

## ***Bombus pyrenaicus* PÉREZ, 1879 (Hymenoptera, Apoidea, Apidae) in Poland**

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Received: 20 Apr., 2002

Accepted for publication: 5 June, 2002

CELARY W., FIJAŁ J., KOSIOR A. 2002. *Bombus pyrenaicus* PÉREZ, 1879 (Hymenoptera, Apoidea, Apidae) in Poland. *Acta zoologica cracoviensia*, **45**(3): 207-211.

**Abstract.** The distribution, bionomics and Polish localities of *Bombus pyrenaicus* PÉREZ are described. Its range and all known stands in Poland are evidenced. The locality in Bieszczady Mts. is the first record of the species for the Polish Eastern Carpathians.

**Key words:** Hymenoptera, Apidae, *Bombus*, distribution, bionomics, Poland.

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### I. INTRODUCTION

*Bombus pyrenaicus* PÉREZ belongs to the subgenus *Pyrobombus* DALLA TORRE and is the only high montane bee in Polish fauna (DYLEWSKA 1996). Data on its bionomics and distribution are scattered in various papers.

The present paper summarizes all available information and gives new data on this species.

### II. BIONOMICS

Biology of the bumblebee is still poorly known. The warm spring weather usually wakes up overwintered females (queens) from their dormancy in the early days of May (BANASZAK 1993, DYLEWSKA 1996). They leave the hibernaculum to find food. Next, each female begins searching for a nest site. *Bombus pyrenaicus* nests underground, often favouring an old rodents nest or, above ground, under the tussock, collecting a pile of dry grass and moss to cover the cells. As the season progresses, the colony enlarges and usually is fully developed in late July. A mature colony contains from 50 to 120 individuals (PAWLIKOWSKI 1996). Young queens and males are reared since end of July, and from this time on they leave the nest. They mate several times. The males die after the mat-

ing season. The fertilized females (queens) search for a quiet and dry nook (so called hibernaculum) and go into hibernation. The cycle begins again the following year.

*Bombus pyrenaicus*, while collecting nectar and pollen, visits numerous plants growing in mountain. The list of food plants is very long; in Poland it contains 63 floral plants of 22 families (CELARY 1988, DYLEWSKA 1958, 1966; DYLEWSKA et al. 1998, KOSIOR 1990, WITKOWSKI and KOSIOR 1996). The special favourites are *Crocus scepusiensis* (REHM. & WOL.) BORB., thistles (*Carduus* L. and *Cirsium* MILL.) and bilberries (*Vaccinium* L.).

### III. DISTRIBUTION

The species lives exclusively in high mountains of Europe, where the subalpine zone is developed (Fig. 1). Till now it was recorded from Piemont (Val Germanasca) in Italy (PAGLIANO 1993), Pyrenees (RASMONT et al. 1995) and Alps (WARNCKE 1986, SCHWARZ et al. 1996).

In the Carpathians and mountains of the Balkans, *Bombus pyrenaicus* was found only in the higher ridges and massives. In Ukraine (Ukrainian Carpathians) the bumblebee is known from Mentshul Mt. in Shvidoviets range and from Goverla Mt. in Chernagora range (OSYTSCHNJUK 1961). In Slovakia it inhabits West and High Tatra, Slovakian Karst, and Lesser and Greater Fatra Mts. (BELÁKOVÁ 1980). In Rumania it occurs in Bucegi Mts. and in Retezat Mts., the ranges of Transylvanian Alps (KNECHTEL 1955).

*Bombus pyrenaicus* was recorded also from a few mountain regions in the Balkans. In Bulgaria it was given from Vitosha Mts., Rila Mts. and from North Rhodopes. Moreover, the species was recorded from the Dinaric Alps (Durmitor Mts., Rikavac and Kobelitsa) in South Bosnia and Montenegro, and from Sar Mts. in Macedonia (PITTIONI 1938).



Fig. 1. Distribution of *Bombus pyrenaicus* PÉREZ in Europe.

IV. STANDS IN POLAND

Until now *Bombus pyrenaicus* was known in Polish Carpathians from Beskid Żywiecki Mts., Gorce Mts. and from Tatra Mts. Recently the high montane bumblebee was discovered in Bieszczady Mts. (Fig. 2). All data concerning Polish stands are presented below (each locality has the UTM coordinates).

Polish records. **Beskid Żywiecki Mts.** Pilsko Mt. – CV78: Hala Cebulowa clearing in the forest, Hala Miziowa clearing in the forest, Hala pod Pięcioma Kopcami clearing in the forest, Hala Słowikowa clearing in the forest, nature reserve „Pilsko” (WITKOWSKI, KOSIOR 1996). Babia Góra Mt. – CV89 Hala Mędralowa clearing in the forest (DYLEWSKA 1966); CV99: Cyl peak and Czarna Cyrhel clearing in the forest (CELARY 1998), Diablak peak (CELARY 1998, DYLEWSKA 1966), Hala Czarnego meadow, Hala Gubernasówka meadow, Kamienna Dolinka gorge (CELARY 1998), Kościółki peak and Markowe Szczawiny clearing in the forest (CELARY 1998, DYLEWSKA 1966),

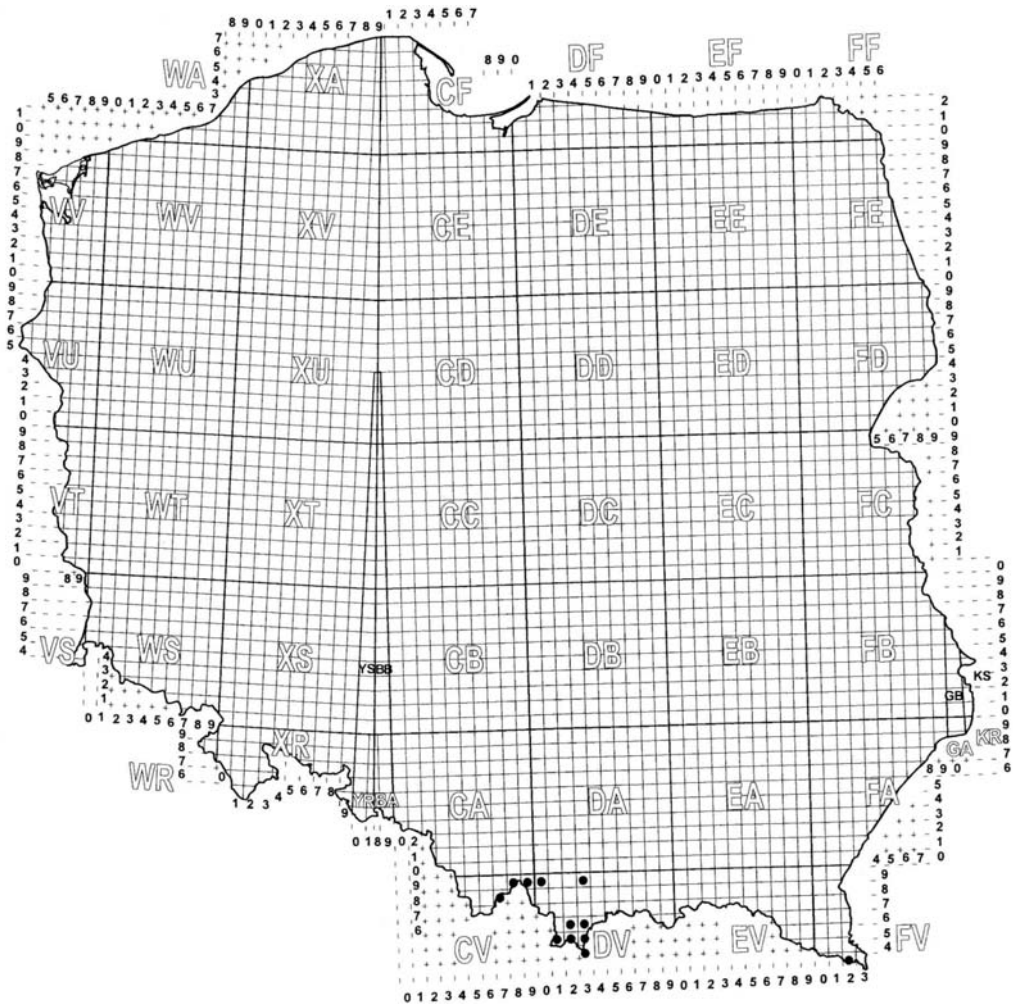


Fig. 2. Localities of *Bombus pyrenaicus* PÉREZ in Poland.

Sokolica peak (DYLEWSKA, 1966). Polica Mt. – DV09 Hala Krupowa clearing in the forest (DYLEWSKA 1998). **Tatra Mts.** – DV15: Dolina Kościeliska valley, Hala Ornak clearing in the forest, Kiry, Kominy Tylkowe Mt., Iwaniacka pass (DYLEWSKA 1958); Polana Chochołowska clearing in the forest, Polana Niżnia Kominiarska clearing in the forest, Przysłop Miętusi clearing in the forest (KOSIOR 1990); Siwe Sady, Smreczyński Wierch Mt. (DYLEWSKA 1958); Wielka Polana clearing in the forest in Dolina Małej Łąki valley (KOSIOR 1990); Żar Mt., Żleb Staników gorge (DYLEWSKA 1958). DV25: Beskid Mt., Ciemniak Mt., Czarny Staw Gąsienicowy lake, Czoła Jaworzyńskie, Dolina Gąsienicowa valley, Dolina Kasprowa valley, Dolina Pięciu Stawów valley (DYLEWSKA 1958); Dolina Strążyńska valley (DYLEWSKA, 1958, NOSKIEWICZ 1920); Dolina Suche Wody valley, Droga pod Regłami road, Grzybowiec Mt., Kalacka Turnia Mt., Karczmisko (DYLEWSKA 1958); Kasprowe Ukrocie Mt. (DYLEWSKA 1958, NOSKIEWICZ 1920); Krokiew Mt. (NOSKIEWICZ 1920); Krzesanica Mt., Kuźnice (DYLEWSKA 1958); Małolącziak Mt. (DYLEWSKA 1958, NOSKIEWICZ 1920); Myślenickie Turnie Mt., Piekło gorge (DYLEWSKA 1958); Polana Kalatówki clearing in the forest, Polana Kondratowa clearing in the forest, Polana Kopieniec clearing in the forest (KOSIOR 1990); Pośrednia Turnia Mt., Rówienki clearing in the forest, Skrajna Turnia Mt. (DYLEWSKA 1958); Tomanowa pass (NOSKIEWICZ 1920). DV26 Gubałówka Mt. and DV34 vicinity of Morskie Oko lake (DYLEWSKA 1958). DV35: vicinity of Długi Staw Gąsienicowy lake, Dolina Białej Wody valley, Dolina Filipki valley, Dolina Roztoki valley (DYLEWSKA 1958); Hala Gąsienicowa meadow (NOSKIEWICZ 1920); Krzyżne pass, Opalone Mt. (DYLEWSKA 1958); Polana Rusinowa clearing in the forest, Polana Waksmundzka clearing in the forest (KOSIOR 1990); Wodogrzmoty Mickiewicza waterfall (DYLEWSKA 1958). DV36 Toporowa Cyrhla (DYLEWSKA 1958). **Gorce Mts.** – DV39: Dolina Kamienicy valley, Bieniowe clearing in the forest, clearing in the forest on slope of the Jaworzyna Mt, clearing in the forest on the summit of the Kudłoń Mt (DYLEWSKA i in. 1998).

New locality. **Bieszczady Mts.**: FV23 Tarnica Mt. (1346 m a.s.l.), 16 July 2001 – +, leg. A. KOSIOR.

## V. VERTICAL DISTRIBUTION

Depending on the mountain range, *Bombus pyrenaicus* lives in various altitudes. According to WESTRICH (1989), in the Alps and Pyrenees it occurs between 1900 and 2700 m a.s.l. In the Transylvanian Alps the bumblebee was found from 1400 m a.s.l. on (KNECHTEL 1955). In the Balkans it was recorded from altitudes 1000-1200 m and 1800 m in North Rhodopes and from Dinaric Alps from 1300 m and between 1400 and 2400 m a.s.l. (PITTIONI 1938).

In the Polish Carpathians the species inhabits from about 900 m a.s.l. on (DYLEWSKA 1996). *Bombus pyrenaicus* nests mainly in a subalpine zone. It prefers clearings in the lower and upper mountain forest zone and meadows in the alpine zone, where it is the most numerous. In the alpine zone (in Tatra Mts. 1800-2300 m a.s.l.) *Bombus pyrenaicus* is a dominant bee (PAWLIKOWSKI 1996).

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