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STREPSIPTERA SBÍREK ENTOMOLOGICKÉHO ODDĚLENÍ
NÁRODNÍHO MUSEA V PRAZE.
THE STREPSIPTERA OF THE COLLECTIONS OF THE ENTOMO-
LOGICAL DEPARTMENT OF THE NATIONAL MUSEUM IN PRAGUE
(II. pt.).

(With plate 2, No. 1—5.)

V této práci podávám další příspěvek o vzácné skupině Strepsipter. Prvý, zde popisovaný druh je již dobře znám, ale dosud nebyl v Československu nalezen. Druhý druh byl dosud znám pouze v jediném pohlaví (♂) a to z jihozápadního Ruska. Byl popsán dosti nedokonale *Piercem* dle mého materiálu a proto jest zde podáván popis samice tohoto druhu, dosud neznámé. Druh *Eupatocera sphecidarum* Dufour jest novým pro Čechy. Třetí zde uváděná forma, tvořící n. gen. a n. sp., *Pseudelenchus carpathicus* n. g. n. sp. byla mnou nalezena za šťastných okolností blíže vrcholu Hoverly v Podkarpatské Rusi, ve výši 1600 m. Typy všech těchto forem jsou uloženy v našem oddělení Národního Musea.

The following short contribution contains data and descriptions of three species of Strepsipterous insects newly arranged in the collections of the Entomological Department. The first of them is a well known species, but was not mentioned as yet for the fauna of Czechoslovakia. Only male sex was described until now for the second species and it was known only from S.W. Russia. As for the third it forms a new genus and species and very probably is an endemic Carpathian insect.

The family **XENIDAE** *Semenov-Tjan-Sanskij*.

1. *Eupatocera sphecidarum* *Dufour*.

Xenos sphecidarum *Dufour* 1837. — *Siebold* 1839 (part.).

Paraxenos sieboldi *Saunders* 1872 (part.).

Eupathocera sphecidarum *Pierce* 1908, 1909, 1911, 1918.

One infected female of *Ammophila sabulosa* Linn. bearing one female specimen of *Eupathocera sphecidarum* *Dufour* with the full developed triungulinid larvae collected by the author at Sláň. August 5th 1923.

The family **HALICTOPHAGIDAE** *Pierce* 1908.

In the summer 1914 the author bred this insect for the first time at *Poltava* (S.W. Russia) as a parasite of *Delphax striatella* L. Males and females were sent in two different lots to Mr. W. D. Pierce in Washington for determination. The beginning of the great war made our communication with America very difficult and males only reached Mr. W. D. Pierce. He described only males (1918) stating a new genus for them. The females remained undescribed, because all of the great material collected by the author in 1914

and 1918 had to be left in Russia. On May 17 and 20 1925 at *Bilky* (*Podkarpáthian Russia*) the author took a leaf hopper with the male puparium and another one with the female of *Delphacixenos anomalocerus* *Pierce*. The males of the second generation appeared on July 5. Like in Russia *Delphacixenos* has three generations yearly, which is in accordance with the supposition of Mr. W. D. Pierce (1909, p. 44), but hibernates as young larva in the third larval stage of *Delphax striatella* L. *Delphax striatella* hibernates in the uncultivated parts around the fields feeding on ray-grass and other wild *Gramineae*. Adult leaf-hoppers migrate in April to the cultivated fields mainly to the winter wheat in *S. Russia* and to the oat fields at *Bilky*. Only after their migration and the end of a short imaginal diapause females of leaf-hoppers begin to oviposit and at the same time, at first male larvae and then female larvae of *Delphacixenos* protrude their fore ends through the pleurae of abdomen of the host. In the second generation a small number of male parasites push outward their puparia already in the nymphae of the host. But the majority of males and all females protrude the pleurae of adult leaf-hoppers. I failed to find the *Delphacixenos* in *Russia* above the glacial borders in the *Kief* and *Minsk* Provinces and likewise in *Czechia*. It seems possible to me that *Delphacixenos anomalocerus* *Pierce* is a characteristic insect for the pontic region of the Palearctic realm. It is very probable that *Delphacixenos anomalocerus* will be found as a common insect in *Hungary*, as the valley of the river *Boršova*, where the village *Bilky* is situated, is the extreme northern part of the *Hungarian plain*.

However it may be the areal of the distribution of *Delphax striatella* L. is much larger than that of its parasite.

Genus *Delphacixenos* Pierce 1918.

Female: the body of adult female posteriorly thinned in shape of a tail, the end of which reaches the head cavity of the infected leaf-hopper. Two median genital canals. Larval cephalothorax on the ventral surface; thoracic sternites not separated; head large with terminal mandibles. Two spiracles on the dorsal surface of the cephalothorax.

2. *Delphacixenos anomalocerus* Pierce, 1918.

Female: fig. 1st. Larval cephalothorax elongate, maximum length ventrally 380 μ ; dorsally 170 μ , maximum breadth a little before spiracles 204 μ . General colour of light brownish yellow, the mandibles dark brown. Head dorsally with an apical, longitudinal keel which reached the middle of the disk. Ventrally head produced between the mandibles with the lateral sides slightly and evenly rounded; its posterior margin broadly rounded at the middle and slightly carved on both sides. Length of the head 116 μ .

The orifice of the mouth immediately beyond the mandibles as broad as the space between them, 44 μ , its posterior edge, thickened and slightly elevated.

The mandible (fig. 2nd) transversal, with rounded anterior margin and with two sharp teeth in the inner (oral) corner. The fig. 2nd is made a little from the side in order to show both teeth of the mandible. Through the transparent chitin two muscular tendons are seen articulated with the inner surface of the mandible for the musculus adductor and m. remotor mandibulae respectively. Length of the mandible 24 μ ; the breadth 34 μ . The distance from the margin of the mouth orifice to the apex of the head 37 μ . There are six ventral groups of pori of Nassonovs glands. Two symmetrical, lateral large groups on both sides of the head each consisting of 15—18 small round pori. Thoracic groups distinctly divided on two larger, transversal respectively pro

and mesosternal ones, each of them consisted of about twenty pori, and two small metasternal groups, each consisting of 4—5 pori. Sternal part of thorax completely separated from the pleurodorsal part bearing spiracles. Whole sternal surface is fine, equally reticulate a little darker coloured than the remaining parts of cephalothorax. The anterior margin of sternal thoracic part is stright. The spiracles round, dorsal, nearly 14 μ in diameter, the distance between them 153 μ , the distance from the anterior end of cephalothorax to the spiracles 170 μ . The spiracles are situated a little before the mesosternal group of pori of Nasonov's glands.

Dorsally cephalothorax broadly carved behind, at the middle a little longer than the head ventrally, the posterior border is strongly chitinized, black thickened with short radial keels running from it on the dorsal surface of cephalothorax.

Cephalothorax ventrally constricted immediately beyond the lateral metathoracic groups of the pori of Nasonov's glands. After this constriction is the region in which eggs are found. Each egg is slightly elongate, maximum diameter 68 μ ; short diameter 37 μ . I copy my fig. 3rd from W. D. Pierce 1918, pl. 75, fig. 1, with some changes, from which the most important, as seems to me, is the showing the position of the olfactive groove at the base of the fourth antennal joint. This olfactive groove is a new sensitive organ firstly found by author for the family Elenchidae, but very probably characteristic also for the whole family Halictophagidae and possibly to other families of Strepsiptera.

The family **ELENCHIDAE**, *Pierce*.

On August 2nd on *Mount Hoverla* (*Podkarpathian Russia*) about 1600 m above the sea level while sweeping a mountain meadow, I found ♂♂ and ♀♀ of Strepsiptera belonging to a new genus and species of the family Elenchidae *Pierce*. As the host of this new species is an endemic leaf-hopper *Dicranotropis carpathica* *Horv.*, it is very probable that the geographical distribution of this new Elenchid, which I name *Pseudelenchus carpathicus*, is confined only to the meadows of the Carpathian mountains. A more detailed description will be given in another place and here follows only a short diagnosis.

Genus **Pseudelenchus** n. gen.

Male. Antennae four-jointed, third joint bifurcate with an olfactive groove in the swollen basal part. Metascutum not divided behind by praescutum. Elytrae long with the anal lobe. Four diskal veins on the hind wing: Sb, R, M, and A. Between M and R is a short vein probably M' not reaching the main vein. Abdomen constricted at the basal third, the eighth segment ventrally with a short apically rounded appendage. Tenth segment apically not reaches the end of oedeagus.

Female. Larval cephalothorax is not formed like in other families of Strepsiptera. The head placed on the ventral surface of the body and formed a kind of transverse chitinized cap on which the traces of antennae, two close groups of the pori of Nasonov's glands, mandibles and mouth orifice are situated. The central nervous system, bodies of large cells of the Nasonov's glands and a great part of the oesophagus are placed out of this cap.

Pro and mesosternum not separated and formed an erected semilunar plate surrounding large orifice of the broode chamber. Metasternum on both sides produced in front and completely separates the pro- and mesosternum from

their pleural and tergal parts. The spirales immediately beyond the posterior margin of the cephalic cap, free. Three medial genital canals with the slit-like orifices on the abdominal segments first, second and third. The last abdominal segments thinned in the form of a tail reaching the head cavity of the host.

3. *Pseudelenchus carpathicus* n. sp.

Male. General color grayish brown. Length of body 1.5 mm.

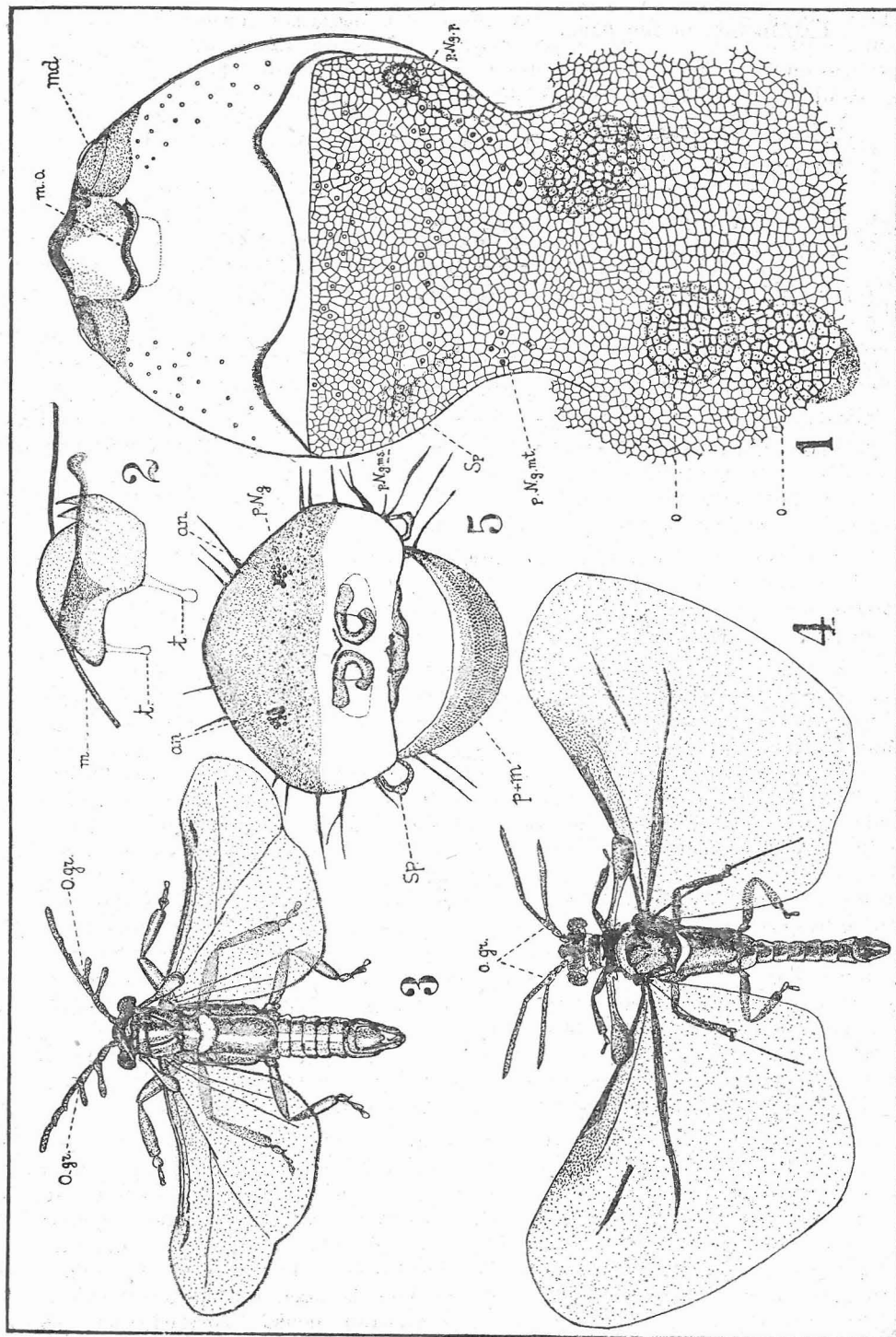
Head transverse nearly two times as broad as long to see from above. Eyes large with 21 large round ommatidia. Antennae nearly reached the middle of metapostscutellum, first joint articulated with the second and with the head by four condyli. Second joint articulated with third by round articulation. The third joint basally swollen with the olfactive groove, apically bifurcate. Morphologically the third joint is equal to the third + fourth joints of other *Elenchidae*. Lateral appendage nearly as long or sometimes a little longer than the fourth antennal joint. Third and fourth joints densely covered with hemispherical transparent sensoria protected by numerous scales each of them ended with two or three stout bristles.

Mandibles short, stout, externally convexe, without the furrow on the inner side. Maxillae two jointed the second joint longer than the mandible, more than three times as long as the first maxillar joint.

Pronotum transverse with membraneous swollen anterior half and brown chitinous posterior half. Mesonotum is divided on three transversal parts. Elytra nearly as long as the fourth antennal joint. Metathorax a little shorter than the abdomen.

Metapraescutum a nearly equilateral triangle with its caudal apex ending far from the scutellum. Scutellum transverse, swollen at the middle, strongly chitinized. Postlumbium broadly carved in front, rounded behind. Postscutellum shorter than the remainder parts of metanotum combined, slightly and evenly narrowed to the rounded apex. Abdomen constricted at the basal third. Each abdominal segment densely covered with small round tubercles which ended with 1—5 bristles. The middle of each segment dorsally and ventrally with brown dark semicircular spot formed by strongly chitinized tubercles. The pleural parts of the abdomen shriveled with numerous wrinkles thanks to the longitudinal and transversal muscled placed immediately under the thin soft hypoderme. Eighth segment ventrally with rounded, black, short appendage, covered like whole ninth segment with scalelike stout hairs collected in groups. The tenth segment short transverse, its apex far not reaches the apex of oedeagus. Oedeagus basally thick, flattened in the apical third, with sharp, slightly reflexed end. Basal two third of oedeagus covered with bent hairs directed to the base of oedeagus. Hind wing is slightly infuscate, with a clouded spot between the end of subcosta and radius. Subcosta nearly as long as the half of the anterior margin of the wing and is equal to radius.

Female: The fore half of the cephalic cap, mandibles, spiracles and mesosternal plate brownish. The posterior half of the cephalic cap yellow. Length of the cap $153\ \mu$ Br. $265\ \mu$. The antenna consists only of one dark brown spot. Close to the antennae two round groups of pori of the Nasonov's glands are found each consisting from nearly ten pori. Mandibles transverse, horse-shoe shaped, close one to another, length $27\ \mu$, breadth $40\ \mu$. The spiracle ring-shaped expanded at the external margin. The distance between the spiracles $146\ \mu$. Prosternum narrow, evenly coloured, mesosternum densely covered with the round, brownish dots.



Explanation of the plate.

Fig. 1. The larval cephalothorax of the female *Delphacixenos anomalocerus* *Pierce*. Ventral view. *m. o.* the orifice of the mouth. *md.* the mandible. *p. N. g. p.; p. N. g. ms.; p. N. g. mt.* groups of pori of the Nasonov's glands of pro-meso and metasternum respectively. *Sp.* The spiracle. *O.* the egg.

Fig. 2. The right mandible of female of *Delphacixenos anomalocerus* *Pierce*, drawn a little from the side in order to show the teeth. *m.* The border of cephalothorax. *t.* the tendons for muscles.

Fig. 3. The male of *Delphacixenos anomalocerus* *Pierce*. (after W. D. Pierce. 1918. pl. 75. fig. 1. slightly changed). *o. gi.* The olfactory groove.

Fig. 4. The male of *Pseudelenchus carpathicus* n. sp. *o. gr.* The olfactory groove.

Fig. 5. The cephalic cap and the anterior part of sternum of the adult female larva of *Pseudelenchus carpathicus* n. sp. *an. antenna.* *p. N. g.* The pori of Nasonov's glands. *Sp.* spiracle. *pm.* Pro mesosternum.

