCHCK. was recorded exclusively from sites of Pieniny Mts and Tatra Mts (ŚNIEŻEK 1910, NOSKIEWICZ 1920, DYLEWSKA 1962, 1991), recently the author collected a female of this species in Beskid Śląski Mts (Fig. 8). Therefore, in Poland a prevalence of the species is limited to Carpathians, because information about locality in Masuria (DYLEWSKA & ZABŁOCKI 1972) refers to the locality in Russia (Rominty – Kaliningrad district).

**Material examined.** CV59 Barania Góra MT, 7 July 1993, ♀, on *Vicia* sp., leg. W. CELARY. DV25 Bystre, Dolina za Bramką (NOSKIEWICZ 1920); Dolina Białego, 18 July 1923, ♂, leg. J. FUDAKOWSKI; Tatry, ♂, leg. O. RADOSZKOWSKI (erroneously determined as *Megachile maacki* RAD.). DV26 Poronin-Galicowa Grapa, 16 July 1987, ♂, leg. M. DYLEWSKA; Toporowa Cyrhla, 22 July 1923, ♂, leg. J. FUDAKOWSKI; Zakopane, 19 July 1919, ♂, leg. P. ŁOZIŃSKI, 17 June 1969, ♀♂, leg. M. DYLEWSKA, (ŚNIEŻEK 1910); Zakopane-Gronik Kościeliski, 13 August 1933, ♀♂, leg. J. ZABŁOCKI. DV36 Bukowina Tatrzańska, 23-24 July 1939, 2♀♀, leg. J. ZABŁOCKI. DV57 Grabczycha, 21 June 1958, ♀, on *Coronilla varia* L., leg. M. DYLEWSKA; Nowa Góra Mt, 26 June 1961, ♀, on *Coronilla varia* L., leg. M. DYLEWSKA.

*Coelioxys lanceolata* NYL. is the only nest parasite of *M. nigriventris* SCHCK. The species was described on the basis of a female specimen (NYLANDER 1852), while males over very long period were unknown. It was not till one hundred years later that ERLANDSSON (1955) published the description of a male on the basis of a specimen collected in Sweden (till now males are known exclusively from this territory).

Female of *Coelioxys lanceolata* NYL. differs from those of all other members of the genus in having tubercle at the base of outer ridge on outer surface of mandible (Fig. 4), as well as the characteristic shape of distal (5-6) tergites and sternites (Figs 5-7).



Figs 4-7. *Coelioxys lanceolata* NYL. 4 – outer view of mandible of female; 5 – dorsal view of distal segments of female abdomen; 6 – same in ventral view; 7 – same in lateral view.

Its flight season is the same as of its host. The cleptoparasite visits flowers of *Vicia* sp., *Epilobium* sp. and *Thymus* sp. (WESTRICH 1989).

The inquiline such as its host is a Boreo-montane species, but as cuckoo bee is significantly rarer. The cleptoparasite is known from Sweden and Finland (ERLANDSSON 1955) as well as from Pyrenees, Alps and West Carpathians (WARNCKE 1986, 1992).

From Poland *C. lanceolata* NYL. was known from a single specimen of female (DYLEWSKA 1962), which was collected on south-western slope (Grabczycha) of Facimiech Mt in Pieniny Mts. By over thirty years it was the only known locality of this species in Poland. Recently two females of the inquiline were found on northern slope of Barania Góra Mt (Fig. 8).

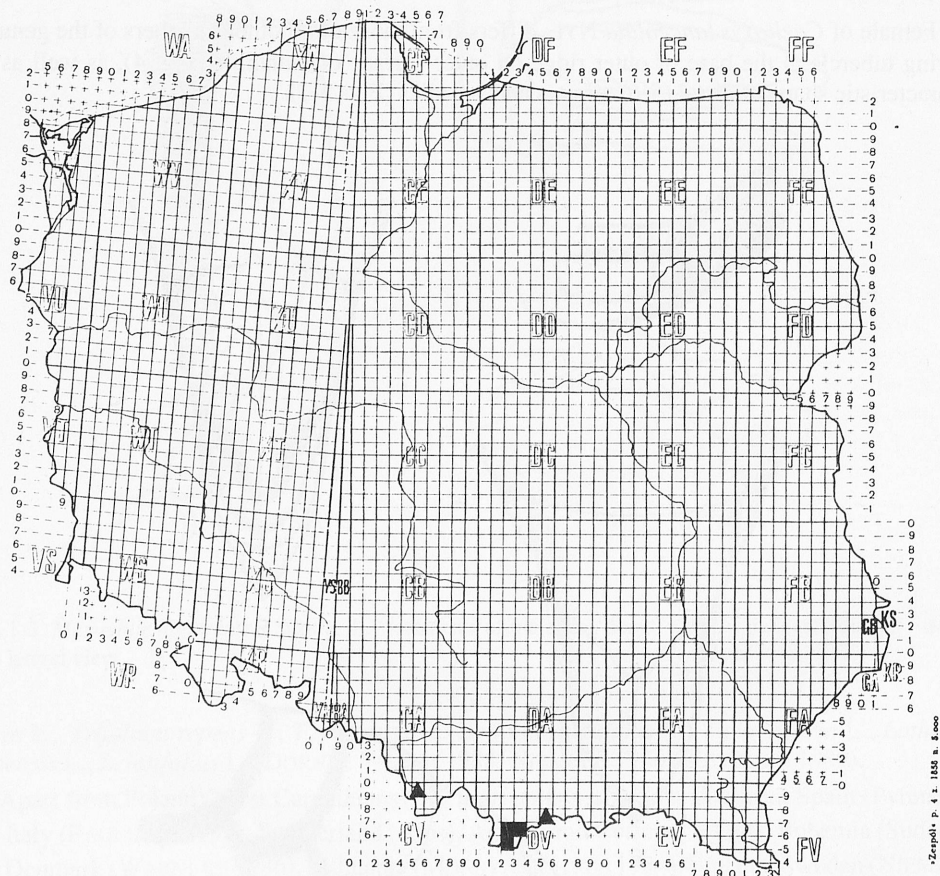


Fig. 8. Map showing the sites where material was collected: ▲ – localities of *Coelioxys lanceolata* NYL. and *Megachile nigriventris* SCHCK.; ■ – localities of *Megachile nigriventris* SCHCK.

Material examined. CV59 Barania Góra Mt, 7 July 1993, 2♀♀, on *Vicia* sp., leg. W. CELARY. DV57 Grabczycha, 20 June 1961, ♀, leg. M. DYLEWSKA.

All material is preserved in collection of the Institute of Systematics and Evolution of Animals, Polish Academy of Sciences in Kraków.

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