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**Mites of the genus *Holoparasitus* OUDEMANS, 1936 (*Acarina*, *Parasitidae*)**

[Pp. 217—238, 18 text-figs.]

**Roztocze rodzaju *Holoparasitus* OUDEMANS, 1936 (*Acarina*, *Parasitidae*)**

**Клещи из рода *Holoparasitus* OUDEMANS, 1936 (*Acarina*, *Parasitidae*)**

Abstract. Description of two new species of the genus *Holoparasitus* OUDEMANS 1936, i. e. *H. quadratus* and *H. bilaminatus*, and complementary descriptions of the species *H. pseudoperforatus* and *H. excisus* are presented. In this last case a description of the female and deutonymph is given for the species *H. pseudoperforatus*, erected exclusively on the basis of the description of the male, and that of the male for the species *H. excisus*, known from the description of the female.

The description are based on holotypes and each case of variation found in some characters within the series examined is mentioned in the text.

The types are in the possession of the author.

***Holoparasitus pseudoperforatus* (BERLESE, 1905)**

Female from the Kampinos National Park (Parasit. No. 400 A). Diagnosis. The endogynium (Fig. 2 a, b) has the shape of a round cup, the upper edge of which passes into three teeth directed to the interior of the endogynium. Seta  $v_1$  on trochanter palpi digitate at end (Fig. 3 a).

Description: Idiosoma measurements —  $715-745 \times 500-502 \mu$ , the measurements most commonly observed being  $730 \times 500 \mu$ .

The dorsal side of the idiosoma does not as a rule differ from its typical appearance in the genus *Holoparasitus*. The ventral shield is not thoroughly

separated from the dorsal one (Fig. 1) and the prae-endopodal plates are fused into one tapelike plate. Paragynia (Fig. 2 d) with evidently sclerotized inner margin and a tubercle opposite coxa III. Epigynium (Fig. 2 a) with heavily sclerotized sides and a distinct thickening below middle tooth. Endogynium

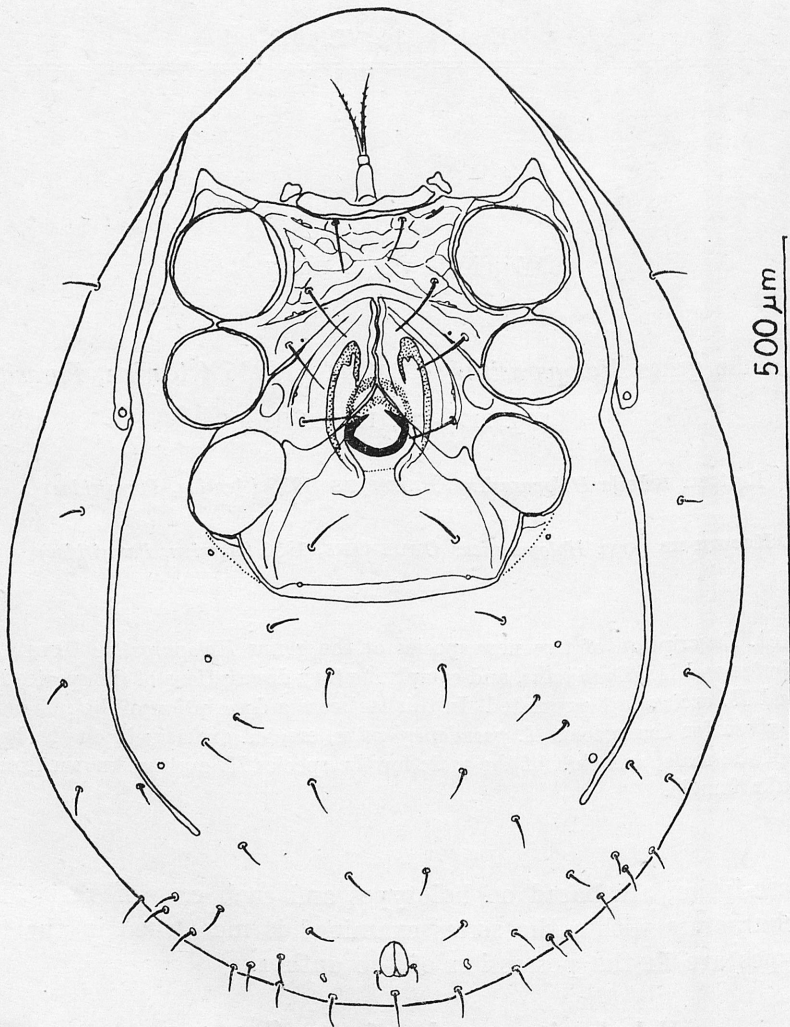


Fig. 1. *Holoparasitus pseudoperforatus* (BERL.), Female. Ventral side of idiosoma

(Fig. 2 b) round, with three teeth turned inwards. The side teeth are larger and better seen than the middle (upper) one. In some specimens there occur additional between the side teeth and the middle one (Fig. 2 c). Gnathosoma (Fig. 3 a): Tectum three-toothed (Fig. 3 b). Laminae on laciniae broad, ending in several teeth. Hypostome with Q-10. Setae  $G_{1,2,3,4}$  slightly dentate. Seta  $v_1$  of trochanter palpi digitate at end, seta  $v_2$  delicately dentate in its terminal portion. Digitus mobilis of chelicera (Fig. 3 c) with three big teeth. There are

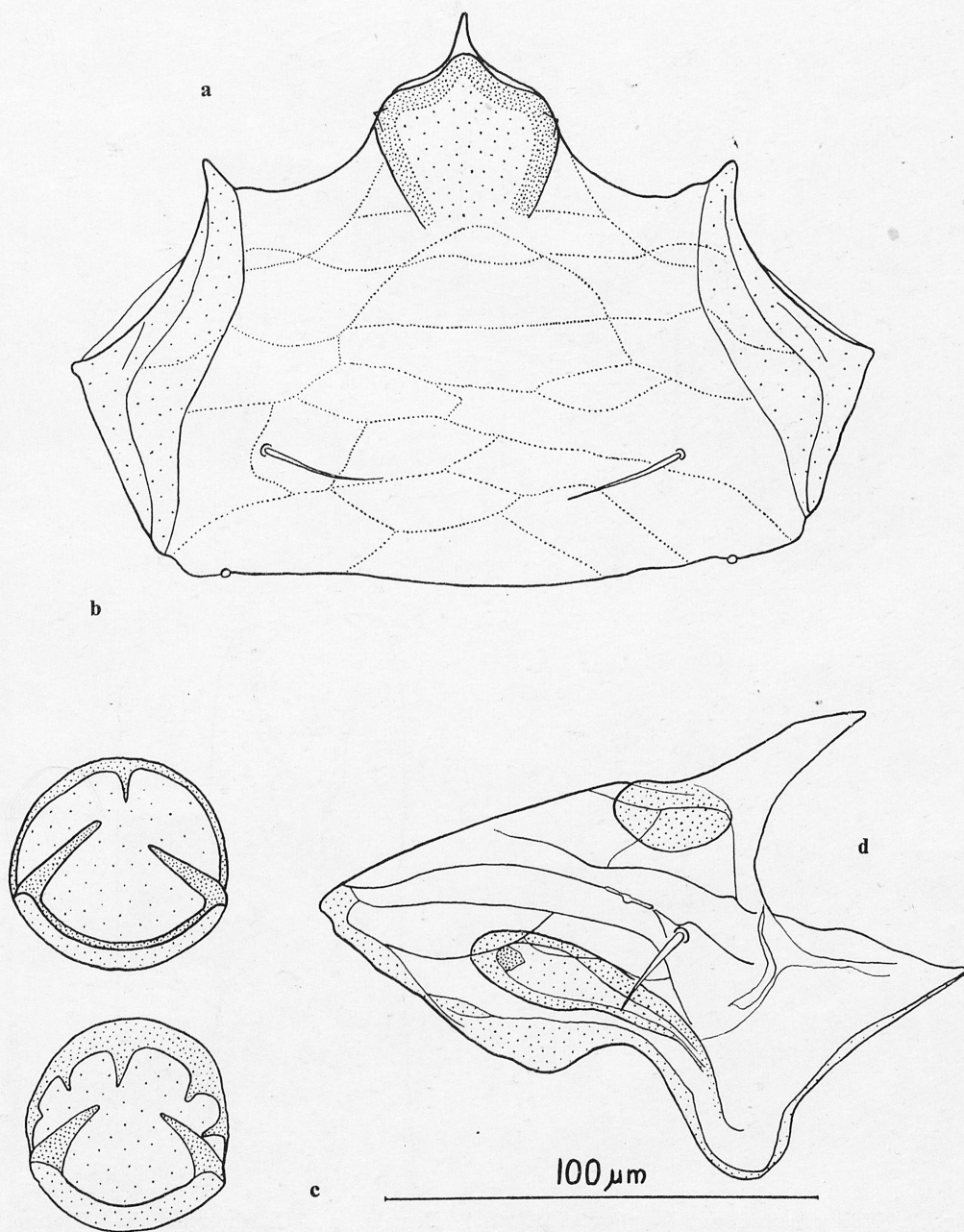


Fig. 2. *Holoparasitus pseudoperforatus* (BERL.), Female. a — Epigynum, b, c — Endogynium, d — Paragynium

three teeth between the apex and pilus dentilis on the digitus fixus, and further only one tooth and two thin laminae. The synarthroidal membrane is rounded at the end has a small notch from the side of the digitus fixus. Flagellum small.



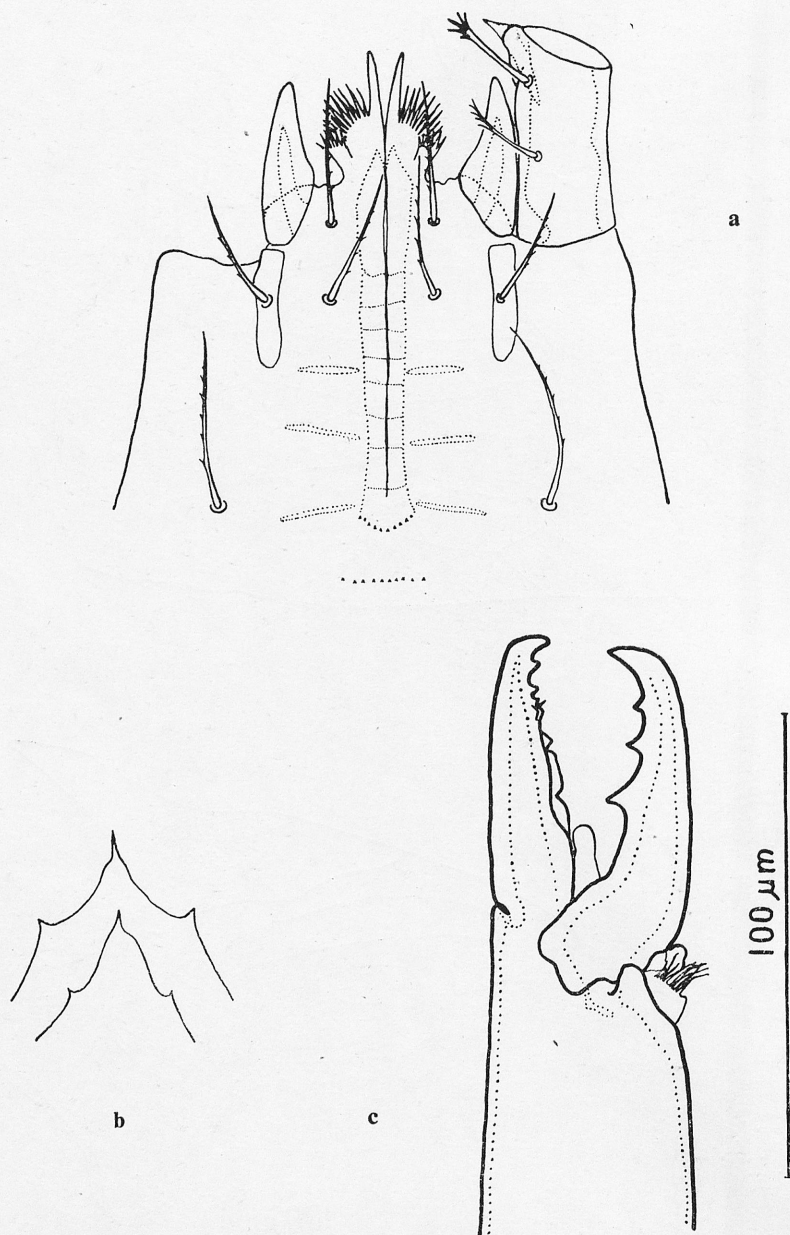


Fig. 3. *Holoparasitus pseudoperforatus* (BERL.), Female. a — Gnathosoma, b — Tectum, c — Chelicera

Male — as described by MICHERDZIŃSKI (1969).

Deutonymph from the Kampinos National Park (Parasit, No. 492).

Description: Idiosoma measurements:  $595-630 \times 895-440 \mu$ . The globular shape of this juvenile stage is already similar to that of adult specimens of the



genus *Holoparasitus*. The dorsal side is already distinctly arched at this stage. Dorsal side (Fig. 4): Notocephalon, with 17 pairs of setae, visibly broader than notogaster. Posterior margin of notocephalon with well-seen notches at sides. Notogaster with 13 pairs of setae. Its anterior margin is cut off even, whereas the posterior one is rounded. Ventral side (Fig. 5): Setae distributed as in female sternum with posterior edge elongated. Anal shield circular. Gnathosoma: Tectum pointed, five-toothed (Fig. 6 b), laminae on laciniae as in female.

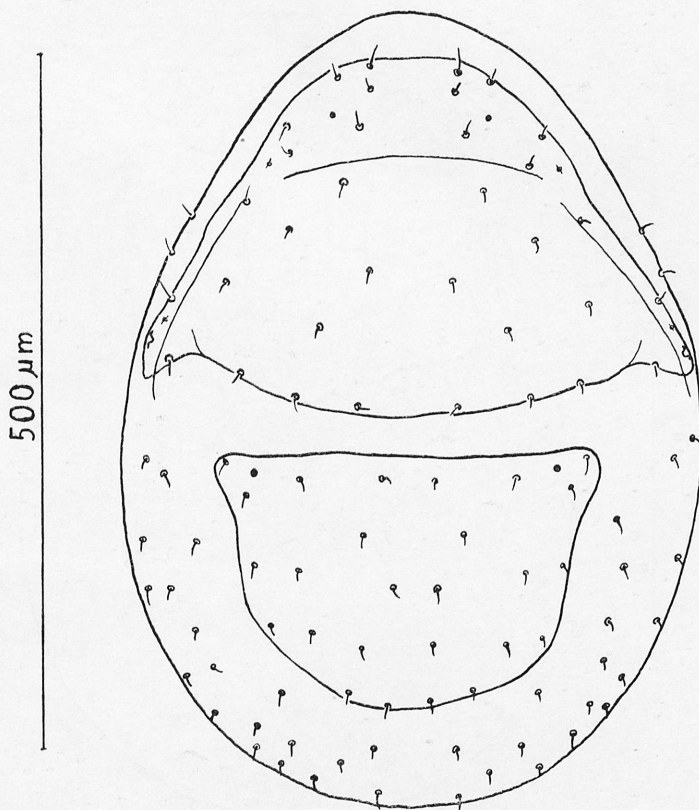


Fig. 4. *Holoparasitus pseudoperforatus* (BERL.), Deutonymph. Dorsal side of idiosoma

Hypostome (Fig. 6 a) without distinct grooves. Setae  $G_{1,2,3,4}$  smooth. Seta  $v_1$  on trochanter palpi plumose at end, which character is less distinctive than it is in the female. The cheliceras (Fig. 6 c) differ slightly from those of the female only in the region of the pilus dentilis.

This species was found to occur in the litter of a damp mixed forest (Kampinos N. P., Central Poland; 19 July), a deciduous forest (hornbeam, hazel; Grabowiec near Busko; 5 June) and a mixed forest (Myślenice near Kraków, Southern Poland, 10 November). A total of 21 females, 5 males and 4 deutonymphs were collected in these localities.

It is possible that the species *H. pseudoperforatus* is identical with the species described by BERLESE (1905) as *H. excipuliger*. The fairly characteristic bend in the thickening under the middle tooth of the epigynum of female *H. pseudoperforatus* resembles the analogically situated part of the „endogynium“ of *H. excipuliger* in BERLESE'S drawing. The foregoing hypothesis is also supported

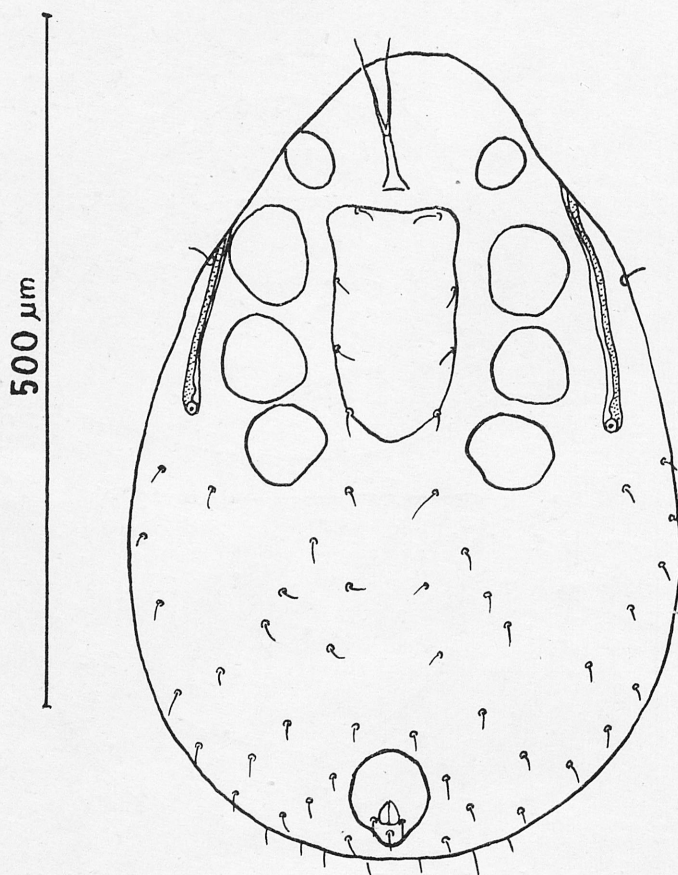


Fig. 5. *Holoparasitus pseudoperforatus* (BERL.), Deutonymph. Ventral side of idiosoma

by the fact that out of the three teeth of the endogynium in female *H. pseudoperforatus*, often only the side teeth are distinct, whereas the middle one is smaller, turned upwards, and may escape notice. As regards male *H. pseudoperforatus*, its leg II does not differ clearly from the drawings of leg II of *H. excipuliger* BERL. and, in addition, there occurs a characteristic pattern on the sternum in both these species (BERLESE, 1905). The foregoing suggests that *H. excipuliger* BERL. 1905 is synonymous with *H. pseudoperforatus*. The definitive establishing of this synonymy demands an examination of the types.

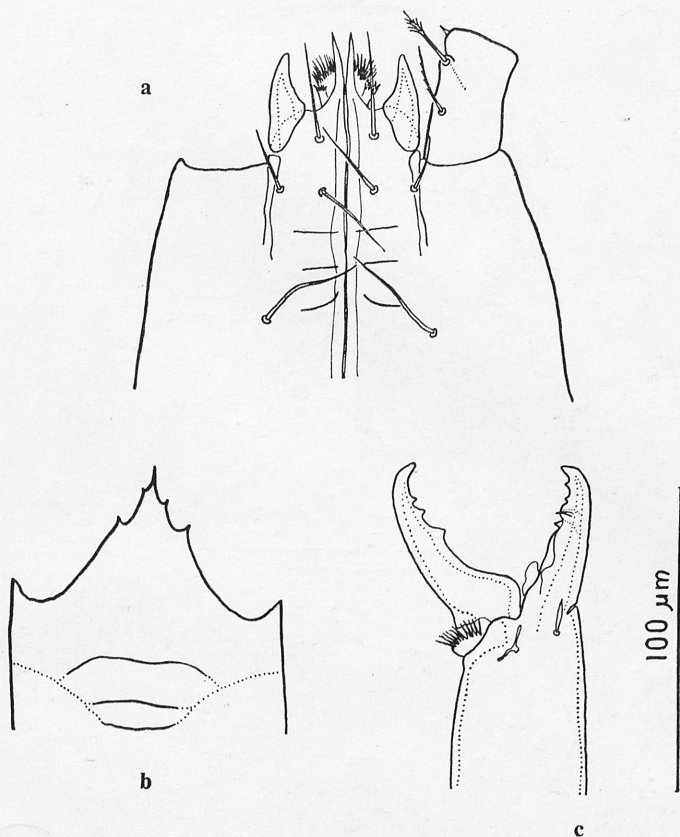


Fig. 6. *Holoparasitus pseudoperforatus* (BERL.), Deutonymph. a — Gnathosoma, b — Tectum, c — Chelicera

***Holoparasitus excisus* (BERLESE 1905)**

Female: as described by MICHARDZIŃSKI (1969). Drawings of the ventral side (Fig. 7), gnathosoma (Fig. 8 c) and paragynium (Fig. 8 a) are given as complements. In the present specimens the tectum (Fig. 8 d) has larger side teeth.

Male from Myślenice, Southern Poland (Parasit. No. 554 B). Diagnosis. Corniculi with tooth on inner side. Apophyses on femur II as shown in Fig. 10 a. Description: Idiosoma measurements —  $563 \times 403 \mu$ . The dorsal shield is incompletely separated from the ventral one by a very narrow furrow (Fig. 9). The margin of the ventral shield is indented in the middle portion of the tritosternum and thickened at the sides, above the openings for coxae II. Gnathosoma: Tectum (Fig. 10 d) with only one apical tooth. Corniculi with small tooth on inner side (Fig. 10 b). Hypostome with  $Q = 11$ . Setae  $G_{1,2,3}$  smooth but  $G_4$  dentate. Trochanter palpi: Seta  $v_1$  bilaterally dentate at end,  $v_2$  smooth. Chelicera (Fig. 10 c): The digitus mobilis has one tooth with a broad base. There is only one tooth on the inner margin of the digitus fixus, just behind



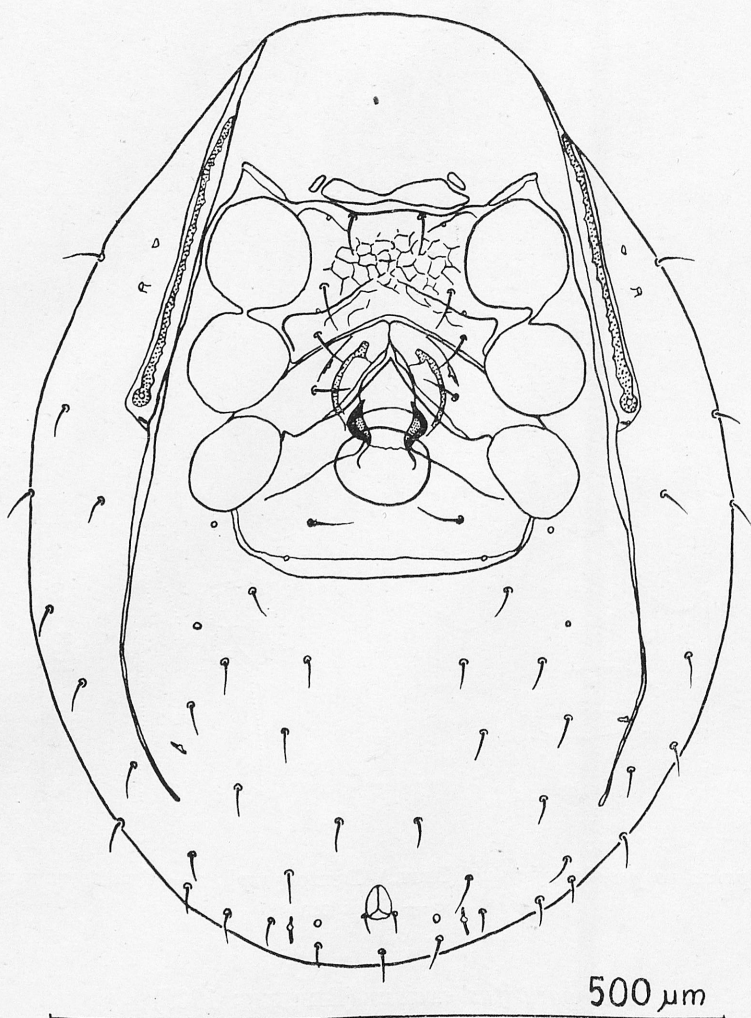


Fig. 7. *Holoparasitus excisus* BERL., Female. Ventral side of idiosoma

the pilus dentilis in the direction of the base. Several, rather indistinct, denticles occur below the inner margin. The flagellum is brushlike. Leg II (Fig. 10 a): The femur has two apophyses rounded at the end. The genu is furnished with one low and elongated apophysis, which begins at the height of seta  $pv_1$ . On the tibia there is also one apophysis, which is very elongate, begins below seta  $pv_1$  and rounds up to the end of the tibia. Setae  $al_1$  on the trochanter and  $pv_1$  on the genu have one denticle each.

Both the females and the male (4 ♀♀ and 1 ♂) were found in the samples taken from the litter of a young coniferous (spruce) forest at Myślenice (Kraków region, Southern Poland; 10 and 15 November). The description of the male, unknown hitherto, also confirms the membership of this species in the group *Pollicipatus* sensu MICHERDZIŃSKI 1969.

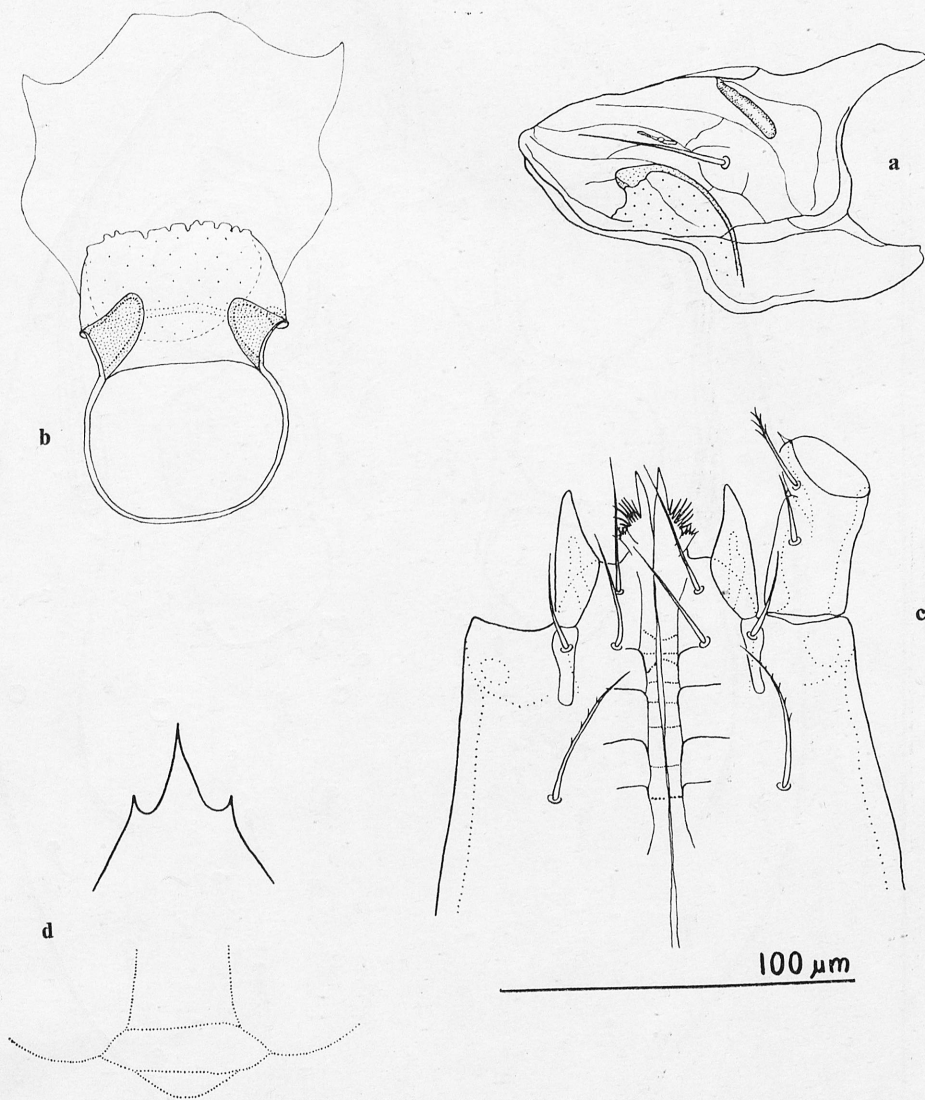


Fig. 8. *Holoparasitus excisus* BERL., Female. a — Paragnathium, b — Endognathium, c — Gnathosom, d — Tectum

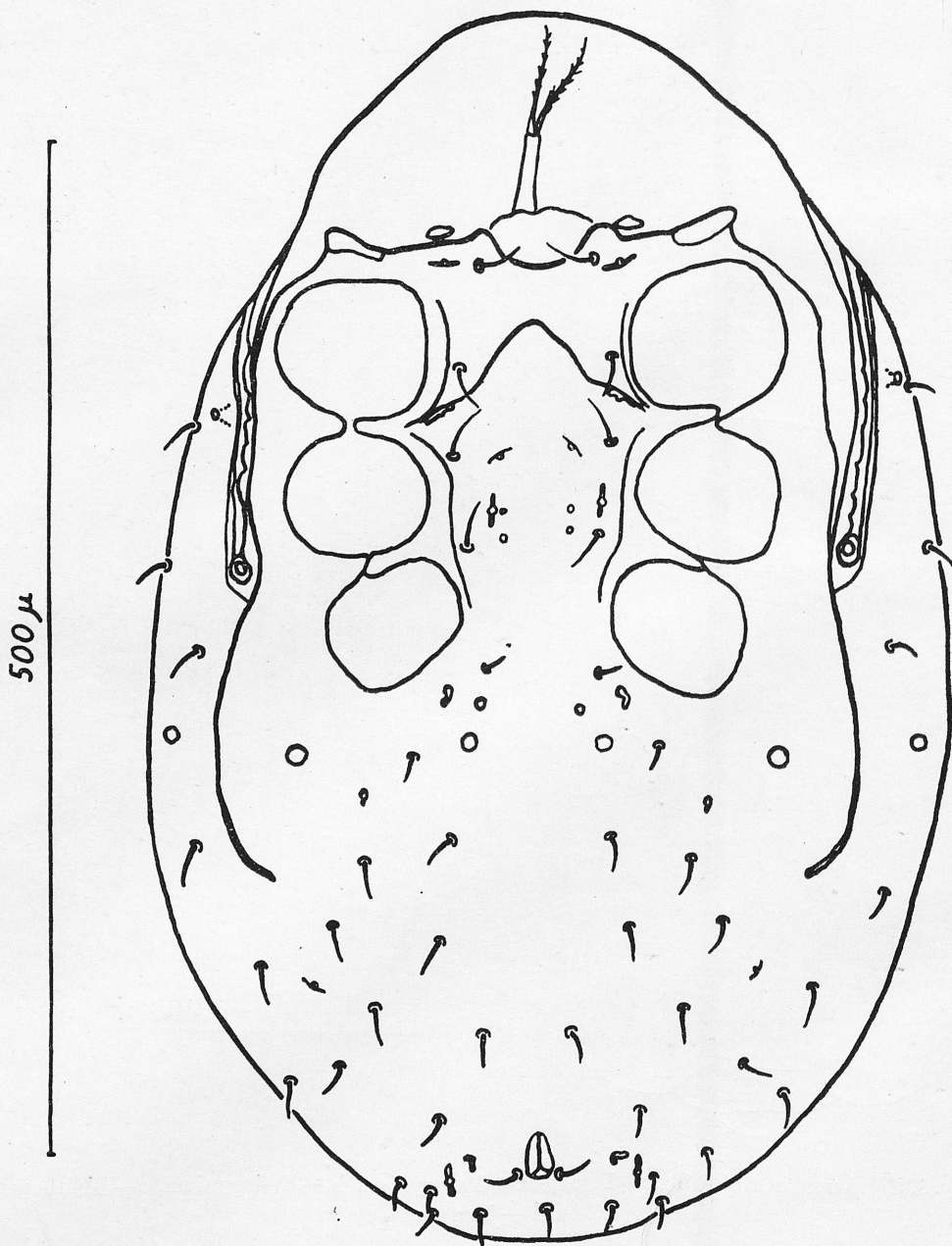


Fig. 9. *Holoparasitus excisus* BERL., Male. Ventral side of idiosoma



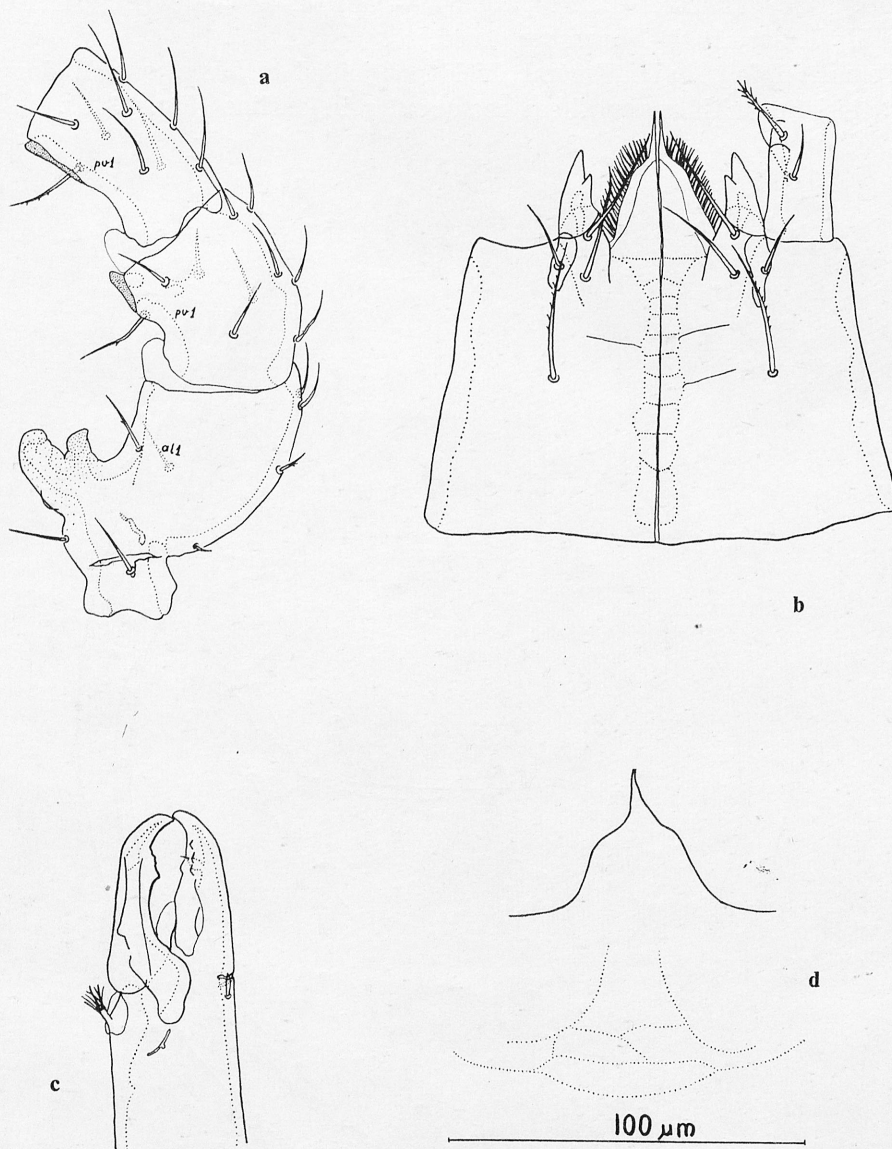


Fig. 10. *Holoparasitus excisus* BERL., Male. a — leg II (Fe, Ge, Ti), b — Gnathosoma, c — Chelicera, d — Tectum

*Holoparasitus quadratus* n. sp.

Holotype: female from Myślenice, Southern Poland (Parasit. No. 541) Paratypes: 2 males (Parasit. No. 373 A) and 1 female (Parasit. No. 373 B) from Myślenice, 4th May, 1969; 10 males (Parasit. No. 546—548) and 2 females (Parasit. No. 563) from Myślenice, 10th November, 1969.

Female: Diagnosis. Ventral shield not joined to dorsal one. Endogynium characteristic, with spermatheca rectangular in outline (Fig. 13 d).

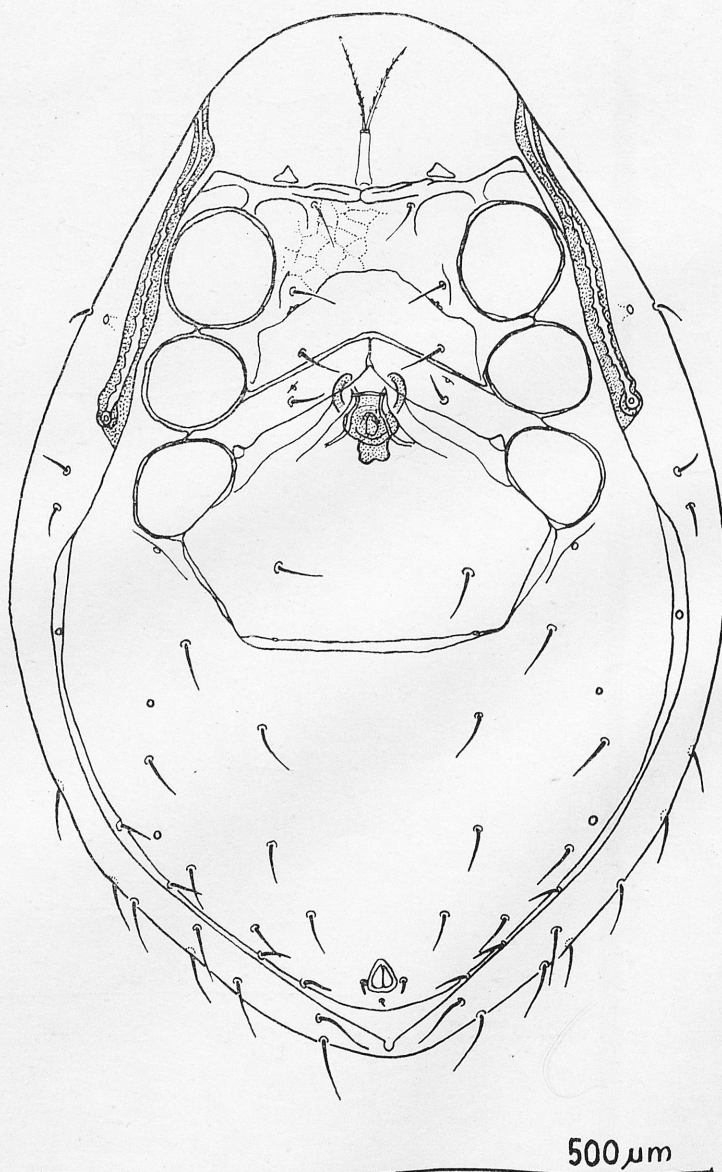


Fig. 11. *Holoparasitus quadratus* n. sp. Female, (Holotype). Ventral side of idiosoma

Description: Measurements —  $745-775 \times 494-512 \mu$ . Dorsal side as in other species of this genus. Ventral side (Fig. 11): Prae-endopodalia poorly differentiated from sternum. Paragynium (Fig. 12 d) with characteristic thicken-

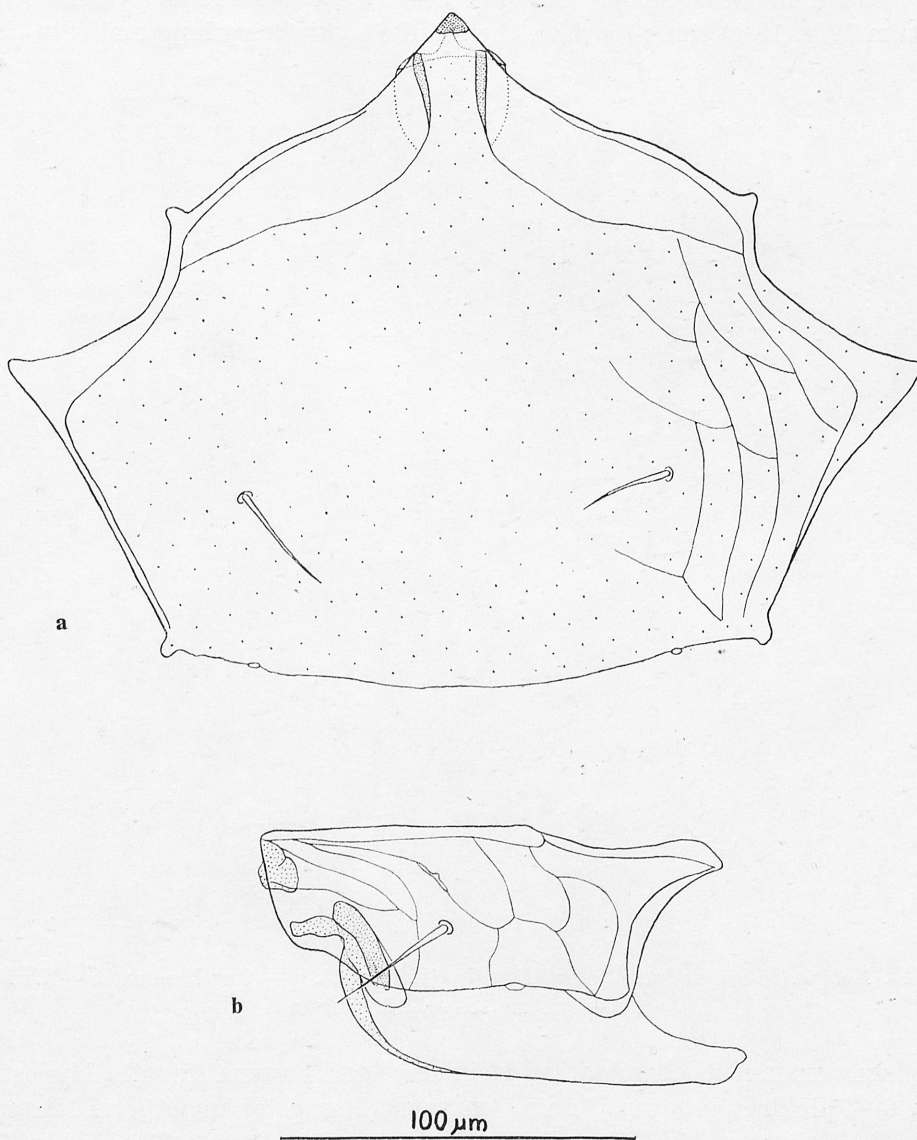


Fig. 12. *Holoparasitus quadratus* n. sp. Female, (Holotype). a — Epigynum, b — Paragynium

ings developed in the place of attachment of the endogynium and on the ventral side of the dorsomedial end. The epigynum has thickenings on the ventral side of the middle tooth (Fig. 12 a). The anterior portion of the endogynium forms an afferent channel with annular dilatations. It ends in a thin-walled but strongly sclerotized chamber, which is rectangular in outline (spermatheca).



Since the endogynium lies slantingly from the ventral side towards the dorsal, the annular dilatations of the afferent channel overlap each other and are not clearly seen in total preparations. Fig. 13 d shows a stretched endogynium. The ventral shield is entirely disconnected from the dorsal one. Gnathosoma: Tectum (Fig. 13 c) three-toothed, the middle tooth being long and thin (in all

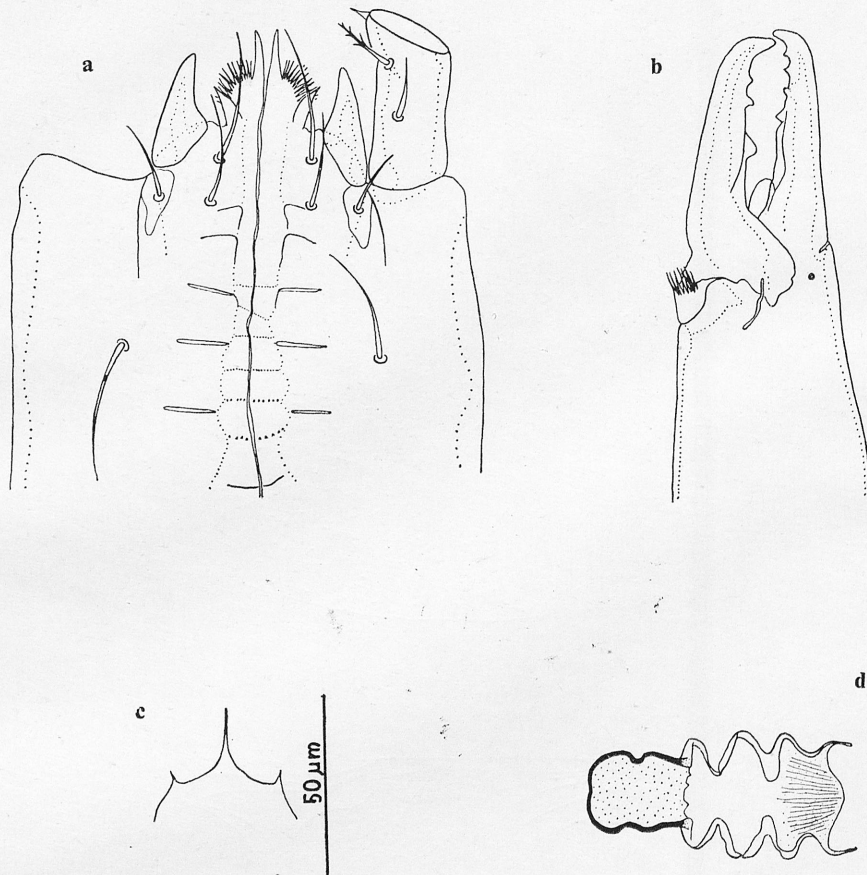


Fig. 13. *Holoparasitus quadratus* n. sp. Female, (Holotype). a — Gnathosoma, b — Chelicera, c — Tectum, d — Endogynium

specimens examined). Laminae on laciniae of gnathosoma smooth. Hypostome with 6—7 distinct grooves. Seta  $v_2$  on trochanter palpi smooth,  $v_1$  bilaterally dentate. Cheliceras (Fig. 13 b): Digitus mobilis with 3 teeth. The digitus fixus has, proceeding from the apical tooth towards the base, two teeth in front of and one tooth and a long laminar edge behind the pilus dentilis. The synarthroidal membrane is rounded.

Male: Diagnosis. Axillar process on femur II ending in a seta (Fig. 15). Description: Measurements —  $669-738 \times 418-479 \mu$ . Ventral side: The anterior margin of the sternum protrudes forward on both sides of the genital opening. The setae that separate the ventral shield from the dorsal one are

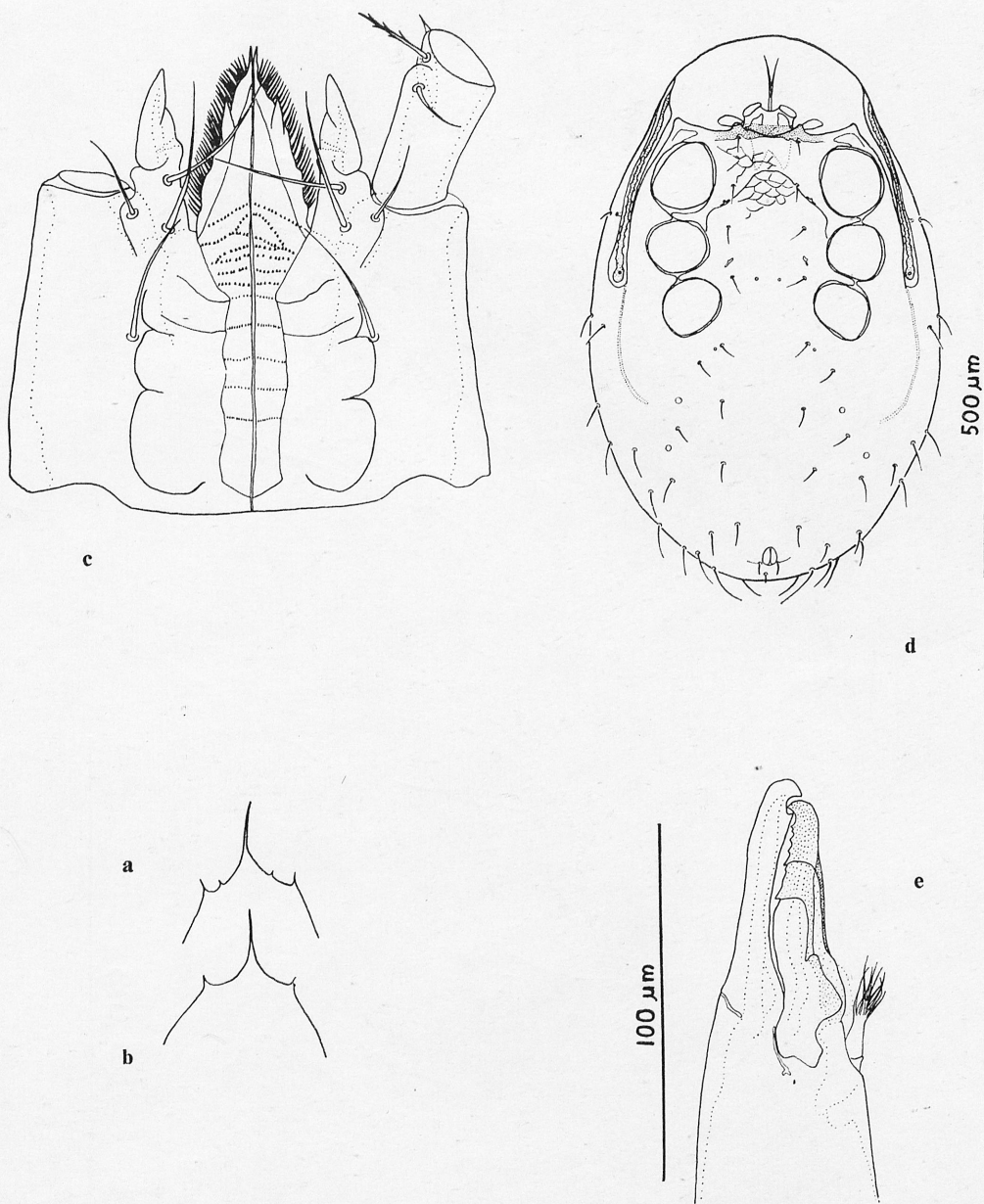


Fig. 14. *Holoparasitus quadratus* n. sp. Male, (Paratype). a, b — Tectum, c — Gnathosoma, d — Ventral side of idiosoma, e — Chelicera

hardly visible owing to strong sclerotization (Fig. 14 d). Gnathosoma: Tectum (Fig. 14 a, b) with three teeth, the middle tooth being thin and elongate. Two additional small denticles occur occasionally between it and the side teeth (Fig. 14 a). Corniculi (Fig. 14 c) with slight indentation on inner side. Laminae on laciniae pointed. Hypostome with 12 well-seen grooves. Seta  $v_2$  on trochanter

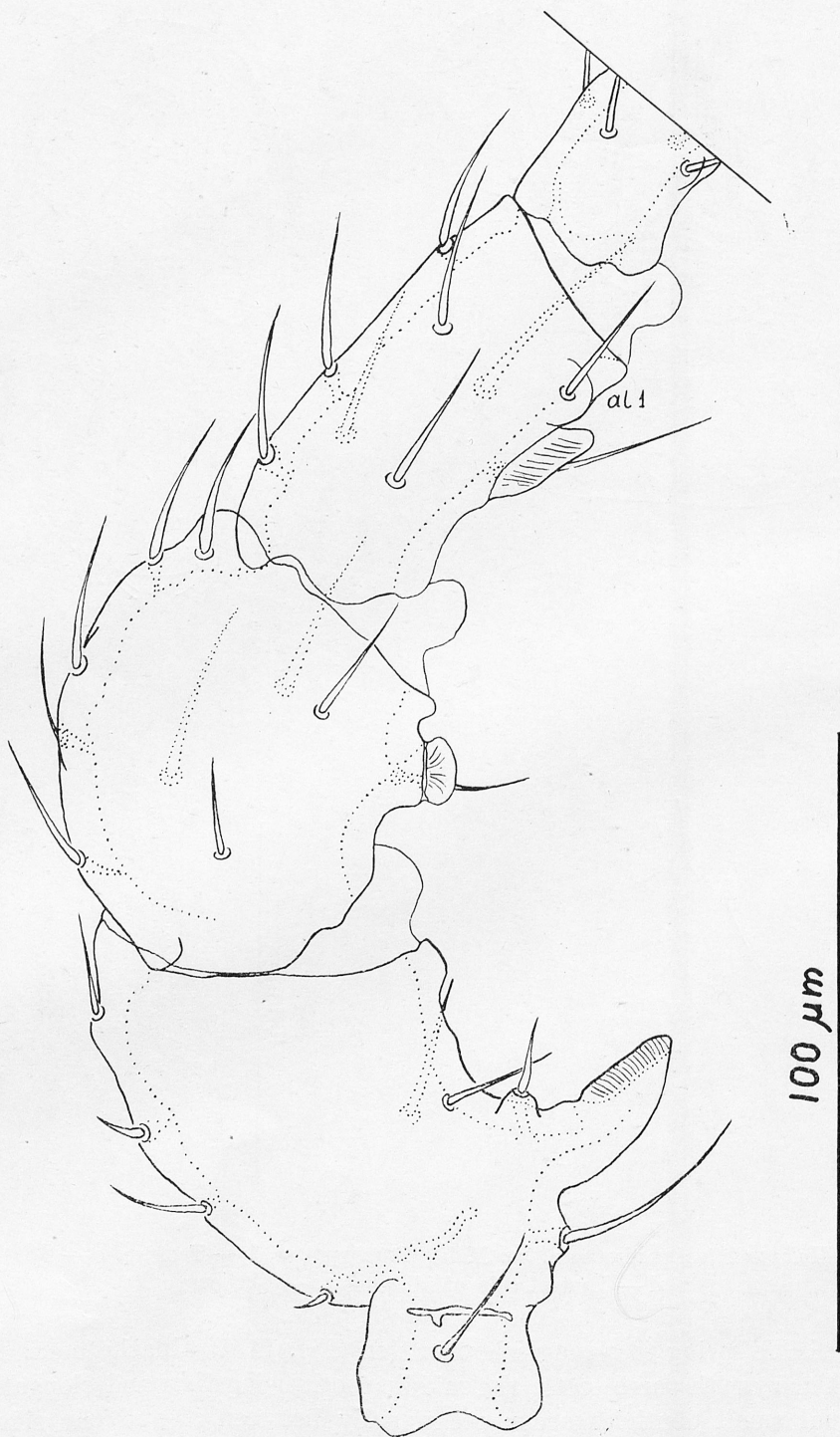


Fig. 15. *Holoparasitus quadratus* n. sp. Male, (Paratype). Leg II (Fe, Ge, Ti)



palpi smooth, turned in the opposite direction from that of seta  $v_1$ , which is dentate. The digitus nobilis of chelicera (Fig. 14 e) is thin and toothless, there being only a notch for the apical tooth of the digitus fixus in its terminal portion. Digitus fixus with 6 teeth, flagellum brushlike. Leg II is presented in Fig. 15. Calcar fairly sharply pointed. Axillar process small, with a seta growing out of its top. The apophysis on the genu is laminar and situated on a small prominence. The apophysis of the tibia is elongated and occupies the middle third of its length. Seta  $al_1$  emerges from a circular hillock.

Occurrence: Specimens of this species were taken from the litter of a damp beech forest in the Slonne Mts. (Southern Poland) and a damp mixed forest at Myślenice (Kraków region, Southern Poland).

*H. quadratus* n. sp. belongs to the group (acc. to MICHERDZIŃSKI, 1969) or subgenus (acc. to HOLZMANN, 1969) *Ologamasiphis*, because in females the ventral shield is not grown together with the dorsal. On the other hand, in the males known from this group the two shields are evidently grown together, as in all the other members of the genus *Holoparasitus*. Two species of the group *Ologamasiphis* have hitherto been known, *H. rotulifer* (WILLMANN, 1940) and *H. minimus* (HOLZMANN, 1955), described recently in detail by HOLZMANN (1969). As will be seen from these descriptions, the females of *H. quadratus* n. sp. differ from the above-mentioned species chiefly in their endogynium and the outline or ending of the epigynium, whereas the males, above all, in their characteristic seta on the axillar process of leg II.

### *Holoparasitus bilaminatus* n. sp.

Holotype: female from the Kampinos N. P., 19th July, 1969 (Parasit. No. 525 A).

Diagnosis. The structure of the endogynium is characteristic (Fig. 17 c). It has 2 laminar processes dentate at the end and, in addition, under them two grooves ending in teeth on the inner surface of the endogynium.

Description: Idiosoma measurements —  $665 \times 445 \mu$ . The ventral shield is not completely separated from the dorsal one. The tapelike-prae-endopodalia are grown together in the middle. Small additional plates adhere to their ends. Paragynium as in Fig. 17 b, epigynium (Fig. 17 a) with large middle tooth and elongate depression on inner side of terminal portion. Well-developed alar processes on basal portion. The side teeth and margin between them are rather heavily sclerotized. The endogynium (Fig. 17 c) resembles a cup in shape. It lies somewhat obliquely in the female body. A thin chitin lamina extends from the caudodorsal margin forward and it splits into two plates at its mid-length. Their ends are additionally dentate. On the ventral side of the endogynium there are two equatorially situated groove-like depressions ending in teeth directed to the interior of the endogynium. Gnathosoma: Tectum (Fig. 18 b) three-toothed, laminae on laciniae fairly broad, digitate at end (Fig. 18 a), hypostome with  $Q = 10$ . All setae on gnathosoma smooth, seta  $v_1$  of trochanter palpi uniformly dentate. Cheliceras (Fig. 18 c): Digitus fixus with 3 teeth in front

of and 2 behind pilus dentilis. A slightly bent thin chitin lamina stretches from the last tooth to the base of the digit. Digitus mobilis with three teeth, flagellum small.

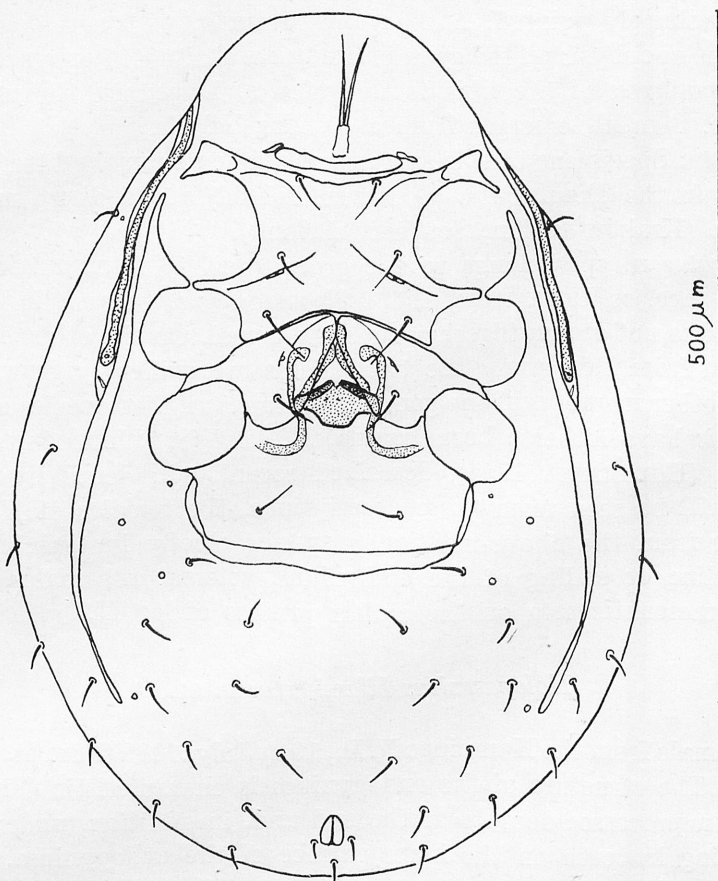


Fig. 16. *Holoparasitus bilaminatus* n. sp. Female, (Holotype). Ventral side of idiosoma

No male has been found.

Occurrence: One female was found in the litter of a damp mixed forest.

The morphological characters place the female of this new species close to that of *H. intermedius* HOLZMANN 1969. Their alar processes on the lower side of the middle tooth of the epigynum are very similar in structure. Besides, the endogynium of *H. intermedius* (HOLZM.) has numerous teeth in its middle portion (HOLZMANN, 1969), in which it partly resembles that of *H. bilaminatus*.

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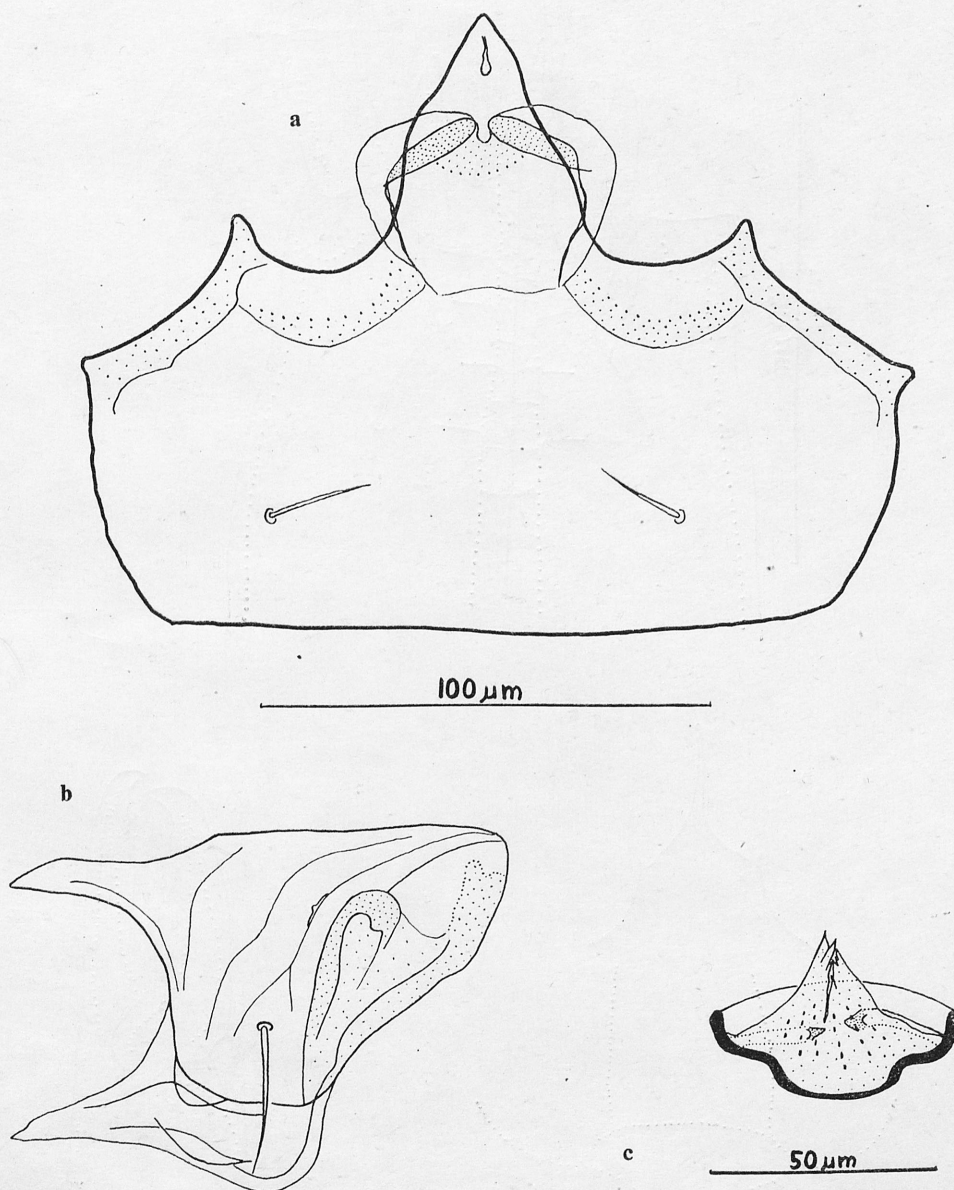


Fig. 17. *Holoparasitus bilaminatus* n. sp.: Female, (Holotype). a — Epigynum, b — Paragynium, c — Endogynium



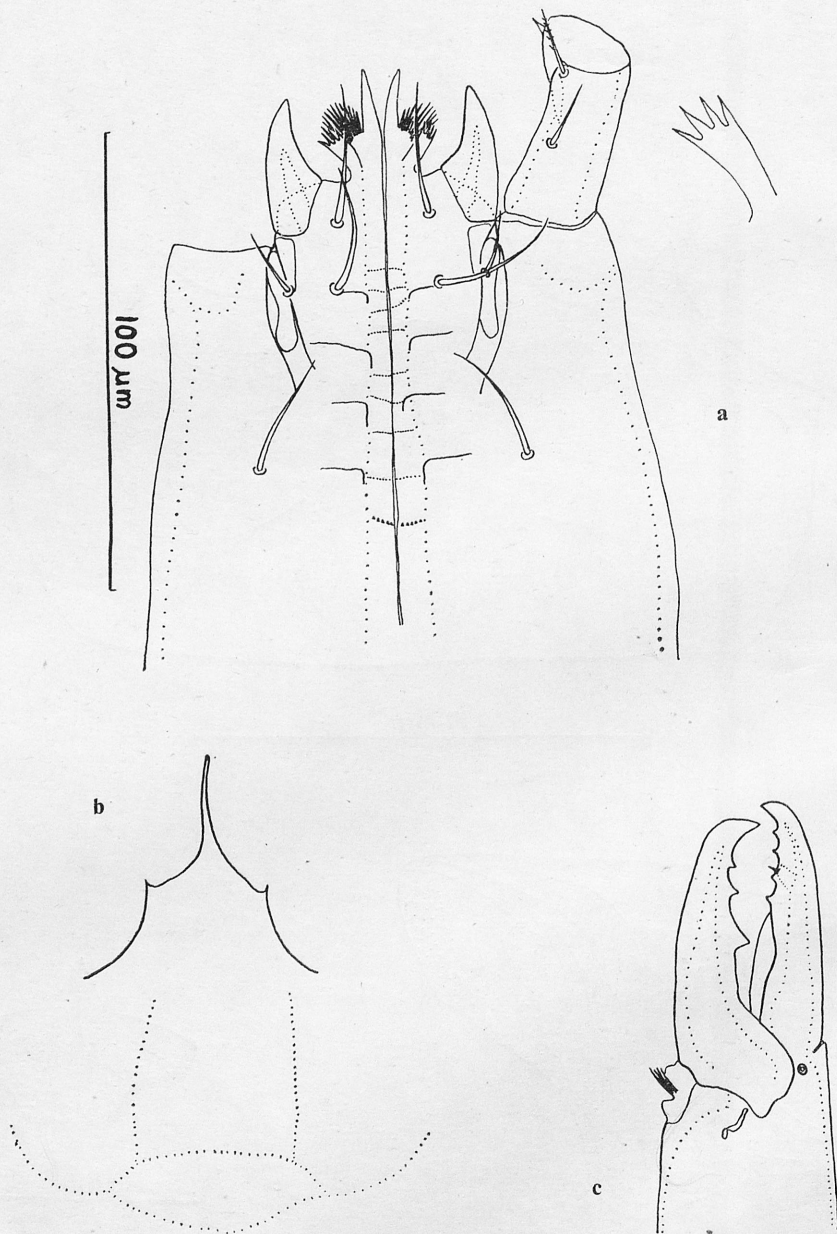


Fig. 18. *Holoparasitus bilaminatus* n. sp. Female, (Holotype). a — Gnathosoma and lamina, b — Tectum, c — Chelicera

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## STRESZCZENIE

Praca zawiera opisy nowych gatunków z rodzaju *Holoparasitus* OUDEMANS 1936: *Holoparasitus quadratus* i *Holoparasitus bilaminatus*. Gatunek *H. quadratus* umieszczono w grupie *Ologamasiphis* (HOLZMANN, 1969). Gatunek *H. bilaminatus* aż do czasu opisania samca nie może być umieszczony w odpowiedniej grupie. Autor podaje dodatkowo opisy samicy i deutonimfy *H. pseudoperforatus* (BERLESE, 1905) oraz samca *H. excisus* (BERLESE, 1905).

## РЕЗЮМЕ

В работе описаны новые виды рода *Holoparasitus* OUDEMANS 1936: *Holoparasitus quadratus* и *Holoparasitus bilaminatus*. Вид *H. quadratus* помещён в группе *Ologamasiphis* HOLZMAN 1969. Вид *H. bilaminatus* нельзя поместить в соответственной группе до того момента, пока не будет описан самец. Дополнительно автор описывает и девтонимфу *H. pseudoperforatus* (BERLESE) а также самца *H. excisus* (BERLESE 1905).

Redaktor zeszytu: doc. dr J. Pawłowski

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