Genus	Vol. 2(4): 327-335	Wrocław, 27 XII 1991

Revision of Oribatid mites from the BERLESE collection I. Systematic position of *Hoploderma hystricum* BERLESE, 1908 and *Hoploderma pavidum* BERLESE, 1913 (*Acari*: *Oribatida*)

W. NIEDBAŁA
Zaklad Taksonomii i Ekologii Zwierząt UAM ul. Szamarzewskiego 91A, 60-569 Poznań

ABSTRACT. Redescriptions of two BERLESE's oribatid species are presented. Comments are restricted to morphological features of the type series. *Hoploderma histricinum* BERLESE, 1908 is the type species of *Hoplophthiracarus* JACOT, 1933. *Hoploderma pavidum* BERLESE, 1913 belongs to the genus *Calyptophthiracarus* and *Calyptophthiracarus cretensis* MAHUNKA, 1979 is a synonym of this species. A name *Hoplophthiracarus vanderhammenii* nov.nom. for *Hoplophthiracarus pavidus* (BERLESE) sensu HAMMEN (1963) is proposed.

While studying types of some oribatid species described by BERLESE, deposited in the Instituto Sperimentale per la Zoologia Agraria (Casine del Riccio), in April 1990, I realized that some of these species needed a redescription, and a more precise estimate of some morphological features to establish their present systematic position. I also noticed that some of BERLESE's species were ignored. Among considerable number of recently described species some were apparently not new for science since they had existed in the BERLESE collection for a long time. BERLESE's primitive oribatid mites were already discussed by HAMMEN (1959). However some of the species mentioned in that excellent paper are commented on only briefly, without analysis of morphology. Morevore, thirty years have passed since that time, and the systematic position of some species has changed greatly. In the meantime, a very scrupulously prepaired catalogue of species in the BERLESE collection (CASTAGNOLI, PEGAZZANO 1985) was published. The present paper is the first of a series of redescriptions of BERLESE's oribatid species. It concerns two species which so far were placed in *Hoplophthiracarus*. One of them, *Hoploderma histricinum* BERLESE, 1908, was designated as the type-species of *Hoplophthiracarus* by JACOT (1933). This species is characterised (among other things) by a long seta on tibia IV, independent of the solenidion.

The other species - *Hoploderma pavidum* BERLESE, 1913 - with the seta on tibia IV short and coupled with the solenidion - at present belongs to the genus *Calyptophthiracarus*. In the meantime(MAHUNKA 1979) described *Hoplophthiracarus cretensis* which is a synonym of that species. In 1963 HAMMEN presented a detailed description of what he considered to be *Hoplophthiracarus pavidus* (BERLESE) which, instead dealt with an undescribed species. Therefore I propose to name *Hoplophthiracarus pavidus* sensu HAMMEN (1963) in his honour: ***Hoplophthiracarus vanderhammeni* n.sp.**

Hoplophthiracarus histricinus (Berlese, 1908)

(figs. 1-9)

Hoploderma hystricinum BERLESE 1908
Hoplophthiracarus histricinus NIEDBAŁA 1992
Phthiracarus histricinus v. *nitidor* BERLESE 1923 (?).

There are two slides of *H. histricinus* in the BERLESE collection: No 72-40 (body: length 355 m, width 240 m) and 208/28. Both of them present specimens situated with the ventral side to the top, which is inconvenient for examination of many morphological features. A few more important characters, such as tibia IV with seta l' long and independent from solenidion, the arrangement of setae on genital and anal plates, the shape of sensillus, interlamellar, lamellar and rostral setae, are well discernible.

A more precise description of that species based on a specimen from Canada is given in my monograph (NIEDBAŁA 1992). My present comments are restricted to the morphological features visible in the type series. Prodorsum with sensillus sickle-shaped, thickened in its distal part, with acute tip, slightly roughened. Interlamellar setae perpendicular to the surface of prodorsum, similar to gastronotic setae, thick, strong, with distinct barbs distally. Lamellar and rostral setae small, setiform, the rostral setae longer than lamellars. There are 9 pairs of genital setae and one small pair of aggenital setae. The formula of genital setae is (4+3): 2 with its arrangement typical for *Hoplophthiracarus*. Ano-adanal plate with five strong setae, ad2 > ad1 > an > ad3.

I studied two specimens of the subspecies *Phthiracarus histricinus* v. *nitidor* BERLESE, 1923 as well (slides No 28/30 and 208/27). The specimen on the slide 208/27 lies with its dorsum up, at an angle. Features studied indicate that this may not be a separate subspecies. It is larger, and setae ad1 are longer than ad2, which may be within the range of intraspecific variation, as those features are variable in many other *Phthiracaroidea*.

Calyptophthiracarus pavidus (BERLESE, 1913)

(Figs. 10-14)

Hoploderma pavidum BERLESE 1913
Hoplophthiracarus cretensis MAHUNKA, 1979 **syn. nov.**
Calyptophthiracarus cretensis (BERLESE): NIEDBAŁA 1992.

I studied the specimen on slide 142/10, labelled as follows: "*Hoploderma*

pavidum tipico BERL., Tiarno'' (prodorsum: length 255 m, height 105 m, notogaster: length 495 m, height 330 m) and the specimen on slide 207/50 labelled: ''*Phthiracarus pavidus* cotipo-rotto, Tiarno musca''.

Thanks to the kindness of Dr. S. MAHUNKA I was able to study the paratype of *Hoplophthiracarus cretensis* MAHUNKA 1979 as well. A detailed description of that species is presented in my monograph (NIEDBAŁA 1992). Only the most important features are pointed out below, especially those well discernible in type specimens.

Prodorsum with interlamellar setae erect, longer than rostral and lamellar ones. Sensillus of type specimen without head (presumably it has been broken), whereas well visible in the specimen from Tiarno (fig.11). 17 pairs of setae on notogaster , each covered with tiny spines in its distal half. Seta c2 situated a short distance from the anterior edge of notogaster, nearly at the same distance as c1 and c3. Vestigial setae f1 placed under setae h1. Two lyrifissures, ia and im, present. Genital setae formula as follows (4+3): 2, arranged typically for *Calyptophthiracarus*. Anal plate with five setae, adanal setae longer than anal setae. The solenidion is coupled with short seta l', on tibia IV. On femur I setae d and l'' placed distally.

Hoplophthiracarus vanderhammeni sp.nov.

(Figs. 15-24)

Hoplophthiracarus pavidus (BERLESE) sensu HAMMEN (1963)
Hoplophthiracarus pavidus (BERLESE): NIEDBAŁA (1992).

Some years ago, TRAVE noted (personal communication) the fact that the species depicted by HAMMEN (1963) was not the one of BERLESE. Here I present a diagnosis of that species based on specimens collected in Poland. Colour chestnut brown. The surface of the body punctate. The dorsal region and lateral regions absent. The lateral carinae reach the sinus. The sensillus has a thickened distal part with blunt tip, covered with small spines. Rostral and lamellar setae smooth and spiniform, interlamellar setae erect and rough; in > ro > ex > le. Notogaster with 15 pairs of strong, rough setae. Setae c1 and c3 slightly remote from the anterior border, seta c2 far from the border. Vestigial setae f1 placed below h1 setae. 2 pairs of lyrifissures ia and im. Infracapitular setae h longer than the distance between them. Genital setae formula (4+3): 2. Five setae on ano-adanal plate, ad2 > ad1 > an > ad3. The number of setae on legs is reduced, seta s on tarsus I absent. Seta l' on tibia IV long and independent from solenidion, setae a'' of tarsus I, a'', ft'' on tarsus II straight distally. *H. vanderhammeni* sp. nov. differs from similar ones in the following features: lamellar setae short, 15 pairs of gastronotic setae, setae c1 and c3 not far removed from the anterior border, seta c2 far from the border, seta g6 posterior to seta g5, l'' on femur I placed on the transverse midline of the segment, seta l' of tibia IV long and independent of the solenidion.

Type specimens: holotype and paratypes according to description by HAMMEN (1963) in Rijksmuseum van Naturlijke Historie, Leiden.

I would like to express my gratitude to Dr. M. CASTAGNOLI, F. PEGAZZANO and

R. NANNELI from Institute Sperimentale per la Zoologia Agraria for creating an excellent atmosphere for studying species from the BERLESE Collection.

REFERENCES

BERLESE, A., 1908. Elenco di generi e specie nuove di *Acari*. Redia, Firenze, **5**(1): 1-15.

BERLESE, A., 1913. *Acari* nuovi. Redia, Firenze, **9**(1): 77-111, pl. 1-8.

BERLESE, A., 1923. Cenuria sesta di *Acari* nuovi. Redia, Firenze, **15**(1-2): 237-262.

CASTAGNOLI, M., PEGAZZANO F., 1985. Catalogue of the BERLESE Acaroteca. Ist. Sper. Zool. Agr., Firenze, 1-490.

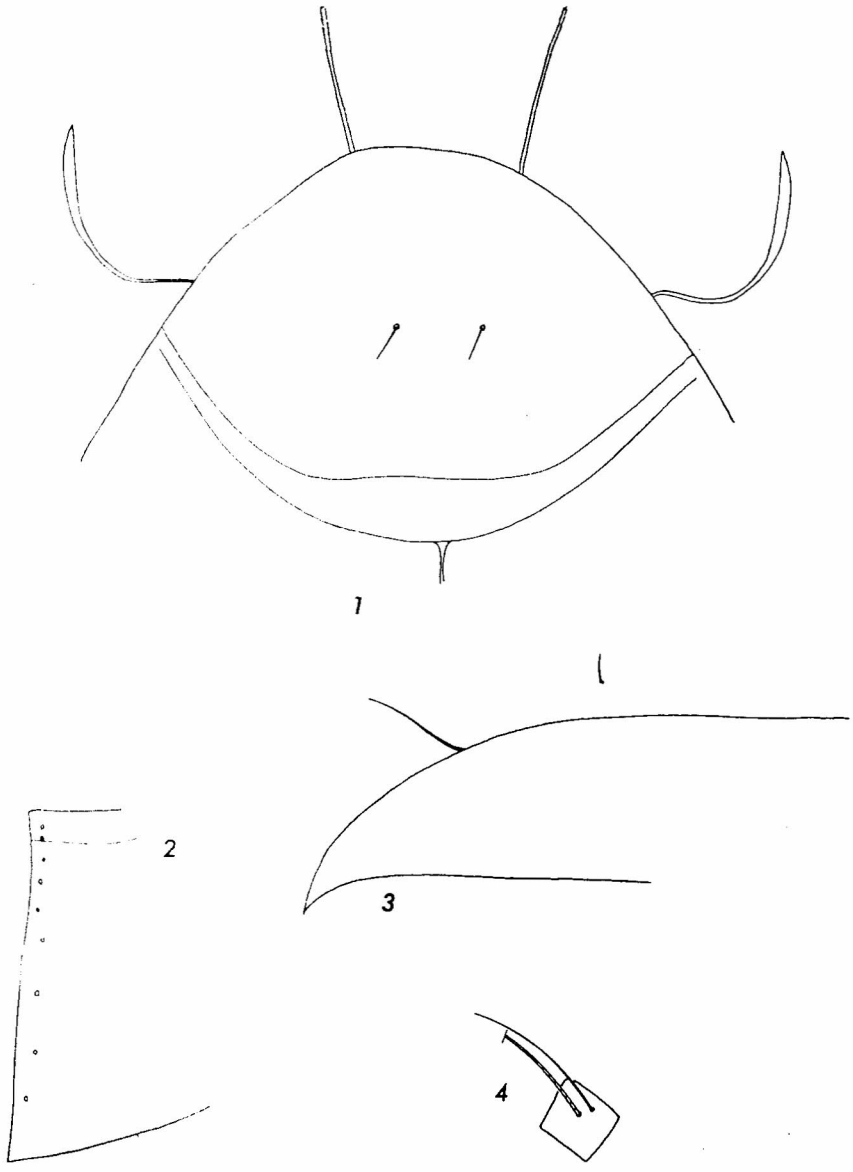
HAMMEN, L. v.d., 1959. BERLESE's Primitive Oribatid Mites. Zool. Verh., Leyden, **40**: 1-93.

HAMMEN, L. v.d., 1963. The Oribatid family *Phthiracaridae*. I. Introduction and redescription of *Hoplophthiracarus pavidus* (Berlese). Acarologia, Abbeville, **5**(2): 306-317, 8 ff.

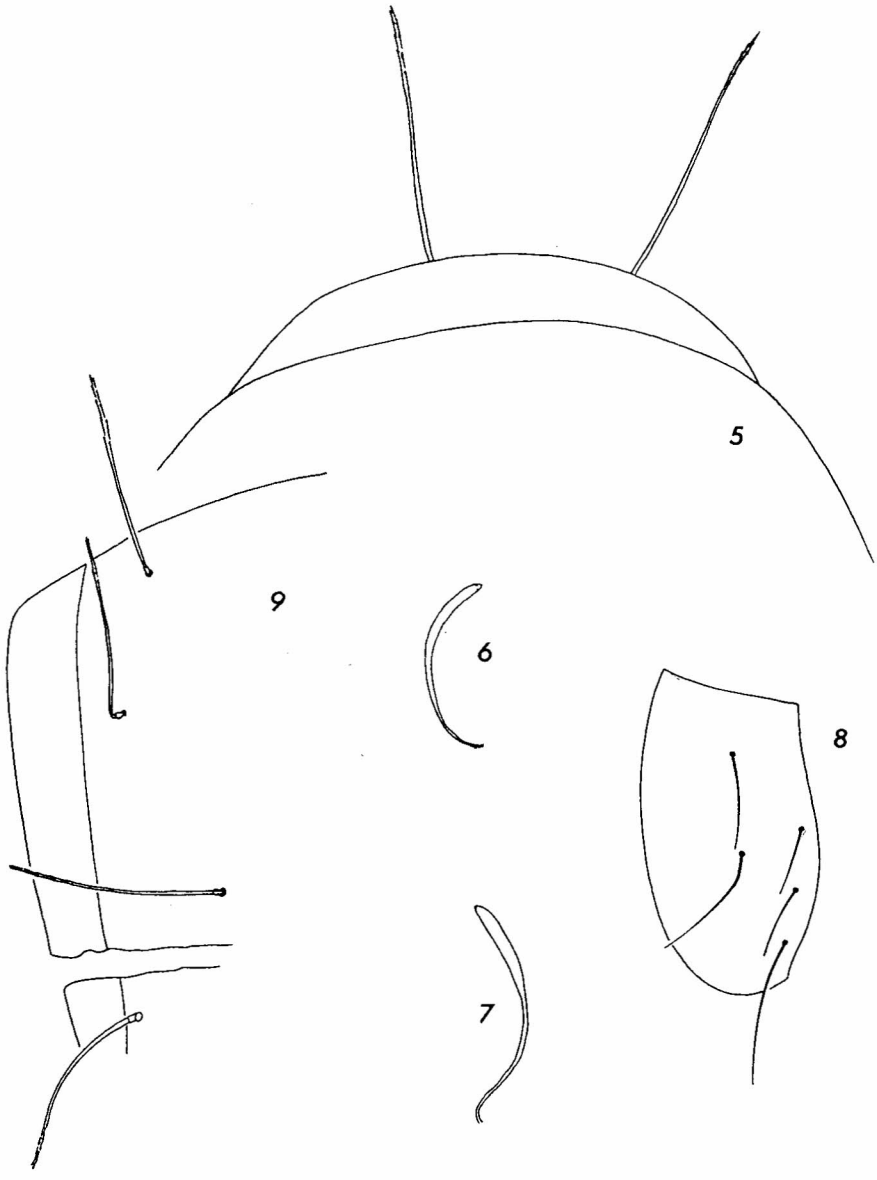
JACOT, A.P., 1933. Phthiracarid mites of Florida.- J. Elisha Mitch. Sci. Soc., Chapel Hill, **48**(2): 232-267, 34 ff.

MAHUNKA, S., 1979. Neue und interessante Milben aus dem Genfer Museum XLI. Vierter Beitrag zur Kenntnis der Oribatiden-Fauna Griechenlands (*Acari*: *Oribatida*). Rev. suisse Zool. **86**(2): 541-571, 58 ff.

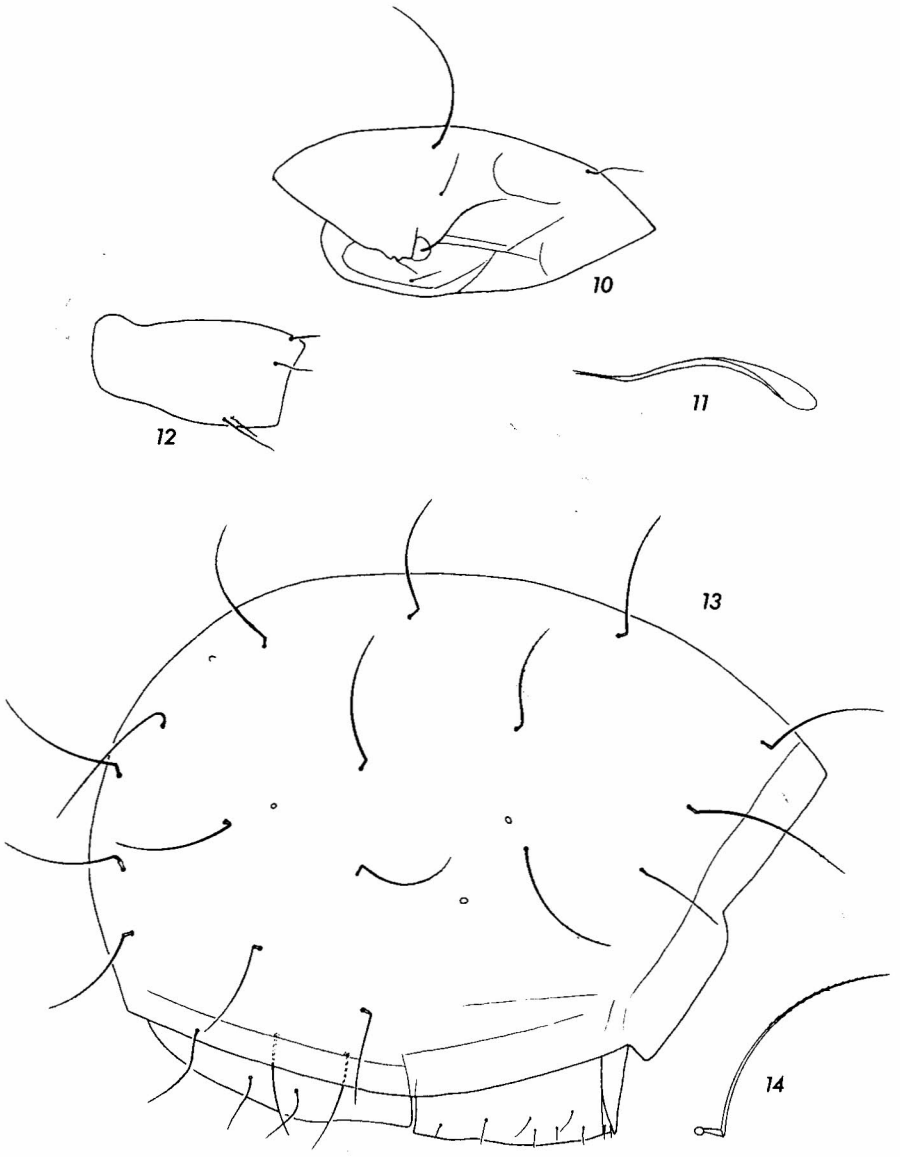
NIEDBAŁA, W., 1992. *Phthiracaroidea* (*Acari*, *Oribatida*). Systematic studies. PWN, Elsevier, Warszawa, Amsterdam, 612 pp.



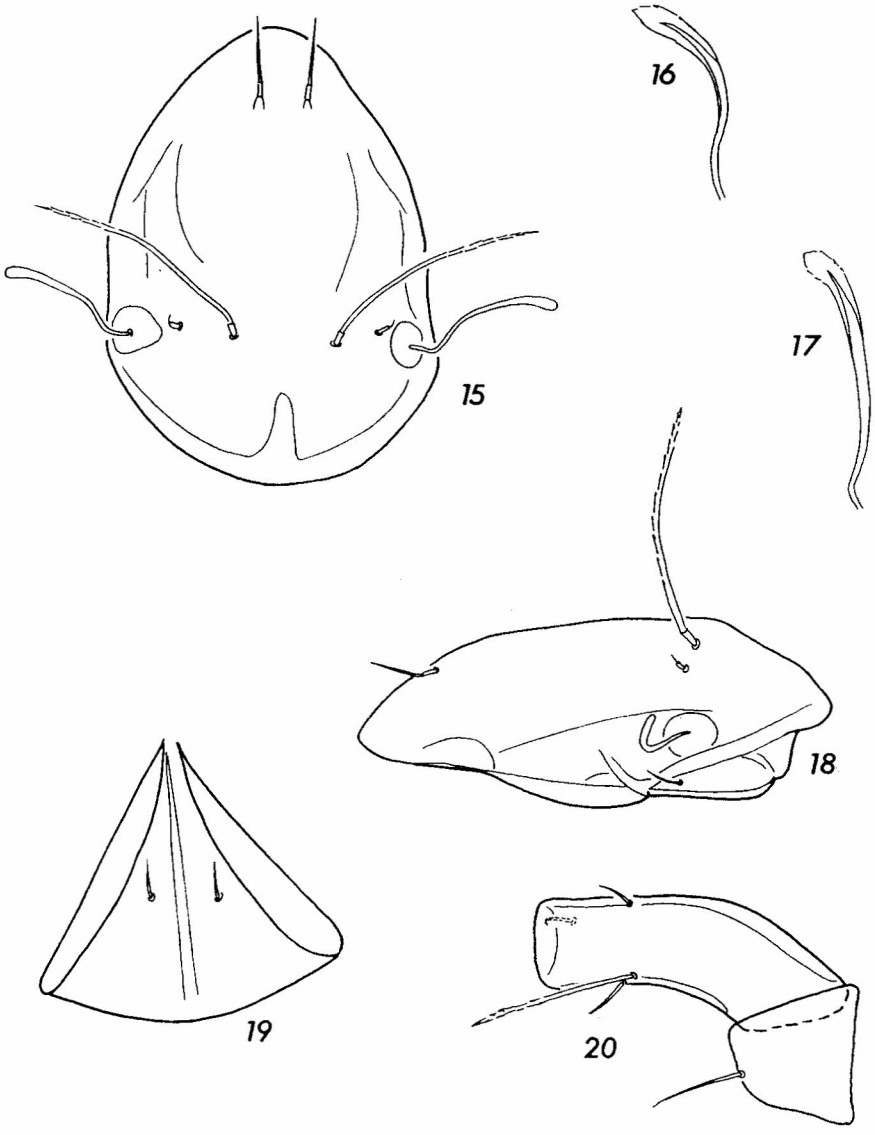
1-4. *Hoplophthiracarus histricinus* (BERLESE, 1908): 1, slide 72-40 "*Hoploderma histricinum* BERL. Washington America tipico", 1 - frontal view, 2 - fragment of genito-aggenital plate; 3, 4: slide 208/28 "*Phthiracarus histricinus* BERL. piccolo Washington N.A.", 3 - fragment of prodorsum in lateral view, 4 - tibia of leg IV



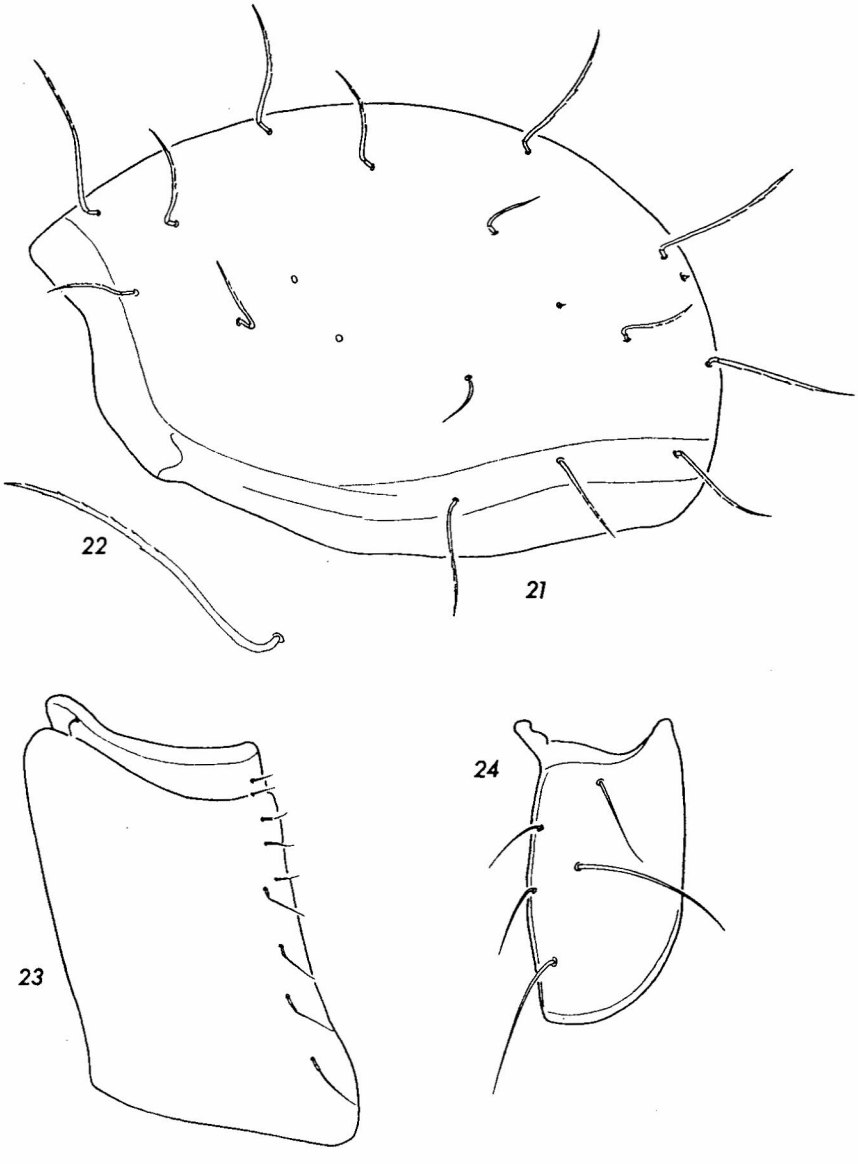
5-9. *Hoplophthiracarus histricinus* (BERLESE, 1908): 5-8: slide 208/27 "*Phthiracarus histricinus* BERL. v. *nitidior* BERL. tipico Lake City Florida", 5 - fragment of prodorsum in posterior view, 6,7 - sensillus, 8 - anoadanal plate; 9 - slide 28/30 "*Phthiracarus histricinus* BERL. v. *nitidior* BERL. Lake City Florida", anterior part of notogaster



10-14. *Calyptophthiracarus pavidus* (BERLESE, 1913): 10, 12-14 - slide 142/10 "*Hoploderma pavidum* tipico BERL. Tiarno", 11 - slide 207/50 "*Phthiracarus pavidus* cotipo-rotto Tiarno musca"; 10 - prodorsum lateral view, 11 - sensillus, 12 - femur of leg I, 13 - notogaster, lateral view, 14 - seta h1



15-20. *Hoplophthiracarus vanderhammeni* sp. nov. (Polish specimen): 15 - prodorsum, dorsal view, 16 - lateral view, 17,18 - sensillus, 19 - mentum of the infracapitulum, 20 - trochanter and femur of leg I



21-24. *Hoplophthiracarus vanderhammeni* sp. nov. (Polish specimen): 21 - notogaster, lateral view, 22 - seta cl, 23 - genito-aggenital plate, 24 - ano-adanal plate