

Contribution to bee fauna (Hymenoptera: Apoidea) of Poland

Waldemar CELARY, Bogdan WIŚNIEWSKI

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Abstract. New records of 12 very rare species of wild bees (Hymenoptera, Apoidea) from Poland are given. Their Polish localities, distribution and bionomics are presented.

Keywords: Hymenoptera, Apoidea, distribution, bionomics, Poland.

Waldemar CELARY, Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Sławkowska 17, 31-016 Kraków, Poland.

E-mail: celary@isez.pan.krakow.pl

Bogdan WIŚNIEWSKI, Ojców National Park, 32-047 Ojców, Poland

E-mail: bogdan@isez.pan.krakow.pl

According to the updated checklist there are 469 species and subspecies of bees recorded from Poland (BANASZAK 2000a). The distribution of the most of the species is known after data published at the beginning of the XXth century and has to be confirmed. The knowledge of the bee fauna of certain regions of Poland is far from completed and is usually restricted to a checklist of recorded species. Research projects on bees which started in different parts of Poland in the 70-ties of XX century have brought some new data on occurrence and distribution of certain species in the country, but still we lack a lot of information both on the bee associations in certain plant communities and biotopes, and about the bee fauna of some regions of Poland.

The present paper gives new data on distribution of 12 rare species of bees in the country. The specimens were collected in southern Poland. For each locality the UTM coordinates are given. Material is housed in the collection of the Museum of Ojców National Park (Ojców).

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Colletidae

Hylaeus gredleri FÖRSTER, 1871

This very rare species belongs to the subgenus *Dentigera* POPOV. It occurs in southern, western and central Europe (Sicily, Italy, Corsica, France, Slovenia, Austria, Switzerland, Germany and Poland), also known from Caucasus and Ural (GOGALA 1999, PAGLIANO 1993, RASMONT et al. 1995,

SCHWARZ et al. 1996). Imagines fly from June to August. *H. gredleri* visits blooming plants of families: Apiaceae (*Daucus carota* L. and *Peucedanum cervaria* (L.) LAPEYR.), Asteraceae (*Achillea millefolium* L.), Resedaceae (*Reseda lutea* L.) and Rosaceae (*Potentilla argentea* L.). Females nest in wooden walls, wooden bars and poles or in stems of raspberry (*Rubus* L.).

Until now *Hylaeus gredleri* was known in Poland from only three stands in the Kraków-Częstochowa Upland (CELARY 1999). Recently a further two were found in Silesian Upland and Bieszczady Mts (see below).

New localities. Silesian Upland: CA57 Chorzów (open air museum): 13.06.2000 3♂♂, 14.06.2000 4♂♂, 15.06.2000 ♂ (all specimens were caught near nests in a wooden wall), leg. B. WIŚNIEWSKI Bieszczady Mts: FV04 Wetlina (alt. 700m), 17.07.1999 – ♂ on *Angelica sylvestris* L. in a meadow community by the tourist trail to Orłowicz Pass, leg. B. WIŚNIEWSKI; FV04 Wetlina (alt. 680m), 26.07.2000 – ♂ on *Heracleum sphondylium* L. in an herb community by a stream, leg. B. WIŚNIEWSKI.

Hylaeus paulus BRIDWELL, 1919

This extremely rare species belongs to the subgenus *Hylaeus* FABRICIUS. It is known from central Europe (Switzerland, Austria, Germany and Poland), also occurs in Siberia, Mongolia, Russian Far East and Japan (CELARY 1999). Adults fly from June until the end of August. *Hylaeus paulus* visits flowering plants of families: Asteraceae (*Achillea millefolium* L.), Brassicaceae (*Barbarea vulgaris* R. BR.), Crassulaceae (*Sedum acre* L.), Lamiaceae (*Glechoma hederacea* L.), Rosaceae (*Potentilla* L.) and Scrophulariaceae (*Veronica chamaedrys* L. and *V. spicata* L.). Females nest in wooden walls, wooden bars and poles or in stems of raspberry (*Rubus* L.), thistle (*Carduus* L. and *Cirsium* MILL.), nettle (*Urtica* L.), and sunflower (*Helianthus tuberosus* L.).

Until now the species was known in Poland from only three localities of the Kraków-Częstochowa Upland and Wielkopolsko-Kujawska Lowland (BANASZAK 2000b, CELARY 1999). Recently a further two in Ojców National Park were found (see below).

New localities. Kraków-Częstochowa Upland: DA16 Osicze, 2 ♀♀ reared from a nest in a twig of raspberry *Rubus idaeus* L. collected on the edge of a mixed forest *Pino-Quercetum* (twigs were collected on 19.02.2000, and imagines emerged in April 2000 leg. et cult. B. WIŚNIEWSKI); DA16 Miotłka, 28.05.2000 – ♀ on *Achillea millefolium* L., leg. B. WIŚNIEWSKI.

Hylaeus punctatus (BRULLÉ, 1832)

This very rare Subpontic-mediterranean species belongs to the subgenus *Spatulariella* POPOV. It occurs in western Asia (Iran, Syria, Israel and Turkey) and in southern Europe (Greece, Sicily, Corsica, Italy, Macedonia, Croatia, Slovenia and s. France), in central Europe is known only from its southern part: Hungary, Austria, Switzerland, s. Luxembourg, s. Germany, Czech Republic, Slovakia and s. Poland (CELARY & DYLEWSKA 1988, GOGALA 1999, MÓCZAR 1960, PAGLIANO 1993, PITTIONI 1952, RASMONT et al. 1995, SCHWARZ et al. 1996, WARNCKE 1986). Imagines fly from June to August. *Hylaeus punctatus* visits blooming plants of families: Brassicaceae (*Cardaria draba* (L.) DESV., *Sisymbrium* L.), Resedaceae (*Reseda lutea* L.), Crassulaceae (*Sedum* L.), Apiaceae (*Aegopodium podagraria* L., *Eryngium* L.), Boraginaceae (*Echium vulgare* L.) and Asteraceae (*Solidago* L.). Females make their nests in pre-existing cavities.

Until now the species was known in Poland from only four stands in the Wielkopolsko-Kujawska Lowland, Silesian Lowland, Kraków-Częstochowa Upland and Sandomierz Lowland (CELARY & DYLEWSKA 1988). *H. punctatus* was recently discovered on another locality (see below).

New locality. Małopolska Upland: DA69 Pasturka near Pińczów, 19.06.1997 – ♂ on a sandy slope, leg. B. WIŚNIEWSKI.

Hylaeus rinki (GORSKI, 1852)

The rare Eurosiberian species belongs to the subgenus of *Lambdopsis* POPOV. It is known from the eastern part of western Europe, and from central and eastern Europe, also occurs in western Asia, Mongolia, Siberia and in the south-eastern part of Russian Far East (CELARY 1999, CELARY & DYLEWSKA 1988, KOSTER 1986, MÓCZÁR 1960). Adults fly from June till end of August. The bee visits flowering plants of families: Rosaceae (*Potentilla erecta* (L.) RAEUSCH and *Rubus fruticosus* L. NOM. AMBIG.), Apiaceae (*Daucus carota* L. and *Heracleum sphondylium* L.) and Asteraceae (*Cirsium vulgare* (SAVI) TEN. and *Solidago gigantea* AITON). Females nest in wooden walls, wooden bars and poles or in stems of raspberry (*Rubus* L.).

Hylaeus rinki is known from single stands in some parts of Poland (BANASZAK & KRZYSZTOFIK 1996, CELARY 1999, CELARY & DYLEWSKA 1988, PAWLIKOWSKI et al. 1993). Recently a new locality of the species in Bieszczady National Park was found (see below).

New locality. Bieszczady Mts: FV13 Mała Rawka Mt. (alt. 1260m), 3.07.2000 – ♂ on *Angelica archangelica* L., leg. A. KLASA.

Hylaeus styriacus FÖRSTER, 1871

This rare Subpontic-mediterranean species belongs to the subgenus *Paraprosopis* POPOV. It occurs in central Europe up to 53°N, also known from southern Europe, eastern France, Ukraine and western Asia (CELARY & DYLEWSKA 1988, GOGALA 1999, KOSTER 1986, MÓCZÁR 1960, OSYTSHNIUK 1970, PAGLIANO 1993, RASMONT et al. 1995, SCHWARZ et al. 1996, WARNCKE 1986). Imagines fly from June to August. The species visits blooming plants of families: Euphorbiaceae (*Euphorbia* L.), Crassulaceae (*Sedum* L.), Rosaceae (*Rubus* L.), Apiaceae (*Anethum graveolens* L., *Anthriscus* PERS., *Daucus carota* L., *Eryngium campestre* L., *Peucedanum cervaria* (L.) LAPEYR.), Plumbaginaceae (*Armeria* WILLD.), Asteraceae (*Carlina* L., *Chrysanthemum* L., *Crepis* L.) and Liliaceae (*Allium* L.). Females nest in pre-existing cavities in wooden walls, wooden bars and poles or in stems of raspberry (*Rubus* L.), stems of thistle (*Carduus* L. and *Cirsium* MILL.) and stems of nettle (*Urtica* L.).

Hylaeus styriacus is known from a few stands in some parts of Poland (BANASZAK & KRZYSZTOFIK 1996, CELARY 2000, CELARY & DYLEWSKA 1988, PAWLIKOWSKI et al. 1993). Recently a further two localities of the species in Ojców National Park and in the Bieszczady Mts were found (see below).

New localities. Kraków-Częstochowa Upland: DA16 Grodzisko, 28.06.1989 – ♀ in a xerothermic grassland, leg. B. WIŚNIEWSKI. Bieszczady Mts: FV04 Wetlina (alt. 680m), 26.07.2000 – ♂ on *Heracleum sphondylium* L. in an herb community by a stream, leg. B. WIŚNIEWSKI.

Halictidae

Sphecodes niger VAN Hagens, 1874

The rare cuckoo bee occurs in western Turkey, and western and central Europe, also known from the northern part of southern Europe and from the western part of eastern Europe (CELARY 1991, MÓCZÁR 1967, PAGLIANO 1988, RASMONT et al. 1995, SCHWARZ et al. 1996, WARNCKE 1986, 1992). Adults fly from May to June (first generation) and from July to August (second generation). The species prefers flowers of *Daucus carota* L., *Jasione montana* L., *Achillea millefolium* L. and *Senecio jacobaea* L. Females of the cleptoparasitic bee lay their eggs in the cells of the nests of *Evylaeus morio* (FABR.).

Sphecodes niger is known from single stands in some parts of Poland (BANASZAK 2000b, CELARY 1991, PAWLIKOWSKI et al. 1993). Recently a new locality of this very rare species was discovered (see below).

New locality. Silesian Upland: CA57 Chorzów (open air museum): 14.06.2000 4♂♂, ♀, 15.06.2000 – ♀ 1.07.2000 ♀ and ♂, 16.07.2000 ♂; all specimens were found near ground nests of *Evylaeus morio*, leg. B. WIŚNIEWSKI.

Megachilidae

Megachile nigriventris SCHENCK, 1868

This very rare Boreo-montane leaf-cutter bee apart from northern Europe also occurs in the Pyrenees, Alps, Sudetes and Western Carpathians (CELARY 1995a, DORN & WEBER 1988). Imagines fly from June to August. *Megachile nigriventris* visits flowering plants of family Fabaceae (*Lathyrus* L., *Lotus* L., *Medicago* L., *Trifolium* L. and *Vicia* L.). Females nest in rotting and decaying wood (beams, stumps and boughs, sometimes door- or window-frames) where they excavate burrows. The cells of nests are built from pieces of leaves of *Betula* L., *Fagus* L., *Acer* L., *Rosa* L. and *Epilobium* L.

Until now the species in Poland was known only from a few stands in Tatras, Pieniny Mts and Beskid Śląski Mts (Carpathians)(CELARY 1995a). Recently two new localities in Bieszczady National Park were found (see below).

New localities. Bieszczady Mts: FV24 Sianki near Niedźwiedzi stream (alt. 800m), 4.07.2000 – ♀, leg. A. PALACZYK; FV24 Szczółb (alt. 770m), 4.07.2000 – ♂, leg. A. KLASA.

Anthophoridae

Nomada castellana DUSMET, 1913

This very rare cleptoparasitic bee occurs exclusively in western, southern and central Europe (CELARY 1995b). Adults fly from May to July. The species visits blooming plants of families Brassicaceae (*Sinapis arvensis* L.), Asclepiadaceae (*Vincetoxicum hirundaria* MEDIK.) and Asteraceae (*Solidago virgaurea* L.). Females of the cuckoo bee lay their eggs in the nests of *Andrena semilaevis* PER. (CELARY 1995b).

In Poland *Nomada castellana* was known exclusively from one site in Ojców National Park (CELARY 1995b). Recently a second locality in Ojców National Park was discovered (see below).

New locality. Kraków-Częstochowa Upland: DA15 Prądnik Czajowski, 1.05.2000 – ♂ on a loess slope near ground nests of andrenid species, leg. B. WIŚNIEWSKI.

Nomada conjugens HERRICH-SCHÄFFER, 1839

This rare cleptoparasitic bee occurs in northern Africa, western Asia and Europe (except for the northern part). Its northern limit of distribution reaches to 55°N (CELARY 1995b). Imagines fly from May to June. *Nomada conjugens* visits many various flowering plants, such as: *Euphorbia cyparissias* L., *Ranunculus acer* L., *Frangula alnus* MILL., *Aegopodium podagraria* L., *Veronica chamaedrys* L., *Bellis perennis* L., *Erigeron annuus* (L.) PERS. Females of the parasitic bee lay their eggs in the nests of *Andrena proxima* (KIRBY).

Until now *Nomada conjugens* in Poland was known only from three stands (CELARY 1995b). Recently a further one in Ojców National Park was found (see below).

New locality. Kraków-Częstochowa Upland: DA16 Grodzisko (Ojców National Park), 5.06.1997 ♀ in a xerothermic sward, leg. B. WIŚNIEWSKI.

Nomada sheppardana (KIRBY, 1802)

This rare parasitic bee occurs in northern Africa and Europe (except for the northern part). Its northern limit of distribution reaches to 54°N (CELARY 1995b). The species has two generations, adults fly from May to June and from July to August. *Nomada sheppardana* visits flowers of *Stellaria holostea* L., *Veronica chamaedrys* L. and *Bellis perennis* L. Females of the cuckoo bee lay

their eggs in the nests of *Evylaeus nitidiusculus* (KIRBY), *E. sextrigatus* (SCHCK), *E. morio* (FABR.) and the other small species of the genus *Evylaeus* ROBERTSON (CELARY 1995, GOGALA 1999).

Until now *Nomada sheppardana* in Poland was known from only two sites (BANASZAK 2000b, CELARY 1995b). Recently a further two stands in Ojców National Park were discovered (see below).

New localities. Kraków-Częstochowa Upland: DA16 Ojców (Ojców National Park), 1.06.1992 – ♀ on a loess slope near ground nests of various *Evylaeus* species, leg. B. WIŚNIEWSKI; DA16 Czyżówki (Ojców National Park), 25.05.2000 – ♀ on a slope on the edge of a deciduous forest *Tilio-Carpinetum*, leg. B. WIŚNIEWSKI.

Epeoloides coecutiens (FABRICIUS, 1775)

This rare cleptoparasitic bee occurs exclusively in Europe (CELARY 1990). Imagines fly from the end of June until the end of August. *Epeoloides coecutiens* visits blooming plants of *Lythrum salicaria* L., *Chamaenerion angustifolium* (L.) SCOP. and *Thymus serpyllum* L. em. FR. Females of the cuckoo bee lay their eggs in the nests of *Macropis fulvipes* (FABR.) and *Macropis europaea* WARNCKE (CELARY 1990).

This species is observed in different parts of Poland, however, even where it is found, it is very rare (CELARY 1990, PAWLIKOWSKI et al. 1993). Recently new locality of this parasitic bee was found in Ojców National Park (see below).

New locality. Kraków-Częstochowa Upland: DA16 Peperówka (Ojców National Park), 14–20.08.2000 – 6♀♀ and 21–30.08.2000 – ♀; all specimens were caught in Moericke traps placed on the ground in the overgrown fallows on the plateau, leg. B. WIŚNIEWSKI.

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