PARACHIPTERIA SAVAGEI, A NEW SPECIES OF ORIBATID MITE FROM NORTH CAROLINA U.S.A. (*ACARI, CRYPTOSTIGMATA, ORIBATELLOIDEA, ACHIPTERIIDAE*)

BY

F. Reese Nevin
State University College of Arts and Science Plattsburgh, New York. U.S.A.

The following description and drawings of *Parachipteria savagei* are based upon a study of specimens from Collection 21, Vial 61 of the Acarology Laboratory of The Ohio State University, Columbus, Ohio.

Genus-*Parachipteria* Van Der Hammen 1952

Type : *Oribata punctata* (Nicolet 1855)

Generic characteristics : Pteromorphs well developed, extending to a point near the tip of the rostrum ; true porose areas present ; legs tridactylous (Balogh 1972).

The specimens were collected by T. Savage from moss at Heintooga Overlook, Blue Ridge Parkway, Smoky Mountain, North Carolina on May 21, 1961. The description is based upon the holotype supplemented by a study of six paratypes. The holotype and one paratype will be deposited at the Agricultural Research Center at Bethesda, Maryland. Five paratypes will be returned to the collection at the Acarology Laboratory of The Ohio State University.

I wish to thank Dr. Guilford S. Ide, Gurator of Acarology, The Ohio State University, for the loan of the specimens and for granting permission to describe the new species.

Description of **Parachipteria savagei** n. sp

Color : Light to medium amber. Specimens are light enough in color for study in lactic acid without the necessity of bleaching.

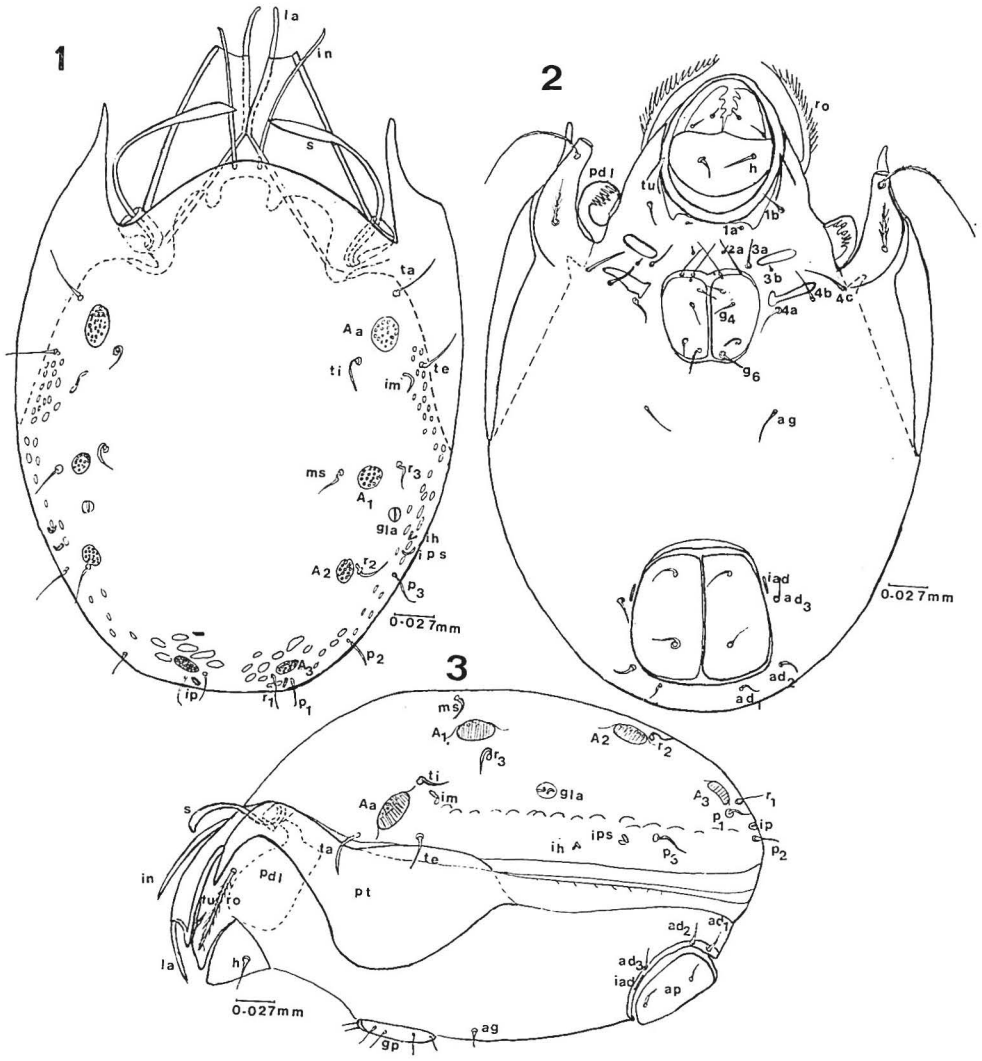
Size : Holotype L-0.462 mm, W- 0.305 mm. Median for seven specimens : L- 0.457 mm, W- 0.317 mm.

Range in L. 0.440 mm to 0.462 mm, in W. 0. 297 mm to 0.330 mm.

Prodorsum (figs 1, 2, and 3). The lamellae are long and broad covering the greater part of the prodorsum. They fuse for a short distance along the midline. The lamellar setae arise from the tip of the median margin of the lamellae. They extend anteriorly and bend slightly ventrally toward their tips. They are smooth and pointed. They measure 0.33 mm in length as seen in lateral view. From the dorsal view, due to the ventral bending of the prodorsum, the interlamellar setae seem to extend beyond the apices of the lamellae. In lateral view which

permits most accurate measurement, they measure 0.09 mm in length. They are smooth, pointed and bend ventrad toward their tips. The stalk of the sensillus curves first laterad then anteriomesad so that the heads of the sensilli are directed toward one another toward the point of fusion of the lateral plates of the lamellae on the midline. The head of the sensillus is broadened to about double the thickness of the pedical. It is pointed and smooth. In lateral view (fig. 3) it is sickleshaped and the head is about a third wider than when seen in dorsal view, and is slightly rounded at the tip.

Notogaster. There are ten pairs of notogastral setae with setae te and ta longer than the others. The areas porosae are well developed. Porose area, Aa, is usually oval but depending upon the point at which it is observed may appear spherical. Porose areas A_1 and A_2 appear spherical in dorsal aspect, but in lateral view they are oval. Porose area A_3 is oval. Lyrifissures im, ih, ips, and ip are present. They are most readily detected in lateral view and may then be located in dorsal view. The glandular openings are located posterior to setae r_3.



FIGS. 1-3 : **Parachipteria savagei** n. sp ; 1) Dorsal view ; 2) Ventral view ; 3) Lateral view.

At the lateral margins of the notogaster and near the porose areas, A_3, irregular rounded spots are found in the hypodermis. In lateral view they appear quite irregular. When the specimens are viewed from the dorsum they make detection of the porose area, A_3, difficult as they may be about the same size and shape as the porose area.

There is no distinct lenticulus although the area of a lenticulus is lightly pigmented.

Ventral surface (fig. 2). The rostral setae are large and distinctly barbed. The barbed nature may be somewhat exaggerated in figure 2. A distinct terminal or apical tooth is not present on pedotectum I. A series of riblike or fingerlike chitinous thickenings are present on pedotectum I giving it a basket like appearance from the ventral view. Figure 4 shows pedotectum I as it appears at the base of leg I ; figure 3 shows it in lateral view. The tutorium is tight against the posteriolateral margin of the rostrum. The epimeral setae are as follows : 1a, 1b ; 2a ; 3a and 3b ; 4a, 4b and 4c. Seta la is very small. Setae 1c and 3c are absent. There are six pairs of genital setae, two in the anterior border of each plate. Genital seta, g_6, is close to the posterior border of the genital plate. Setae, g_4 and g_5 are farther separated from one another than are the other adjacent setae. The single pair of aggenital setae are closer to the genital than to the anal plate.

There are two pairs of anal, three pairs of adanal setae. The lyrifissure, iad, is anterior and mesad to the third adanal seta, ad_3.

Lateral view (Fig 3). The most pronounced feature of the lateral surface is the appearance of the pteromorph. At its anterior end the pteromorph bends ventrally hooklike over the side of the rostrum. The bothridium of the sensillus is covered by the pteromorph. The relationships among the lyrifissures, setae, and areae porosae are more accurately seen in lateral view.

The legs. Without a careful study of the bases of legs I and II these legs can readily be confused with one another. The femur of leg II crosses over the femur of leg I.

Setal formulae : trochanters -1-1-2-1 ; femora-5-5-3-2 ; genua-3-3-1-1 ; tibiae-4-4-3-3 ; tarsi-19-15-15-12.

Solenidial formulae : trochanters-0-0-0-0 ; femora-0-0-0-0 ; genua-1-1-1-1 ; tibiae-2-1-1-1 ; tarsi-2-2-0-0.

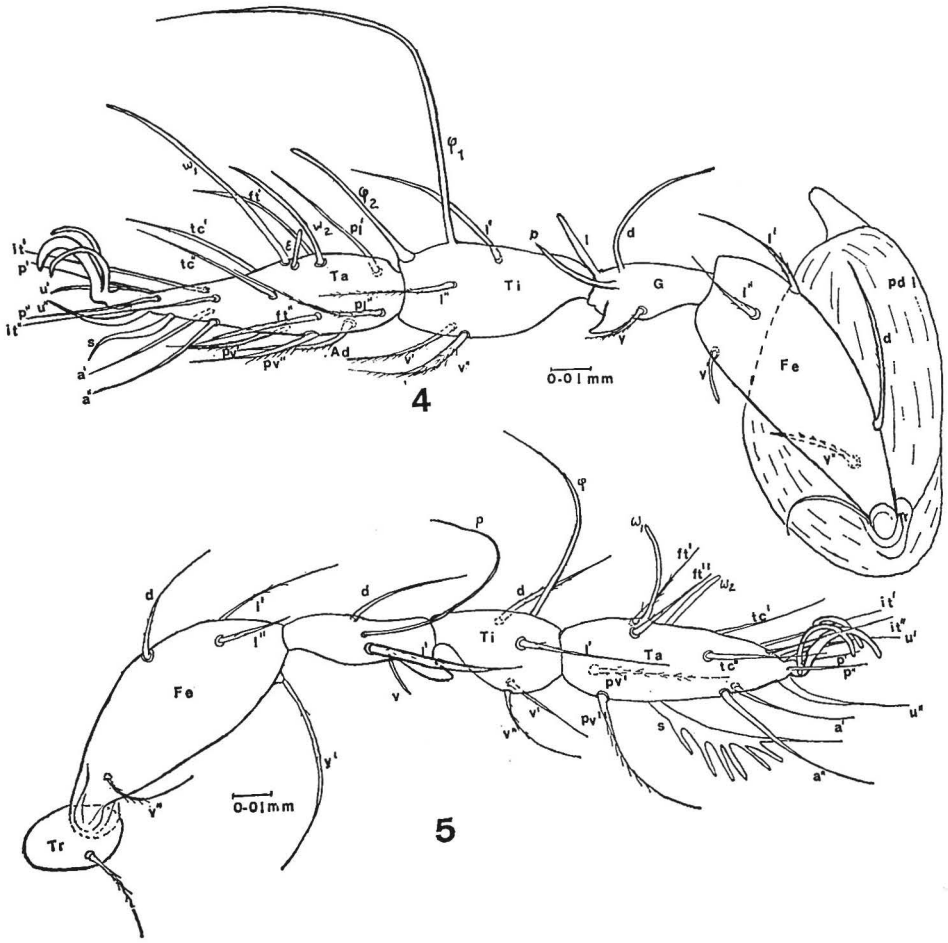
Ventral seta V of femur II is long and backward projecting ; on legs I and IV this seta is short ; on femur III it is intermediate in size.

Both genu I and II bear a pronounced latero-ventral spur. This spur is larger on genu II. On genu II the solenidion is long and tenuous. Seta s of tarsus II is thick, branched and glove-like in appearence.

Discussion

Parachipteria savagei is larger than *P. bella* (Sellnick), smaller than *P. punctata* (Nicolet) *P. patavina* (Oudemans), *P. willmanni* van der Hammen, *P. nivalis* (Hammer) and *P. petiti* Travé, but within the size range for *P. perproxima* (Sellnick).

P. savagei differs from the Canadian species *P. nivalis* in coloration, size, shape, relative lengths of the notogastral setae, position of sensilli, size of porose areas and in the general shape of the pteromorphs. It resembles *P. nivalis* in the presence of what Hammer described as " irregular veins " on pedotectum I (fig. 4).

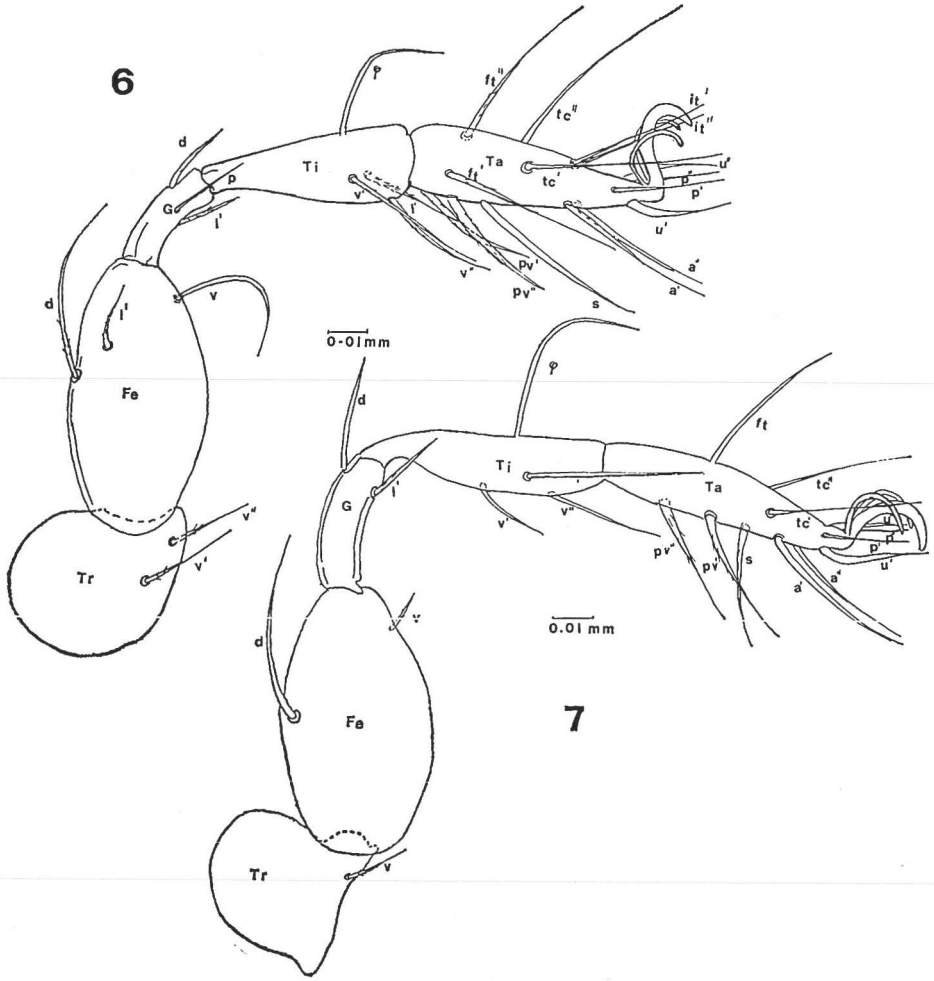


FIGS. 4-5 : **Parachipteria savagei** n. sp ; 4) Left Leg I. Antiaxial view with Pedotectum I ; 5) Right Leg II. Atiaxial view.

P. perproxima possesses a latero-terminal spine on pedotectum I, lacking in *P. savagei* ; epimeral setae 1a and 2a are alveoli only in *P. perproxima* while in *P. savagei* they are small distinct setae : the head of the sensillus of *P. perproxima* is not directed toward the point of fusion of the lamellar plates ; the lateral tooth of the lamellar cusp is long and pointed in *P. perproxima* when seen in dorsal view, in *P. savagei* the tip of the lamella is truncate in dorsal view. *P. savagei* lacks the glossy appearance associated with the *Achipteriidae*. The punctate nature of the cuticula associated especially with *P. punctata, P. willmanni,* and *P. petiti* is not found in *P. savagei.*

The disparity in the size of setae ta and te in comparison with other notogastral setae is not as pronounced in *P. savagei* as in others species.

Since *P. petiti* has been more completely described than have other species the following differences between *P. petiti* and *P. savagei* are noted : pedotectum I of *P. petiti* posseses a spine which is lacking in *P. savagei* ; epimeral seta 1c and 3c are lacking in *P. savagei* ; seta ex is also lacking ; *P. savagei* lacks one seta, Ad on tarsus I ; genu I of *P. savagei* bears a large latero-ventral spine not mentioned in the description of *P. petiti* ; the solenidion, p, of genu II of *P. savagei* is long and tenuous : there are no denticles on the lateral tarsal claws of *P. savagei* as described for *P. petiti.*



FIGS. 6-7 : **Parachipteria savagei** n. sp ; 6) Left Leg III. Antiaxial view ; 7) Left Leg IV. Antiaxial view.

P. patavina may be readily separated from *P. savagei* by its short, broad, truncated forward projecting sensillus and by the absence of the adalar porose areas.

ABSTRACT

Parachipteria savagei n. sp. is distinguished by size (L-A 457 mm — W-O. 317 mm) ; tips of lamellae almost truncate in dorsal view ; lamellar and interlamellar setae smooth ; heads of sensilli smooth, directed toward point of fusion of lamellar plates on longitudinal axis ; setae ta and te not pronouncedly longer than other notogastral setae ; irregular spots in hypodermis in dorso-lateral position ; pedopectum 1 with "irregular veins", one seta Ad lacking on tarsus 1 ; large spine or spur on genu 1 ; no denticles on lateral tarsal claw.

RÉSUMÉ

Parachipteria savagei, une nouvelle espèce d'Achipteriidae de Caroline du Nord (U.S.A.) est décrite. Elle se distingue principalement par sa taille, la forme de ses lamelles et d'autres caractères morphologiques.

REFERENCE

BALOGH (J.), 1972. — The Oribatid Genera of the World. — Akademiai Kiado. Budapest.

HAMMEN (Van Der L.), 1952. — The Oribatei (Acari) of the Netherlands. — Rijksmuseum van Natuurlijke Historie, Leiden 11-135.

HAMMER (Marie), 1952. — Investigations on the Microfauna of Northern Canada. Part. 1. Oribatidae. — Acta Arctica **9** : 1-108.

OUDEMANS (A. C.), 1927. — Notizen über Acari. 27 Reihe (Oribatidae). — Arch. Naturgesch. Abt. A **91** (8) : 120-147.

SELLNICK (M.), 1928. — Formenkreis Hornmilben, Oribatei. — P. Brohmer, Die Tierwelt Mitteleuropas **3** : 1-42.

SELLNICK (M.), 1931. — Acari Tiel 16. Zoologische Forschungscreise nach den Jonischen Insela und dem Peloponnes by Max Beier. — Akad. Wiss. Wien. Mathe- Naturwiss. Kl. Sitzwigsher **1-140** (9/10) : 693-776.

TRAVÉ (J.), 1960. — Contributions à l'Étude de la Fauna de la Massane. — Vie et Milieu. **11** (2) : 209-232.

WILLMANN (Carl.), 1931. — Mossmilben oder Oribatiden (Oribatei). — Dahl-Die Tierwelt Deutschlands **22** : 70-200.

Paru en juin 1976.