

Instytut Biologii UMCS
Zakład Zoologii
Instytut Ochrony Roślin w Poznaniu

Józefa HUBICKA, Wojciech WAŁKOWSKI

**A New Species of the Genus *Dicraeus* L w. (Diptera, Chloropidae)
from Poland**

Nowy gatunek rodzaju *Dicraeus* L w. (Diptera, Chloropidae) w Polsce

Новый вид рода *Dicraeus* L w. (Diptera, Chloropidae) в Польше

Studies on the occurrence of *Diptera* of the *Chloropidae* family in the grassy habitats of Poland revealed a species of the genus *Dicraeus* Lw. never described until now.

In 1971 and 1972 adult forms of this species were found by J. Hubicka in the environs of Lublin and in 1974 by W. Wałkowski in the environs of Poznań. Observations made in local conditions permitted the authors to ascertain that the young forms of this species feed on *Bromus mollis* L. In laboratory culture were obtained adult forms whose appearance was identical with that of the specimens found in local conditions. This species has been called *Dicraeus polonicus*.

Male. Length of body: 1.8—2 mm. Body — black with grey hue, partly brown and yellow.

Head slightly wider than thorax; its length shorter than its width. The prevailing part of surface — black, whereas the front part of the genae, tempora, the front parts of the face and frons — yellow. The frons is longer than its width. The frons triangle reaches 0.5 to 0.7 of the frons length. It is black-brown, downy, with light polish. The inside and the outside vertex setae, as well as the setae behind vertex are of almost equal length. The setae behind vertex are directed towards each other. Occiput, the posterior part of genae and vertex are black. Geno-temporal angle — obtuse. Black hairs sparsely placed on genae. Height of genae slightly longer than width of third antennae segment. Third segment of

antennae rounded at the front, light-brown outside, yellow on the inner side, darkened along upper margin. Its width is longer than its length. Arista — black, with sparsely placed, short hairs in its apical part.

Thorax on dorsal side — black, downy, with sparse and short hairs placed flatwise. Scutellum with rounded margin, shorter than its width at the base. Apical setae equal to the length of scutellum. Notopleural setae 1+1. Wings — transparent, glassy, with brownish veins. Vein *c* distinctly reaches m_{1+2} and does not change its thickness after the orifice of vein r_{4+5} has been crossed. Length of the part of vein *c* between r_1 and r_{2+3} is only slightly more than twice the length of the part of vein *c* between the orifices r_{2+3} and r_{4+5} (Fig. 5). Vein r_{2+3} in its apical part is curved towards r_1 . Vein r_{4+5} is slightly curved in its base part, whereas in its apical part it goes parallelly to m_{1+2} . Vein m_{1+2} is also curved from the orifice of transverse vein *r-m* and in the final part it straightens its way. Due to curving of the veins r_{4+5} and m_{1+2} , the space of wing membrane between these curves is wider than the width of the space confined by the parallel pace of these veins. Halteres — yellow. Sides of thorax, except a yellow cuneus under mesopleurae, black. Pleurae down unevenly sprinkled and in the places of sparse down they retain a metallic polish. Limbs, together with feet, black-grey-brown; only the apexes of femora, tibiae, and the first segments of the anterior limbs feet have a yellow hue.

Abdomen in its base part — yellow, while towards the apex it takes on the brown-yellow colour. Intensity of yellow colour of the tergites varies in particular specimens. Male copulatory apparatus has the epandrium ring (Fig. 1a) closed, rather small, dark brown, delicately haired on the whole surface, and besides, is provided with scarce, long and quite flaccid setae. On internal side, before gonopod base, the epandrium has furcate axons, among which styliform processes (Fig. 1b) are fixed. Seen from above the processes slats with an uneven line: their width is onethird of their length; they are irregularly rounded at the apex; in the apical part each has two setae. Styliform processes are spread upon the inside margin of the base part of gonopods and their apexes are directed towards each other: their length is almost equal to one half of length of the gonopods. Length of gonopods (Fig. 1c) is almost equal to the level of the epandrium ring; their shape is similar to the irregular cuneus S-like curved towards the middle of epandrium; at the base they are wider than the epandrium ring; their inner edge is covered with styliform processes which are narrowed towards the apex and wrapped up on the apex, forming a spoon-like depression. Gonopods in their base part and on the inner side of the margin are provided with quite long, black setae;

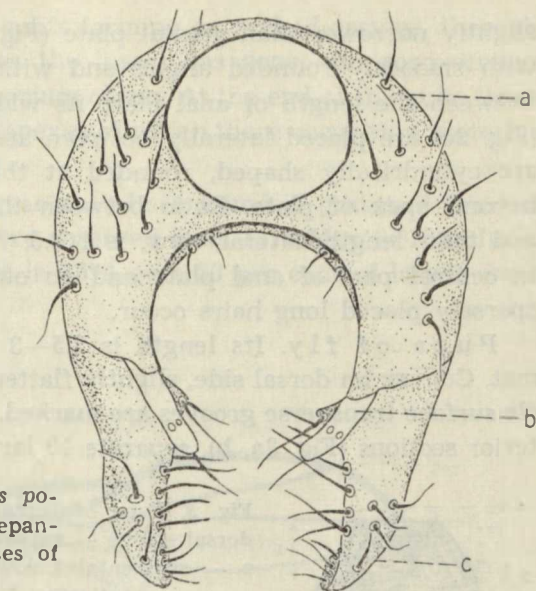


Fig. 1. The epandrium of *Dicraeus polonicus* sp. n. seen from above. a — epandrium ring, b — styliform processes of epandrium, c — gonopods

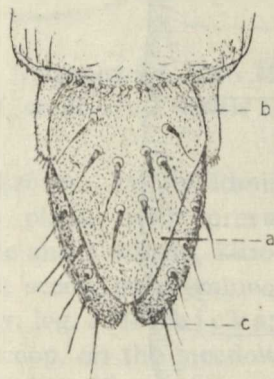


Fig. 2. *Dicraeus polonicus* sp. n. The ovipositor seen from above; a — annal plate, b — genital plate, c — styliform processes of ovipositor

slightly shorter setae arise in the recess of the apex and on the outside of the apical part.

Female. Length of body: 2—2.4 mm. It has more yellow colouring than the male. The width of its head is equal to the width of thorax. Third antennal segment — black-brown. Height of genae equal to width of third antennal segment. The section of vein *c* between orifices r_1 and r_{2+3} is two times and a half that of the length of vein *c*, section between orifices r_{2+3} and r_{4+5} .

Final section of ovipositor — small and much narrower than the segment it borders upon. Annal plate (Fig. 2a) is twice as long as and

slightly narrower than genital plate (Fig. 2b); it is triangle-like shaped, with smoothly rounded angles and with small lateral subsiding. Ratio between the length of anal plate its width is 1.5:1. Styliform processes (Fig. 2c) are placed laterally between anal plate and genital plate; they are cylindrically shaped, rounded at the ends; they protrude slightly beyond apex of plate. Ratio between the width of styliform processes and their length, lateral view, is 1:3.5. Apart from short, delicate hairs in central part of anal plate and on outer part of styliform processes sparsely placed long hairs occur.

Pupa of fly. Its length is 2.5—3 mm. Its colouring gold-yellow, mat. Convex on dorsal side, slightly flattened on ventral side. On the cuticle surface transverse grooves are marked, which besides anterior and posterior sections (Fig. 3a, b), separate 10 larval segments. On dorsal surface

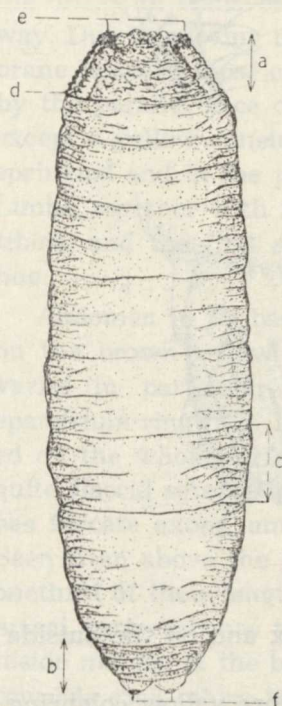


Fig. 3. Pupa of *Dicraeus polonicus* sp. n. seen from dorsal side; a — anterior section, b — posterior section, c — segmental grooves, d — suture, e — anterior stigmatae, f — posterior stigmatae

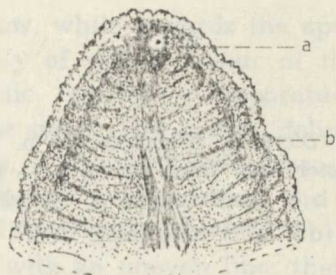


Fig. 4. Anterior section of the ventral side of *Dicraeus polonicus* sp. n. pupa, seen from inside; a — sclerotized part of the shed larval pharyngeal apparatus in puparium, b — edge of suture

between segmental grooves (Fig. 3c), irregular lateral grooves show up on the sides. Anterior segment of pupa the dorsal side has two stigmatae (Fig. 3e) with two marginal lobes protruding outside. Inside, on ventral side of this segment (Fig. 4a), in the mouth orifice, the mouth hooks of the pharyngeal apparatus are fixed and embedded in a sclerotized substance. The sides of anterior section of pupa are flattened and grooved, and they have a suture with a serrate margin (Fig. 3e, 4b). As adult form

emerges from pupa, the suture splits forming an arched crevice, through which the insect emerges. When the insect has gone, the open section decreases its crevice and the puparium closes. At the end of the pupa there are two small elevations, on the apexes of which there occur tiny posterior stigmatae placed flatwise (Fig. 3f).

Dicraeus polonicus sp. n., larvae have been found in grains of *Bromus mollis* L. In 1974 adult forms were observed from 11th May to 15th June. Laboratory cultures showed that in 1974 over 50 per cent of larvae were parasitized by *Hymenoptera*.

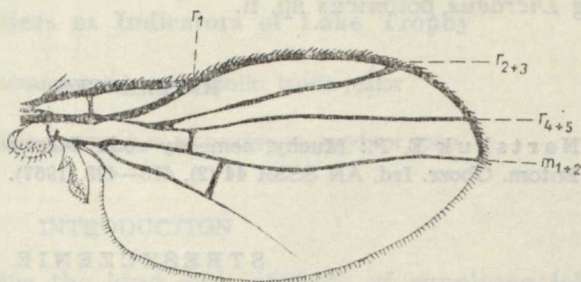


Fig. 5. Wings of *Dicraeus polonicus* sp. n.

Material: Holotype male, Poznań — Naramowice, 13th May, 1974, scoop, on the meadow at an old river-bed of, on *Bromus mollis* L., leg. W. Wałkowski.

Paratypes: 1 male and 6 females, Elizówka, Lublin administrative district, 6th June, 1971, on gramineous plants with prevalence of *Bromus mollis* L., leg. J. H u b i c k a; 1 male and 1 female, Elizówka, Lublin administrative district, 29th May, 1972, scoop, on gramineous plants with *Bromus mollis* L. occurring numerously, leg. J. H u b i c k a; 2 females, Owiska near Poznań, 2nd June, 1974, scoop, on the meadow, leg. W. Wałkowski; 8 males and 3 females, Poznań — Naramowice, 23rd May, 1974, scoop, on the meadow at an old river-bed of Varta, leg. W. Wałkowski; 3 males and 4 females, Poznań — Naramowice, from the laboratory culture of the material gathered on 2nd June, 1974.

The holotype and 19 paratypes have been deposited in the Institute of Biology at the UMCS in Lublin and 10 paratypes in the Institute of Plant Preservation in Poznań.

When comparing the structure of *Dicraeus polonicus* sp. n. with the structure of other species of the genus *Dicraeus* Lw, it should be said that because of the structure of styliform processes and gonopods the described species ought to be numbered among the subgenus *Dicraeus* s. str. (1). Whereas the comparison between *D. polonicus* sp. n. and the

species of this subgenus shows that the gonopods of *D. polonicus* sp. n. most resemble those of *D. ingratus* L w, they differ from each other in the veins of wings, colour, and proportions of particular parts of the body.

Total colouring of the body, downy pleures, and number of notopleural setae are the same in *Dicraeus polonicus* sp. n. and *Dicraeus tibialis* M g., but these insects distinctly differ from each other in the veins of wings. The system of radial veins of *Dicraeus polonicus* sp. is similar to that of *Dicraeus miscanthi* N a r t s h u k (1) — Fig. 5, however, it is easy to distinguish them from each other because the length of the body of *Dicraeus miscanthi* N a r t s h u k is only 1.5 mm. Its colouring is different from all the known palaeartic species of the genus *Dicraeus* L w, including *Dicraeus polonicus* sp. n.

REFERENCES

1. Nartshuk E. P.: Muchy, semeedy roda *Dicraeus* L w. (*Diptera*, *Chloropidae*). Entom. Obozr. Izd. AN SSSR 44 (2), 415—438 (1967).

STRESZCZENIE

Podano opis nowego gatunku muchówki z rodzaju *Dicraeus* L w. (*Diptera*, *Chloropidae*) stwierdzonego na *Bromus mollis* L. Gatunek ten nazwano *Dicraeus polonicus*. Przedstawiono opis dorosłego owada, opis bobówki i wstępne spostrzeżenia o jego biologii. Opisaną muchówkę zakwalifikowano do podrodzaju *Dicraeus* s. str. Ponadto zwrócono uwagę na podobieństwa i różnice morfologiczne *Dicraeus polonicus* sp. n. z gatunkami *D. tibialis* M g., *D. ingratus* L w. i *D. miscanthi* N a r t s h u k.

РЕЗЮМЕ

Дается описание нового вида двукрылых из рода *Dicraeus* L w. (*Diptera*, *Chloropidae*), обнаруженного на *Bromus mollis* L. Этот вид получил название *Dicraeus polonicus*. Кроме описания взрослого насекомого дается описание ложного кокона и предварительные данные о его биологии. Описанный вид авторы отнесли к подроду *Dicraeus* s. str. Кроме того, обращается внимание на сходство и морфологические различия *Dicraeus polonicus* sp. n. с видом *D. tibialis* M g., *D. ingratus* L w. и *D. miscanthi* N a r t s h u k.