

СЕКЦІЯ 5

ЕВОЛЮЦІЙНА МОРФОФІЗІОЛОГІЯ ЛЮДИНИ І ТВАРИН

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NEW FINDING OF *CORYNOPTERA TETRACHAETA*
TUOMIKOSKI, 1960 (DIPTERA, SCIARIDAE)
FROM TERNOPIL REGION

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Corynoptera tetrachaeta Tuomikoski, 1960 – is a small (app. 1.8 mm in length) black fungus gnat from Sciaridae Billberg, 1820 family (Diptera). Among the Diptera, Sciaridae is considered to be the least studied group [3]. The world fauna includes 2207 sciarid species from 81 genera. 31 genera and 654 species were registered in Europe. The last Palearctic sciarid fauna revision was conducted in 1999 by Frank Menzel and Werner Mohrig, the authors indicated 836 sciarid species from 28 genera [3].

According to the literature, current list of sciarid species detected in Ukraine contains 69 species from 18 genera. Nevertheless, the comprehensive faunistic investigation of sciarids was not carried out before. These gnats were studied only in Crimea by V. Bukowski and F. Lengersdorf (1930s) and in Transcarpathia by B. Mamaev (1960s). Only a few sciarid findings are known from other regions of Ukraine.

C. tetrachaeta was described by R. Tuomikoski in 1960 from southern Finland [5]. Male's body coloration is brownish (scutellum and the sides of the notum seem to be slightly lighter). The head is brawn-black. The maxillary palpus is dark, consists of three

palpomeres, the first one has single setae. Compound eyes are united above antennal bases with a characteristic eye bridge. The eye bridge consists of 3 ommatidia (facets) rows. 16-membered antenna are divided into biarticulated “handle” (scapus) consisting of scape and pedicel, and flagellum consisting of 14 flagellomeres. The flagellomere structure of the specimen from Ternopil region does not fully match Tuomikoski’s description. The specimen’s flagellomeres have a short stalk, whereas Tuomikoski reported it to be absent. The length/width ratio of the 4th specimen’s flagellomere is 1.2, whereas in contrast Tuomikoski stated it to be almost 3.0. Such parameters are applicable to the 5th specimen’s flagellomere, but not to the 4th one.

Legs are slender, with uniformly setosed vestiture. Tibia is lighter than thorax, dirty grey. Front tibial (t_1) organ is bordered with 8 – 10 setae arranged in transversal row and has a single spur. t_2 and t_3 both have 2 more or less equal spurs.

Wings are pale brown, 1.6 – 1.8 mm in length. Posterior veins and wing membrane have no macrotrichia. The M-fork is clearly visible, with almost parallel M_1 and M_2 ; stM is almost invisible, its length is app. equal to the length of M_1 (stM/ M_1 length = 0.9). r_1 is noticeable and falls into C far to the base of M-fork. stCu/x = 0.68 (Tuomikoski indicated that stCu is very short, almost absent); r_1/r = 0.5 (after Tuomikoski – app. 0.75), c/w = 0.8 (after Tuomikoski – app. 0.6). The halter is dark.

Gonostyllus is budlike, with rather short dark terminal tooth and 4 lighter megasetae located below the apical tooth. Megasetae are longer than the apical tooth.

C. tetrachaeta has a wide Palearctic spreading. It is known from Europe (Austria, Great Britain, Czech Republic, Finland, France, Germany, Italy, Slovakia, Slovenia, Sweden, The Netherlands and Ukraine) and Western Siberia (Northern Altai). There are the Central American records of this species from Costa Rica and Honduras [4], but this information is considered probably incorrect and needs to be verified [2].

Therefore, *C. tetrachaeta* in Ukrainian entomofauna was known only from Transcarpathia region according to B. Mamaev’s collection. Material: № 1585, Transcarpathia, near Rakhiv, sweep-net, 17.07.1963, B. Mamaev (stored in Werner Mohrig’s private

collection, Puddemin) [2]. Unfortunately, the information about biotopic and habitat spreading of this species in mentioned region is absent.

As part of the research of sciarids ecological and chorological peculiarities in Ukraine, we have detected a new *C. tetrachaeta* locality. We collected *C. tetrachaeta* specimens in Ternopil region in 2015 within the biotope of West Podolia broadleaf-oak forest (G 1.212) with overstory up to 20 m and crown density around 0.6 – 1.0. The dominant tree species in this forest is *Quercus robur* L. with significant addition of *Tilia cordata* Mill., *Carpinus betulus* L., *Fraxinus excelsior* L., *Acer pseudoplatanus* L. and *A. platanoides* L. The understory is formed by *Sorbus torminalis* (L.) Crantz, *Euonymus verrucosus* Scop., *Corylus avellana* L. and undergrowth of *C. betulus*. The herb layer density is up to 80%, can be mosaic and consists of *Anemone nemorosa* L., *Carex pilosa* Scop., *C. sylvatica* Huds., *Asarum europaeum* L., *Corydalis cava* (L.) Schweigg. & Körte, *Viola* sp. and other. Material was collected by the method of non-accounted mowing with entomological net (one hundred single sweeps per certain plot) and placed in 5 ml vial with 70% ethanol. Fixed material was dehydrated initially in 96%, than in absolute ethanol and mounted on slides in Euparal [1]. Material: № 104-105, Ukraine, Ternopil reg., Terebovlya dist., outskirts of Volya village, “Za levadoyu” tract [N 49.38771, E 025.62899], altitude 319 m, oak-hornbeam forest, non-accounted mowing above compost heap near the forest road (100 single sweeps per 2.3 m² area), 3 ♂, 4.07.2015 (Babytskiy).

We discovered that the highest density of sciarid population is over the substrate surface where larvae develop. Moreover, the number of males exceeds the one of females (sometimes more than twice). However, in the samples collected nearby the substrate, number of females exceeds substantially the number of males. Such alterations in sexual structure of the population can result from different role of male and female sciarid imago. According to our observations, males, after they have left the pupae, stay on the substrate surface, copulate with females (often before the final integument formation in last ones) and die shortly after. Fertilized females fly away and oviposit on the uninhabited part of the substrate. If larvae density in available substrate is high, females fly far away

searching for suitable substrate for larvae development.

Thus, there are two localities of *C. tetrachaeta* in Ukraine: Transcarpathia region known from literature and a new one from Ternopil region. The new finding provides information about biotopic and habitat spreading of *C. tetrachaeta* in West Podolia broadleaf-oak forest (G 1.212).

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