



Materials to the knowledge of Polish sawflies. The genus *Dolerus* Panzer, 1801 (Hymenoptera, Symphyta, Tenthredinidae, Selandriinae). Part I – an introduction and actual checklist of Polish species

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ABSTRACT

The paper presents the current state of knowledge of Polish species of the genus *Dolerus* Panz., with the updated list of species reported from Poland.

Keywords: Hymenoptera, Symphyta, Tenthredinidae, Selandriinae, *Dolerus*, sawflies, Poland, checklist

Introduction

The genus *Dolerus* Panzer includes Palaearctic, Nearctic and Oriental species, being best represented on the cold temperate areas of the Eurasian continent. The first faunistic information on the occurrence of *Dolerus* Panzer in Poland were given by Zaddach (1859), who reports 6 spp. from the vicinity of Gdańsk. Further records came from Galicia (Nowicki-Siła 1864), but the majority of species mentioned in that publication – with the only exception of one from near Cracow – had been collected on the territories currently belonging to Ukraine. The works of Wierzejski (1868) and Niezabitowski-Lubicz (1896, 1899) also

concern Galician Hymenoptera, but the authors report more than ten species from the present Precarpathia and Upper Silesia, while further 3 from the vicinities of Gdańsk, Sopot and Lower Silesia have been mentioned in the taxonomically important publication of Brischke & Zaddach (1883). At the beginning of XX century Dittrich (1905) published the hitherto the most comprehensive faunistic paper on Polish Symphyta, in which he reports as many as 30 spp. of *Dolerus*. Somewhat later Meyer (1912) presents faunistic data from the Poznań area, whereas publications on the symphytans of Great Poland and Poznań (Szulczewski 1922, 1939; Ruszkowski 1925), Białowieża Primaeval Forest (Bischoff 1925), Słupsk vicinities (Karl 1925), Upper Silesia (Torka 1929), as well as the entire Poland (Obarski 1931a, 1931b) appeared during the interwar period. After the World War II authors of some applied entomological works (Miczulski 1964; Bogucka-Kaster 1970; Luterek 1977; Miczulski 1980; Miczulski & Lipińska 1988) mentioned usually the commonest species collected on plantations of various cultivated plants, and several faunistic publications appeared with lists of species from various areas of the country: Lublin area (Cmoluch & Piotrowski 1975), Pieniny (Huflejt 1976), Białowieża Primaeval Forest (Trojan & al. 1994; Floren & Kraus 2006) or Gorce National Park (Sołtyk 2006).

The newest catalogue of the world Symphyta lists 259 species of the genus *Dolerus*, most of them divided between 9 subgenera. Analysis of faunistic data from various Central European countries suggests that some 40 spp. might be expected to occur on that area. Hitherto published lists of Polish taxa give the following numbers:

- Dittrich (1905) – 24 spp.;
- Liston (1995) – 17 spp. in 5 subgenera;
- Huflejt (1997) – 34 spp. in 6 subgenera;
- Skibińska & Chudzicka (2004) – 34 spp.;
- Taeger & al. (2006) – 26 spp. in 7 subgenera.

So great disparity between Polish and German data undoubtedly results from the taxonomic confusion still remaining as regards the genus containing many deceptively similar species, usually identifiable only on examination of male genitalia. A part of taxonomic problems concerning taxa occurring in Poland had been recently solved (Haidemaa & Viitasaari 2009), but many others probably cannot be clarified without genetic studies and rearing of various species.

To sum up, the list of Polish species belonging to the genus *Dolerus*, with *Dolerus vulneratus* Mocs. recently (Borowski & al. 2017) recorded as new to Central Europe and Poland, contains 38 species enumerated (with synonymy, grouped according to the host-plants) below:

An actual list of *Dolerus* Panz. species recorded from Poland

Used abbreviations:

[HN] – homonym

[NO] – nomen oblitum

* remarks added

Species developing on common spikerush – *Elocharis palustris* (L.) Roem. & Schult.

1. *Dolerus (Cyperolerus) anticus anticus* (Klug, 1818)

syn. *Dolerus klugii* Lepeletier, 1823

Species developing on rushes – *Juncus* spp.

2. *Dolerus (Achaetoprion) ferrugatus* Serville, 1823

syn. *Dolerus ferrugatus* Lepeletier, 1823 [HN]

syn. *Dolerus brevicornis* Thomson, 1871

syn. *Dolerus thomsoni* Konow, 1884

3. *Dolerus (Achaetoprion) madidus* (Klug, 1818)

syn. *Dolerus lateritius* (Klug, 1818)

syn. *Dolerus chapelli* Cameron, 1877

syn. *Dolerus lamprehti* Konow, 1884

4. *Dolerus (Achaetoprion) triplicatus* (Klug, 1818)

syn. *Dolerus tremulus* (Klug, 1818)

syn. *Dolerus dimidiatus* Serville, 1823

syn. *Dolerus trimaculatus* Serville, 1823

syn. *Dolerus lugubris* Gimmerthal, 1834

syn. *Dolerus steini* Konow, 1885

5. *Dolerus (Achaetoprion) uliginosus* (Klug, 1818)

Species developing on horsetails – *Equisetum* spp.

6. *Dolerus (Dolerus s. str.) aericeps* Thomson, 1871

syn. *Dolerus bajulus* Serville, 1823 [NO]

syn. *Dolerus bajulus* Lepeletier, 1823 [HN]

syn. *Dolerus mandibularis* Konow, 1884

syn. *Dolerus rufipes* Konow, 1888

7. *Dolerus (Dolerus s. str.) bimaculatus* (Geoffroy, 1785)

syn. *Dolerus tristis* (Fabricius, 1804)

syn. *Dolerus saxatilis* Hartig, 1837

8. *Dolerus (Dolerus s. str.) cothurnatus* Serville, 1823

syn. *Dolerus palustris* (Klug, 1818) [HN]

syn. *Dolerus cothurnatus* Lepeletier, 1823 [HN]

syn. *Dolerus busaei* Snellen van Vollenhoven, 1858

9. *Dolerus (Dolerus s. str.) germanicus germanicus* (Fabricius, 1775)

syn. *Dolerus hortorum* (O.F. Müller, 1776)

syn. *Dolerus melanocephalus* (Geoffroy, 1785)

syn. *Dolerus eglanteriae* (Fabricius, 1793)

syn. *Dolerus pedestris* (Panzer, 1801)

syn. *Dolerus subfuscus* (Lepeletier, 1823)

syn. *Dolerus xanthopus* (Stephens, 1835)

syn. *Dolerus quadricinctus* (Zetterstedt, 1838)

syn. *Dolerus fennicus* André, 1880

syn. *Dolerus rufipes* Gradl, 1881 [HN]

10. *Dolerus (Equidolerus) gessneri* André, 1880

syn. *Dolerus labiosus* Konow, 1897

syn. *Dolerus kamtchaticus* Malaise, 1931

11. *Dolerus (Equidolerus) pratensis* (Linnaeus, 1758)

syn. *Dolerus dubius* (Klug, 1818)

syn. *Dolerus timidus* (Klug, 1818)

syn. *Dolerus desertus* (Klug, 1818)

syn. *Dolerus hyalinalis* (Stephens, 1835)

syn. *Dolerus variator* Enslin, 1927

12. *Dolerus (Oncodolerus) eversmanni eversmanni* W.F. Kirby, 1882

syn. *Dolerus palmatus* (Klug, 1818) [HN]

syn. *Dolerus fumosus* Eversmann, 1847 [HN]

syn. *Dolerus trigeminus* Konow, 1884

13. *Dolerus (Dicrodolerus) genucinctus* Zaddach, 1859

syn. *Dolerus annulipes* Thomson, 1871

14. *Dolerus (Dicrodolerus) vestigialis vestigialis* (Klug, 1818)

syn. *Dolerus plaga* (Klug, 1818)

syn. *Dolerus rufipes* Serville, 1823

syn. *Dolerus rufipes* Lepeletier, 1823 [HN]

15. *Dolerus (Loderus) pratorum* (Fallén, 1808)

syn. *Dolerus equiseti* (Klug, 1818)

Species developing on sedges – *Carex* spp.

16. *Dolerus (Poodolerus) asper* Zaddach, 1859

*syn. *Dolerus fumosus* Zaddach, 1859 [HN]

*syn. *Dolerus zaddachi* Kirby, 1882

syn. *Dolerus oblongus* Cameron, 1882

syn. *Dolerus megapteroides* Muche, 1964

17. *Dolerus (Poodolerus) blanki* Liston, 1995

syn. *Dolerus thoracicus* (Fallén, 1808) [HN]

syn. *Dolerus thoracicus* (Klug, 1818) [HN]

18. *Dolerus (Poodolerus) brevicornis* Zaddach, 1859

syn. *Dolerus tectus* MacGillivray, 1914

19. *Dolerus (Poodolerus) gibbosus* Hartig, 1837

syn. *Dolerus planatus* Hartig, 1837

20. *Dolerus (Poodolerus) haematodes* (Schrank, 1781)

syn. *Dolerus collaris* (Donovan, 1808)

syn. *Dolerus obtusicornis* (Dahlbom, 1835)

syn. *Dolerus coerulescens* Hartig, 1837

syn. *Dolerus micans* Zaddach, 1859

syn. *Dolerus muliebris* Enslin, 1909

21. *Dolerus (Poodolerus) stygius* Förster, 1860

syn. *Dolerus megapterus* Cameron, 1881

syn. *Dolerus carinatus* Konow, 1884 [HN]

syn. *Dolerus crassus* Konow, 1884

syn. *Dolerus megalopterus* Schulz, 1906

syn. *Dolerus eutropis* Speiser, 1908

22. *Dolerus (Poodolerus) zhelochovtsevi* Heidemaa & Viitasaari, 2009

Species developing on grasses – Graminae

23. *Dolerus (Poodolerus) aeneus* Hartig, 1837

syn. *Dolerus longicornis* Zaddach, 1859

syn. *Dolerus incertus* Zaddach, 1859

syn. *Dolerus elongatus* Thomson, 1871

syn. *Dolerus zaddachi* Konow, 1886 [HN]

24. *Dolerus (Poodolerus) anthracinus* (Klug, 1818)

syn. *Dolerus mutilatus* (Klug, 1818)

syn. *Dolerus atricapillus* Hartig, 1837

syn. *Dolerus violaceus* Pigeot, 1918

25. *Dolerus (Poodolerus) frigidus* Benson, 1965

26. *Dolerus (Poodolerus) fumosus* Stephens, 1835

syn. *Dolerus brachygaster* Hartig, 1837

syn. *Dolerus brevis* Zaddach, 1859

syn. *Dolerus gracilis* Zaddach, 1859

syn. *Dolerus ravus* Zaddach, 1859

27. *Dolerus (Poodolerus) gonager* (Fabricius, 1781)

syn. *Dolerus erythrogonus* (Schrank, 1781)

syn. *Dolerus geniculatus* (Geoffroy, 1785)

syn. *Dolerus femoratus* Eversmann, 1847

syn. *Dolerus magnicornis* Eversmann, 1847

syn. *Dolerus lucidus* Zirngiebl, 1930 [HN]

28. *Dolerus (Poodolerus) liogaster liogaster* Thomson, 1871

syn. *Dolerus annulatus* Stein, 1894

29. *Dolerus (Poodolerus) niger* (Linnaeus, 1767)

syn. *Dolerus angustus* (Gmelin, 1790)

30. *Dolerus (Poodolerus) nigratus* (O.F. Müller, 1776)

syn. *Dolerus canescens* (Gmelin, 1790)

syn. *Dolerus cenchris* Hartig, 1837

syn. *Dolerus leucobasis* Hartig, 1837

syn. *Dolerus fissus* Hartig, 1837

syn. *Dolerus hartigii* Scholtz, 1848

syn. *Dolerus analis* Konow, 1890

31. *Dolerus (Poodolerus) nitens* Zaddach, 1859

syn. *Dolerus coruscans* Konow, 1890

syn. *Dolerus wanda* Ross, 1935

32. *Dolerus (Poodolerus) picipes* (Klug, 1818)

syn. *Dolerus brevitarsus* Hartig, 1837

syn. *Dolerus leucopterus* Zaddach, 1859

syn. *Dolerus ochroneurus* Förster, 1860

syn. *Dolerus intermedius* Cameron, 1881

syn. *Dolerus raddatzi* Konow, 1884

syn. *Dolerus sulcatus* Konow, 1884

33. *Dolerus (Poodolerus) puncticollis* Thomson, 1871

syn. *Dolerus croaticus* Konow, 1890

34. *Dolerus (Poodolerus) sanguinicollis* (Klug, 1818)

syn. *Dolerus lucens* André, 1880

35. *Dolerus (Poodolerus) varispinus* Hartig, 1837

syn. *Dolerus rugosus* Konow, 1884 [HN]

syn. *Dolerus rugosulus* Dalla Torre, 1894

Species of unknown host-plant.

36. *Dolerus (Poodolerus) coracinus* (Klug, 1818)

37. *Dolerus (Poodolerus) harwoodi* Benson, 1947

38. *Dolerus (Poodolerus) vulneratus* Mocsáry, 1878

* *D. fumosus* Zaddach, 1859 was described from – among others – the vicinities of Gdańsk. This name being, however, a primary homonym of *Dolerus fumosus* Stephens, 1829, and W.F. Kirby (1882) rebaptised the species as *Dolerus zaddachi* to honour its discoverer. During more than two decades the taxon was omitted in almost all elaborations of Central European Symphyta, only Dittrich (1905) mentioned it from three Lower Silesian localities: Wrocław, Domaszczyna and Jedlina Zdrój. Enslin (1909, 1913, 1914) shown this species as

the synonym of *D. carbonarius* Zaddach, 1859. Huflejt (1997) placed *D. fumosus* Zadd. among synonyms of *D. asper* Zadd. In the world catalogue (Taeger & al. 2010) *D. zaddachi* Kirby was not included in any of the known subgenera and mentioned – with few others (e.g. *D. carbonarius* Zadd.) – in the group of „Unplaced *Dolerus*”. Analysis of Zaddach’s description, taking into consideration the placement in Kirby’s list and the data provided by Dittrich, make it certain that the species belongs to the genus *Dolerus* and almost surely to the subgenus *Poodolerus* Zheloch. Because Zaddach’s collection does not exist, and there are not any specimens of *D. fumosus* Zadd. in Dittrich’s collection, at this moment I leave *D. zaddachi* as a synonym of *D. asper*.

References

- [1] Bischoff H. 1925. Hymenoptera (Aculeata, Ichneumonidae, Chalastogastra). In: Beiträge zur Natur- und Kulturgeschichte Lithuauens und angrenzender Gebiete. Abhandlungen der Bayerischen Akademie der Wissenschaften, Suppl. 7: 278-337
- [2] Bogucka-Kaster H. 1970. Entomofauna rosy miodowej sporyszu – *Claviceps purpurea* Tul. Polskie Pismo Entomologiczne, 40(3): 577-581
- [3] Borowski J., Plewa R., Jaworski T. & Hilszczański J. 2017. *Dolerus (Poodolerus) vulneratus* Mocsáry, 1878 (Hymenoptera, Symphyta: Tenthredinidae) – a sawfly species new for the Polish fauna. World Scientific News, 69 (2017) 236-238
- [4] Brischke C.G.A. & Zaddach G. 1883. Beobachtungen über die Arten der Blatt- und Holzwespen, 2: 201-328 +8 pls.
- [5] Cmoluch Z. & Piotrowski W. 1975. Materiały do znajomości rośliniarek (Symphyta, Hymenoptera) Lublina i jego okolic. Polskie Pismo Entomologiczne, 45: 565-570
- [6] Dittrich R. 1905. Verzeichnis der bisher in Schlesien aufgefundenen Hymenopteren. II. Chalastogastra. Zeitschrift für Entomologie, 30: 23-47
- [7] Enslin E. 1909. Systematische Bearbeitung der europäischen Arten des Tenthrediniden-Genus *Dolerus* Jur. (Hym.). Deutsche Entomologische Zeitschrift, 1909(5) 595-608
- [8] Enslin E. 1913. Die Tenthredinoidea Mitteleuropas II. Deutsche Entomologische Zeitschrift, 1913(2): 99-202
- [9] Enslin E. 1914. Die Blatt- und Holzwespen (Tenthrediniden) Mitteleuropas, insbesondere Deutschlands. - In: Schröder Ch. (ed.): Die Insekten Mitteleuropas insbesondere Deutschlands. Hymenopteren. Franckh'sche Verlagshandlung, Stuttgart 3(3): 95-213 + 4 pls.
- [10] Floren A. & Karus M. 2006. Sawflies (Hymenoptera: Symphyta) from temperate primary forests and forest plantations of East-Poland collected by insecticidal knockdown fogging. pp. 143-156. In: Blank S.M., Schmidt S. & Taeger A. (eds), Recent Sawfly Research: Synthesis and Prospects, Goecke & Evers, Keltern. 704 pp.
- [11] Heidemaa M. & Viitasaari M. 2009. pp. 24-29. In: Blank S.M., Taeger A., Liston A.D., Smith D.R., Rasnitsyn A.P., Shinohara A., Heidemaa M. & Viitasaari M. 2009. Studies toward a World Catalog of Symphyta (Hymenoptera), Zootaxa, 2254: 1–96

- [12] Huflejt T. 1978. Materiały do znajomości rośliniarek (Hymenoptera, Symphyta) Pienin. *Fragmenta Faunistica*, 21(4): 95-113.
- [13] Huflejt T. 1997. 24. Hymenoptera – Błonkówki. Symphyta – Rośliniarki. pp. 7-42. In: Razowski J. (ed.), *Checklist of Animals of Poland, Vol. V, Part XXXII/24, Hymenoptera – Postscript*. Wydawnictwo I SiEZ PAN, Kraków, 260 pp.
- [14] Karl O. 1925. Tenthredinoidea aus der Umgebung von Stolp. *Abhandlungen und Berichte der Pommerschen Naturforschenden Gesellschaft, Stettin*, 6: 39-44.
- [15] Kirby W.F. 1882. *List of Hymenoptera with Descriptions and Figures of the Typical Specimens in the British Museum. 1. Tenthredinidae and Siricidae, Vol. 1. By order of the Trustees, London*, 450 pp.
- [16] Liston A.D. 1995. *Compendium of European Sawflies. List of species, modern nomenclature, distribution, foodplants, identification literature*. Chalastos Forestry, Gottfrieding. 190 pp.
- [17] Luterek D. 1977. Tenthredinidae (Insecta, Hymenoptera) występujące na zbożach w okolicach Poznania. *Roczniki Akademii Rolniczej w Poznaniu*, 97(Rolnictwo, 19): 95-103.
- [18] Meyer R. 1912. Die Tenthrediniden der Provinz Posen. *Zeitschrift der Naturwissenschaftlichen Abteilung*, 19(1-3): 69-74.
- [19] Miczulski B. 1964. Błonkówki (Hymenoptera) w biocenozie upraw rzepaku. Część I. Rośliniarki (Symphyta). *Polskie Pismo Entomologiczne, ser. B, z. 3-4*: 189-201.
- [20] Miczulski B. 1980. Materiały do znajomości fauny błonkówek (Hymenoptera) upraw zbożowych w okolicach Lublina. *Roczniki Nauk Rolniczych, ser. E, 10(1-2)*: 27-58
- [21] Miczulski B. & Lipińska T. 1988. Występowanie rośliniarek (Hymenoptera, Symphyta) w łąkach pszenicy ozimej i jęczmienia jarego. *Polskie Pismo Entomologiczne*, 58: 673-684
- [22] Niezabitowski-Lubicz E. 1897. Przyczynek do fauny rośliniarek (Phytophaga) Galicyi. *Sprawozdanie Komisji Fizyograficznej*, 34(II): 3-18.
- [23] Niezabitowski-Lubicz E. 1899. Materiały do fauny rośliniarek (Phytophaga) Galicyi. *Sprawozdanie Komisji Fizyograficznej*, 32(II): 63-74
- [24] Nowicki – Siła M. 1864. Przyczynek do owadniczej fauny Galicyi. *Univ. press., Karków*. pp 49-50.
- [25] Obarski J. 1931a. Rośliniarki (Tenthredinoidea) nowe dla fauny Polski. *Polskie Pismo Entomologiczne*, 10(1): 40-50
- [26] Obarski J. 1931b. Materiały do fauny rośliniarek (Tenthredinoidea, Hymenoptera) Polski, II. *Fragmenta Faunistica Musei Zoologici Polonici*, 1(13): 361-370
- [27] Szulczewski J.W. 1922. Obecny stan badań nad fauną błonkówek Wielkopolskich. *Sprawozdanie Komisji Fizjograficznej*, 55/56: 98-101
- [28] Skibińska E., Chudzicka E. 2004: Pilarzowate Tenthredinidae: 276-277, 280-285. – In: Bogdanowicz W., Chudzicka E., Pilipiuk I. & Skibińska E. (eds), *Fauna Polski*.

- Charakterystyka i wykaz gatunków. T. I. Muzeum i Instytut Zoologii PAN, Warszawa. 509 pp.
- [29] Sołtyk D. 2006. Pilarzowate (Hymenoptera; Tenthredinidae) Gorczańskiego Parku Narodowego. Badania wstępne. Ochrona Beskidów Zachodnich, 1: 165-169
- [30] Stephens J.F. 1935. Illustrations of British Entomology; or, a Synopsis of Indigenous Insects: containing their generic and specific distinctions; with an account of their metamorphosis, times of appearance, localities, food, and economy, as far as practicable. Mandibulata. Vol. VII. Baldwin and Cradock, London, 310 pp + errata + pls: 35-40.
- [31] Szulczewski J.W. 1939. Błonkówki (Hymenoptera). Część I. Liściarki (Tenthredinoidea). Prace Monograficzne nad Przyrodą Wielkopolskiego Parku Narodowego w Ludwikowie pod Poznaniem, 1939(6): 1-30.
- [32] Taeger A., Blank S.M. & Liston A.D. 2006. European Sawflies (Hymenoptera: Symphyta) – A Species Checklist for the Countries. pp. 399-504. In: Blank S.M., Schmidt S. & Taeger A. (eds), Recent Sawfly Research: Synthesis and Prospects, Goecke & Evers, Kelttern. 704 pp.
- [33] Taeger A., Blank S.M. & Liston A.D. 2010. World Catalog of Symphyta (Hymenoptera). Zootaxa, 2580: 1-1064
- [34] Torka V. 1929. Blattwespen Oberschlesiens. Zeitschrift für Entomologie, 17(1): 1-7
- [35] Trojan P., Bańkowska R, Chudzicka E, Pilipiuk I, Skibińska E., Sterzyńska M. & Wytwer J., 1994. Secondary succession of fauna in the pine forests of Puszcza Białowieska. Fragmenta faunistica, 37(1): 3-104
- [36] Wierzejski A. 1868. Przyczynek do fauny owadów błonkoskrzydłych (Hymenoptera). Sprawozdanie Komisji Fizyograficznej, 2: 108-120
- [37] Zaddach G. 1859. Beschreibung neuer oder wenig bekannter Blattwespen aus dem Gebiete der preussischen Fauna. 40 pp. + 17 figs. In: Horkel J. (ed.), Zur öffentlichen Prüfung der Schüler des Königlichen Friedrichs – Collegiums am Montag den 3. und am Dienstag den 4. October 1859. Schultze Hofbuchdruckerei, Königsberg.

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