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INDIAN ERIOPHYID STUDIES

IV. RECORD OF NEW PHYLLOCOPTINE MITES
(PHYLLACOPTINAE : ERIOPHYIDAE : ACARINA)
FROM SOUTH INDIA

BY M. MOHANASUNDARAM

ABSTRACT: The present paper deals with 15 Phyllocoptine mites from South India of which 13 are new to science. Four new genera have been erected. The mites studied are, Procalacarus aliyarensis gen. n., sp. nov.; Calacarus malvae n. nov.; Metaculus foveolatae sp. nov.; Neometaculus bauhiniae gen. n., sp. nov.; Neotenogotonus fastigatus (Nalepa); Neomesalox kallarensis gen. n., sp. nov.; Paratetra albizziae sp. nov.; Paratetra integrifoliavagrans sp. nov.; Phyllocoptitrua odinae sp. nov.; Pronoteotenogotonus antiquorae gen. n., sp. nov.; Tegolophus gmelinae sp. nov.; Tegonotus coimbatorensis sp. nov.; Tegonotus convolvuli (Channabasavanna); Tetra tephrosiae sp. nov.; and Vasates dhodabettaensis sp. nov. The mites are adequately described and sketched.

RÉSUMÉ : Cette note concerne 15 Phyllocoptines dont 13 sont nouveaux pour la science. Ils ont été récoltés dans l'Inde méridionale. Les espèces étudiées sont : Procalacarus aliyarensis gen. n., sp. n.; Calacarus malvae sp. n.; Metaculus foveolatae sp. n.; Neometaculus bauhiniae gen. n., sp. n.; Neotenogotonus fastigatus (Nalepa); Neomesalox kallarensis gen. n., sp. n.; Paratetra albizziae sp. n.; Paratetra integrifoliavagrans sp. n.; Phyllocoptitrua odinae sp. n.; Pronoteotenogotonus antiquorae gen. n., sp. n.; Tegolophus gmelinae sp. n.; Tegonotus coimbatorensis sp. nov.; Tegonotus convolvuli (Channabasavanna); Tetra tephrosiae sp. n.; et Vasates dhodabettaensis sp. n.

INTRODUCTION

The paper gives an account of 15 phyllocoptine mites collected from South India. The mites belong to 13 genera of which 4 are new to science. The mites are adequately described and sketched. The following abbreviations are used to denote the various parts in the figures.

AP₁ : Internal female apodeme; CS : Side view of cauda; CV : Ventral view of cauda; D : Dorsal view of mites; ES : Side skin structure; F : Feather claw; GF₁ : Female genitalia and coxae

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from below; GM: Male genitalia; L₁: Left fore leg; L₂: Left hind leg; S: Side view of mite.

The type and paratype slides are deposited in the Department of Agricultural Entomology collection; Agricultural College and Research Institute, Tamil Nadu Agricultural University, Coimbatore - 641003, India.

**Procalacarus** new genus

The new genus is close to *Calacarus* Keifer (1940) but can be differentiated from it by the absence of the foretibial seta. In the new genus, the dorsal tubercles alone are represented as minute points.

Rostrum large, projecting down with prominent antapical seta and a pair of spines at the rostral base. Foreleg with usual setation but without the fore tibial setae. Hindleg with all setae but without the patellar setae. Cephalothoracic shield with small tubercles but lacking the dorsal setae, shield area with wax bearing lines. Anteriorly, shield overhanging rostrum base. Abdomen with a central and two lateral wax bearing ridges, the sternites not much numerous than the tergites. Abdomen with all usual setation, accessory seta absent in type species. Female genital coverflap with fine scoring basally.

**Type species:** *Procalacarus aliyarensis* sp. nov.

**Procalacarus aliyarensis** sp. nov. (Fig. 1)

**Female**: 180-190 μm long, 65 μm broad; rostrum 18 μm long down curved, antapical seta 6 μm long. Shield 60 μm wide and 45 μm long with a clear pattern of lines; projecting over the rostrum. Median line absent; admedians wavy with short projection on either side; first submedian short and joins with the admedians in the basal 1/3 length; 2nd submedian curved and joins with the admedians above the first submedian; sides of shield with 5 cells on each side; dorsal tubercles 35 μm apart without setae. Foreleg 32 μm long; tibia 8 μm long, tibial seta absent, tarsus 6 μm long; claw 8 μm long, slightly curved and knobbed at tip; feather claw 5 rayed. Hindleg 30 μm long, tibia 6 μm long; claw 7 μm long, similar to foreclaw; patellar seta absent. Coxae with all three setiferous tubercles with a clear sternal line and the coxal area clear. Abdomen with about 66 smooth tergites and 80 micro-tubercular sternites; lateral seta 25 μm long on ring 12; first ventral seta 32 μm long on ring 30; second ventral seta 22 μm long on ring 53; third ventral seta 20 μm long on ring 6 from behind; caudal seta 30 μm long; accessory seta absent. Female genitalia 20 μm wide and 15 μm long, coverflap with fine scoring on the anterior half; genital seta 10 μm long.

**Male**: Not known.

**Types**: A holotype slide and two paratype slides all with females; collected on 20.11.1975 at Aliyarnagar forest (Collection No. 203), Tamil Nadu, South India.

**Host**: Unidentified; mites found as underside leaf vagrants.

**Calacarus malvae** sp. nov. (Fig. 2)

The new species resembles *Calacarus channa-basavannae* Lukkundi (1974) but could be differentiated from it by the shield pattern, abdomen devoid of wax bearing lines; prominent abdominal setation and the smooth female genital coverflap.

**Female**: 210-220 μm long, 55 μm thick, rostrum 24 μm long, antapical seta not visible. Shield 50 μm wide, 40 μm long; median line faintly represented in midpart of shield; admedians wavy and bifurcate posteriorly and joining in the middle; first submedian represented as curved line in mid part of shield; 2nd and 3rd submedians in the border of the shield, curved and wavy; shield area and sides of shield with short
Fig. 1: Procalcarus ailyarensis sp. nov.
FIG. 2: *Calocaratus malvae* sp. nov.
scoring; dorsal tubercles just away from shield margin, 25 μm apart; dorsal setae absent. Foreleg 32 μm long; with all usual setae; tibia 8 μm long, tibial setae 7 μm long at basal half; tarsus 7 μm long; claw 10 μm long, arched and knobbed at tip; feather claw 5 rayed. Hindleg 25 μm long, femoral and tarsal setae present, patellar seta absent; tibia 6 μm long; claw 9 μm long, similar to foreclaw. Coxa with all three setiferous tubercles, coxal area with sparse scorings. Abdomen with about 90 rings, uniformly microtubercular; lateral seta 55 μm long on ring 15; first ventral seta 65 μm long on ring 35; second ventral seta 28 μm long on ring 15; third ventral seta 26 μm long on ring 10 from behind; caudal seta 65 μm long; accessory seta absent. Female genitalia a little away from hind coxae, 25 μm wide, 18 μm long, coverflap smooth without lines or granulations, genital seta 15 μm long.

■ **Male**: Not known.

■ **Types**: A holotype slide and 5 paratype slides all with females collected on 6-10-1975 at Gibichetipalayam (Collection No. 196), Tamil Nadu, South India.

**Hosts**: Hibiscus vitifolius Linn. (Malvaceae). Mites are under surface leaf vagrants.

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**Metaculus foveolatae** sp. nov. (Fig. 3)

This species resembles *Metaculus mangiferae* (Attiah) (1955) but could be differentiated by the shield pattern, 5 rayed featherclaw, the clear coxal area and the smooth female genital coverflap:

■ **Female**: 160-170 μm long, 55 μm thick; rostrum 15 μm long, pointing downwards, antapical setae 6 μm long; shield 40 μm wide, 35 μm long, with a prominent lobe overhanging rostral base; median line absent; admedian complete, diverging anteriorly; submedian complete, converges anteriorly; sides of shield granular; dorsal tubercles prominent, at rear shield margin; 25 μm apart, dorsal seta 12 μm long, pointing backwards and outwards. Foreleg 27 μm long; tibia 7 μm long, tibial seta 3 μm long at basal 1/2; tarsus 5 μm long; claw 5 μm long; feather-claw 5 rayed. Hindleg 23 μm long; tibia 6 μm long; claw 6 μm long. Coxa with the first setiferous tubercles missing; coxal area clear. Abdomen with about 34 smooth tergites; 46 sternites with fine microtubercles; lateral seta 10 μm long on ring 5; first ventral seta 50 μm long on ring 15; second ventral seta 7 μm long on ring 26; third ventral seta 18 μm long on ring 5 from behind; caudal seta 40 μm long; accessory seta absent. Female genitalia away from coxal base, 20 μm wide; 12 μm long; coverflap without lines, genital seta 7 μm long.

■ **Male**: 150 μm long; 40 μm thick; genitalia 13 μm wide; genital seta 10 μm long.

■ **Types**: A holotype slide with females and 5 paratype slides with males and females; collected on 29-7-1973 at Pazhayanur, Kerala state (Collection No. 64), South India.

Hosts: *Ficus foetida* Wall. (Moraceae). Light brown mites found on the lowerside of leaves as vagrants causing slight rusting symptoms.

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**Neometaculus** new genus

This new genus is close to *Metaculus* Keifer (1962) by the absence of the first setiferous coxal tubercles but differentiated from it by the presence of the dorsal shield tubercles away from rear shield margin and the dorsal setae pointing upward and forward.

Body spindle shaped, somewhat dorsoventrally flattened. Rostrum of normal size, projecting down. Shield with a prominent, spiny lobe over rostral base; dorsal shield tubercles away from rear shield margin, with the dorsal setae pointing upward and forward. Coxa broadly fused. First setiferous coxal tubercles and setae absent. Legs with all usual setae. Abdomen with tergites broader and strongly differentiated from sternites; tergites smooth, sternites microtubercular. All
Fig. 3: *Metaculus foveolatae* sp. nov.
abdominal setae present. Female genital cover-flap with two rows of scorings in the type species.

- **Type species**: *Neometaculus bauhiniae* sp. nov.

**Neometaculus bauhiniae** sp. nov. (Fig. 4)

- **Female**: Light brown, anteriorly broad, tapering behind, 135-140 μm long, 55 μm thick; rostrum 17 μm long, down curved; antapical seta 5 μm long. Shield 50 μm wide; 42 μm long; with a broad spiny lobe over rostral base; shield with admedian alone represented, admedian joined at the rear end of the shield. Dorsal tubercles at about 1/3 distance away from rear shield margin; 15 μm apart; dorsal seta 8 μm long, thin, pointing upward and forward. Foreleg 28 μm long; tibia 7 μm long, tibial seta 5 μm long; tarsus 5 μm long; claw 7 μm long, curved and tapering; featherclaw 6 rayed. Hindleg 25 μm long; tibia 6 μm long; claw 6 μm long, similar to foreclaw. Coxae broadly joined, first setiferous coxal tubercles absent, coxal area smooth. Abdomen with 25 broad smooth tergites and 65-70 microtubercular sternites. Lateral seta 15 μm long on ring 8; first ventral seta 25 μm long on ring 20; second ventral seta 8 μm long on ring 35; third ventral seta 20 μm long on ring 6 from behind; caudal seta 45 μm long, very thin; accessory seta absent. Female genitalia 20 μm wide and 9 μm long, cover-flap with 10 thin lines and basally with several scorings, genital seta 15 μm long.

- **Male**: Not known.

- **Types**: A holotype slide and five paratype slides all with females; collected on 8-7-1974 at University of Agricultural Sciences Campus, Bangalore (Collection No. 140), South India.

**Host**: *Bauhinia* sp. (Caesalpinioidea). Mites are under surface leaf vagrants.

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**Neotegonotus fastigatus** (Nalepa)

NEWKIRK and KEIFER (1971) placed the *Tegonotus fastigatus* Nalepa under the new genus *Neo­tegonotus* based on the unique enlargement of the first abdominal tergum. This species has not been recorded outside Europe, and this is the first record of this species from Indian region.

**Material examined**: Collected on 30.6.1974 at University of Agricultural Sciences, Bangalore on *Ficus bengalensis* Linn. (Moraceae). The mites found as vagrants under surface leaf (Collection No. 130).

**Neomesalox** new genus

Body elongate, dorsoventrally slightly flattened with three wax bearing lines; shield triangular with a thick lobe over rostrum, posterior corners of the shield expanded and overhanging partially on the lateral setae. Dorsal tubercles cylindrical, at shield margin, widely separated; dorsal setae diverging backwards. Shield with a clear pattern of lines. Rostrum small, pointing downwards, antapical seta prominent. Legs with all usual setae; featherclaw simple. Coxae with the first setiferous tubercles missing. Abdomen with broad tergites and sternites about equal in number, tergites with sparse microtubercles laterally; abdomen with a dorsal trough flanked by ridges on either side, fading away posteriorly at about 3/4 distance. Telosome with elongate microtubercles both dorsally and ventrally. Lateral seta in anterior position, just below the posterior corners of the shield in line with the anterior half of the genitalia, over prominent, laterally projecting, cylindrical tubercles. First ventral seta absent, second and third ventral setae present. Accessory seta absent; caudal tip bent upwards.

- **Types species**: *Neomesalox kallarensis* sp. nov.

This genus is differentiated from others by the prominent lateral setae; missing first setiferous
FIG. 4: *Neometacus bauhiniae* sp. nov.
coxal tubercles and first ventral seta, and the presence of the dorsal abdominal trough. This genus is classified under the family Eriophyidae, subfamily Phylocoptinae, allied to the genus Mesalox keifer (1962).

**Neomesalox kallarensis** sp. nov. (Fig. 5)

**Female**: 190-200 μm long, 60 μm wide, elongated, dorsoventrally flattened with 3 wax bearing lines. Rostrum 20 μm long projecting downwards, antapical seta 7 μm long. Shield 60 μm wide, 35 μm long, broadly triangular, with a thick lobe overhanging rostral base. Shield with median line represented at posterior half; admedians complete, wavy, forked at the anterior end; submedian complete running obliquely. Two cross lines joining the admedians through the median line, a cross line connecting admedians and submedians. Sides of shield clear. Posterior corners of shield, prominent and overhang near the lateral seta present on the third segment. Dorsal tubercles, cylindrical, 5 μm long, at the shield margin, 32 μm apart, pointing backwards and outwards, dorsal seta 14 μm long. Foreleg 30 μm long; tibia 8 μm long, tibial seta 5 μm long at basal half; tarsus 7 μm long; claw 5 μm long, knobbed; featherclaw simple, 4 rayed. Hindleg 25 μm long; tibia 6 μm long; claw 5 μm long, knobbed at tip; coxae with a clear sternal line; first setiferous coxal tubercles absent; coxal area clear. Abdomen with 30-32 equal number of broad tergites and sternites; tergites sparsely microtubercular; telosome with elongated microtubercles. Abdominal dorsum with a trough flanked by ridges on either side, fading away posteriorly at about 3/4th distance. Lateral seta 6 μm long on prominent elongate tubercle, on 3rd segment; first ventral seta absent; second ventral seta 8 μm long on ring 18; third ventral seta 14 μm long on ring 6 from behind; caudal seta 30 μm long; accessory seta absent; caudal tip bent upwards. Female genitalia close to coxae 20 μm wide; 12 μm long, coverflap without lines; genital seta 8 μm long.

**Male**: Not known.

**Types**: A holotype slide and 3 paratype slides all with females collected on 16-4-1975 at Kallar fruit farm; near river (Collection No. 168), Tamilnadu, South India.

**Host**: Unidentified bush with lanceolate leaves with serrate edges. Mites are under surface leaf vagrants; white cast skins seen on underside of the leaf.

**Paratetra albizziae** sp. nov. (Fig. 6)

This species resembles Paratetra murrayae Channabasavanna, 1966, but could be differentiated by the 7 rayed featherclaw, shield pattern and the granular coxal area.

**Female**: 200-215 μm long; 50 μm thick; rostrum 18 μm pointing downwards, antapical seta 5 μm long. Shield 40 μm wide; 30 μm long; with a blunt lobe over rostral base. Median represented as a short, posteriorly forking line in the anterior portion of shield; admedians curved; sides of shield granular. Dorsal tubercles cylindrical, 5 μm long at shield margin; 17 μm apart; dorsal seta 17 μm long pointing backward and outwards. Foreleg 25 μm long; tibia 7 μm long, tibial seta 5 μm long at basal 1/3, tarsus 6 μm long; claw 7 μm long; featherclaw 7 rayed. Hindleg 22 μm long; tibia 6 μm long; tarsus 5 μm long; claw 8 μm long. Coxae broadly joined; all three setiferous tubercles present; coxal area granular. Abdomen with about 35 tergites with elongate microtubercles on the lateral sides; about 65 sternites with dot like microtubercles; lateral seta 30 μm long on ring 10; first ventral seta 35 μm long on ring 25; second ventral seta 10 μm long on ring 40; third ventral seta 30 μm long on ring 6 from behind; caudal seta 130 μm long; accessory seta 5 μm long. Female genitalia 19 μm wide; 14 μm long. Coverflap with about 8 lines, genital seta 22 μm long.

**Male**: Not known.
Fig. 5: Neomesalox kallarensis sp. nov.
Fig. 6: *Paratetra albizziae* sp. nov.
Hosts: Albizzia lebbeck (Cesalpinioidea).
Mites found on the undersurface of leaflets which are slightly crinkled and chlorotic.

Paratetra integrifoliavagrants sp. nov. (Fig. 7)

This species differs from the type species Paratetra murrayae Channabasavanna, 1966, by the 4 rayed feather claw, and the granular sides of shield.

Female: 150 μm long; 50 μm thick; rostrum 18 μm long pointing downwards, antapical seta 7 μm long. Shield 40 μm wide; 40 μm long with a blunt lobe over rostral base; median absent; admedians faint, curved, with a crossline at about middle; joining anteriorly; sides of shield granular; dorsal tubercles at shield margin; 30 μm apart; dorsal seta 5 μm long. Foreleg 30 μm long; tibia 6 μm long; tibial seta 5 μm long; tarsus 6 μm long; claw 5 μm long, slightly curved and knobbed at tip; featherclaw 4 rayed. Hindleg 28 μm long, tibia 6 μm long; tarsus 6 μm long; claw 5 μm long. Coxae with all three setiferous tubercles; coxal area clear. Abdomen, with about 38 smooth tergites and 65 microtubercular sternites; lateral seta 20 μm long on ring 15; first ventral seta 45 μm long on ring 28; second ventral seta 20 μm long on ring 42; third ventral seta 20 μm long on ring 6 from behind; caudal seta 50 μm long; accessory seta not visible. Female genitalia close to coxal base; 20 μm wide; 15 μm long, coverflap with 8 faint lines and basal granulations; genital seta 7 μm long.

Male: 140 μm long; 50 μm thick; genitalia 14 μm wide; genital seta 7 μm long.

Types: A holotype slide with female and 5 paratype slides with male and females; collected on 4-2-74 at Palani Hills (Collection No. 84), Tamil Nadu, South India.

Host: Holoptelia integrifolia Planch. (Ulmaceae), mites are under surface leaf vagrants.

Phyllocoptruta odinae sp. nov. (Fig. 8)

This species resembles Phyllocoptruta morindae Keifer, 1977, by its 5 rayed featherclaw but differs by the shield pattern and the length of genital seta apart from other features.

Female: Yellowish, 200-210 μm long, 60 μm thick, rostrum 24 μm long, downcurved, antapical seta 9 μm long. Shield 60 μm wide and 45 μm long, triangular, with a clear pattern. Median line represented at the basal half and at anterior end with a break in the middle. Admedians wavy, forming cells along the anterior margin of the shield; sides of shield with fine stripes and granular. Dorsal tubercles 25 μm apart, a little away from shield margin, dorsal setae 4 μm long, upward and inward. Foreleg 30 μm long; tibia 7 μm long, tibial seta 5 μm at basal 1/3; tarsus 7 μm long; claw 6 μm long; feather claw 3 rayed. Hindleg 26 μm long; tibia 6 μm long; tarsus 7 μm long; claw 7 μm long slightly curved; coxae broadly joined, all three setiferous coxal tubercles present, coxal area with short strokes. Abdomen with broad tergites with faint elongate microtubercles, tergites 40: sternites 65 with dot like microtubercules (elongated in sides) in the middle of each ring. Last 10-15 sternites with microstriations. Lateral seta 65 μm long on ring 12; first ventral seta 90 μm long on ring 25; second ventral seta 50 μm long on ring 41; third ventral seta 52 μm long on ring 6 from behind. Caudal seta 100 μm long; accessory seta 4 μm long. Female genitalia 21 μm wide and 15 μm long; coverflap with 12 lines; genital seta 30 μm long.

Male: Not studied.

Types: A holotype slide and seven paratype slides all with females, collected at Karuvampalamay, Tiruppur on 13.8.74 (Collection No. 106), South India.
Fig. 7: Paratetra integrifolivagrana sp. nov.
FIG. 8: *Phyllocoptruta odinae* sp. nov.
Host: *Odina wodiars* Roxb. (Anacardiaceae). The mites are found on both sides of the leaf as vagrants, causing slight rusting. A large number of white cast skins are seen as streaks.

**Proneotegonotus** new genus

This genus is very characteristic with the enlarged first tergite; absence of first and second ventral setae on the abdomen, the absence of tibial setae in the foreleg and the absence of the patellar setae in the hindlegs.

Vagrant, rust mites, fusiform with a broad cephalothorax, dorsoventrally a little flattened, shield semicircular with a thick lobe over the rostral base; dorsal tubercles away from shield margin, dorsal setae projecting upward and caudad; sides and the base of shield heavily granular in the type; rostrum moderately large, projecting vertically down; two spines at the rostral base; foreleg with the tibial seta absent, other normal setae present; hindleg with the patellar seta missing; featherclaw simple. Abdomen with the first tergite very broad with fine scorings similar to that on shield; rest of the tergites broad smooth, each tergite covering 2 or 3 sternites, sternites finely micromicrotubercular with elongated microtubercles; first and second ventral setae absent; accessory seta absent; coxae with all three setiferous tubercles; female genitalia a little away from coxal base, coverflap with longitudinal scoring, internal apodeme of normal length.

**Type species:** *Proneotegonotus antiquorae* sp. nov.

**Proneotegonotus antiquorae** sp. nov. (Fig. 9)

**Female:** Light brown to dirty white, older ones dark brown, fusiform with a broad anterior part, dorsoventrally flattened, 140-159 \(\mu m\) long, 60 \(\mu m\) broad, rostrum 15 \(\mu m\) long, bent down vertically, antapical seta 10 \(\mu m\) long, very thick; shield 60 \(\mu m\) wide and 50 \(\mu m\) long, with a broad lobe overhanging the rostrum. Shield with a pattern of faint longitudinal lines; the admedian and the first submedian clear. The whole shield with a sort of wrinkled longitudinal pattern without clear cut lines. Dorsal tubercles away from shield margin, projecting inward and 20 \(\mu m\) apart, dorsal setae project up and 3 \(\mu m\) long. First abdominal tergite very broad and closely approximated to the shield margin with a pattern similar to that of shield. Foreleg 30 \(\mu m\) long; tibia 7 \(\mu m\) long, tibial seta absent; tarsus 5 \(\mu m\) long; claw 5 \(\mu m\) long, curved and knobbed at tip, featherclaw 5 rayed. Hindleg 25 \(\mu m\) long, tibia 7 \(\mu m\) long; tarsus 5 \(\mu m\) long; claw 5 \(\mu m\) long; patellar seta missing. Coxae broadly joined; first setiferous coxal tubercles at mid point of forecoxae, second setiferous tubercles at base of forecoxae, third a little below in the hind coxae, coxal area clear. Abdomen with 25 tergites and 45 sternites. First tergite very broad and closely joined with the shield margin giving an appearance of a part of the shield and with patterns similar to shield. Rest of the tergites smooth without microtubercles. Sternites narrow with faint elongated microtubercles placed on the posterior edge of each segment. Lateral seta 20 \(\mu m\) long on ring 8; first and second ventral seta absent; third ventral seta 12 \(\mu m\) long on ring 6 from behind; caudal seta 40 \(\mu m\) long; accessory seta absent. Female genitalia 22 \(\mu m\) wide, and 16 \(\mu m\) long. Coverflap with two rows of scorings, anterior row with faint and numerous scorings, posterior row with thick lines; genital seta 10 \(\mu m\) long.

**Male:** 140 \(\mu m\) long, 57 \(\mu m\) thick, genitalia 17 \(\mu m\) wide, genital seta 7 \(\mu m\) long, very common, pale in colour.

**Types:** A holotype slide with female and six paratype slides with males and females, collected on 3-10-1974 at Karamadai, Coimbatore District, Tamil Nadu (Collection No. 149).

Host: Mites cause rusting of plant parts. The plant being a Xerophyte, there is no true leaves present, the stem and plant parts green. Mites feed on tender stem portions and cause rusting.
FIG. 9: Proneoteotonotus antiquae sp. nov.
Tegolophus gmelinae sp. nov. (Fig. 10)

This species is near Tegolophus pfafiae Keifer, 1963, but differs by the clear shield area, 7 rayed featherclaw, and clear coxal area.

- **Female**: 160-170 μm long, 50 μm thick, rostrum 20 μm long, pointing downwards, antapical setae 2 μm long. Shield 30 μm wide, 28 μm long, overhanging the rostral base; shield surface smooth without any pattern. Dorsal tubercles towards the side, 25 μm apart at rear shield margin, dorsal seta 8 μm long, pointing outward and backward. Foreleg 27 μm long; tibia 7 μm long; tibial seta 4 μm long at base; tarsus 6 μm long; claw 7 μm long curved and tapering; featherclaw 7 rayed; hindleg 25 μm long; tibia 7 μm long; claw 5 μm long. Coxae broadly joined, all three setiferous tubercles present; coxal area smooth. Abdomen with about 60 smooth tergites; 70 finely microtubercular sternites. Tergites forming a middorsal longitudinal ridge and weaker lateral ridges extending caudad. Lateral seta 17 μm long on ring 11; first ventral seta 27 μm long on ring 23; second ventral seta 25 μm long on ring 40; third ventral seta 20 μm long on ring 5 from behind; caudal seta 40 μm long; accessory seta 4 μm long, very thin. Female genitalia a little away from coxal base, 18 μm wide and 15 μm long, coverflap with 8-10 lines, genital seta 25 μm long.

- **Male**: Not known.

- **Type**: A holotype slide and 8 paratype slides all with females, collected on 7-7-1974 at UAS campus, Bangalore (Collection No. 139), South India.

**Host**: Gmelina asiatica Linn. (Verbenaceae) — mites are brown, found on tender leaves as vagrants.

Tegonotus coimbatorensis sp. nov. (Fig. 11)

This species resembles Tegonotus mangiferae (Keifer, 1946) but differs by the 4 rayed featherclaw, shield pattern and the scoring on the genital coverflap.

- **Female**: 180-190 μm long; 65 μm thick. Rostrum 20 μm long, downcurved, antapical seta 10 μm long, thick and prominent. Shield 65 μm wide, 50 μm long, projecting over rostrum; median absent; admedian complete, wavy and converge at both ends; sides of the shield granular, shield area with fine, faint irregular scoring. Dorsal tubercles prominent, near shield margin, 25 μm apart, dorsal seta 6 μm long, pointing upwards. Foreleg 28 μm long; tibia 8 μm long, curved with a prominent knob at tip; featherclaw 4 rayed. Hindleg 25 μm long, tibia 7 μm long; tarsus 5 μm long; claw 5 μm long. Coxae broadly joined, all three setiferous tubercles present. Coxal area with prominent scoring. Abdomen with about 30 broad smooth tergites and about 60 finely microtubercular sternites; lateral seta 20 μm long on ring 16; first ventral seta 40 μm long on ring 28; second ventral seta 16 μm long, thick, on ring 43; third ventral seta 22 μm long on ring 5 from behind; caudal seta 60 μm long; accessory seta not visible. Genitalia 20 μm wide; 15 μm long; away from coxal base; coverflap with two rows of scoring; anterior row with numerous lines, distally with about 10-12 lines, coverflap with a clear segmentation between upper and lower rows; genital seta 7 μm long.

- **Male**: 155 μm long; 60 μm thick; genitalia 15 μm wide; genital seta 6 μm long.

- **Types**: A holotype slide with female and 10 paratype slides with males and females, collected on 5-2-1974 at Tamil Nadu Agricultural University Campus (Collection No. 102), Coimbatore, India.

**Host**: Small tree with simple opposite leaves with serrate margin. Unidentified due to non
Fig. 10: *Tegolophus gmelinae* sp. nov.
Fig. 11: *Tegonotus coimbatorensis* sp. nov.
flowering of the tree. Mites with 5 wax bearing lines on the abdomen and found as under surface leaf vagrants.

**Other material examined**: Collected on 23-6-1974 at UAS campus Bangalore on Holoptelia sp.? — mites found on the lower side of leaves along veins, causing discolouration and browning; white cast skins seen (Collection No. 125).

**Tegonotus convolvuli** (Channabasavanna, 1966)

*Material examined*:
1. Collected on 6-11-1972 at Coimbatore on Ipomoea palmata (Convolvulaceae) as undersurface leaf vagrants causing rusting (Collection No. 21).
2. Collected on 22-7-1974 at Coimbatore on Ipomoea batatas (Convolvulaceae) sweet potato — as under leaf vagrants causing rusting (Collection No. 91).
3. Collected on 22-4-1975 at Coimbatore on Ipomoea sepiaria (Convolvulaceae) as undersurface leaf vagrants, causing rusting (Collection No. 172).

**Tetra tephrosiae** sp. nov. (Fig. 12)

This species resembles *Tetra calamorphae* Keifer, 1971, by its 7 rayed featherclaw but differs by the shield pattern, less granular coxal area and the long genital seta.

**Female**: Slightly flattened dorsoventrally, spindle shaped, 145-150 \( \mu m \) long, 50 \( \mu m \) broad. Rosrurn 20 \( \mu m \) long, pointing downwards, antapical seta 7 \( \mu m \) long; shield 45 \( \mu m \) wide and 33 \( \mu m \) long, triangular with the anterior lobe overhanging the rostrum, median line obscure, admedians complete, wavy, submedian diagonal arising at rear corner of shield and joining with the admedians in the anterior 1/3; dorsal tubercles at shield margin, 25 \( \mu m \) apart, dorsal setae 12 \( \mu m \) long pointing backward and outward. Foreleg 30 \( \mu m \) long; with all usual setae, tibia 9 \( \mu m \) long; tibial seta 5 \( \mu m \) long at basal 1/3; tarsus 6 \( \mu m \) long; claw 7 \( \mu m \) long, slightly curved and tapering; featherclaw 7 rayed; hindleg 25 \( \mu m \) long; tibia 7 \( \mu m \) long; claw 7 \( \mu m \) long. Coxae with a clear sternal line, broadly joined, all three setiferous tubercles present; coxal area with fine markings. Abdomen with about 36 broad, smooth, non tubercular tergites, and about 60 narrow microtubercular sternites; tergites forming a broad dorsal longitudinal trough flanked on either side by a ridge; lateral seta 27 \( \mu m \) long on ring 10; first ventral seta 55 \( \mu m \) long on ring 23; second ventral seta 15 \( \mu m \) long on ring 38; third ventral seta 23 \( \mu m \) long on ring 5 from behind; caudal seta 45 \( \mu m \) long; accessory seta 2 \( \mu m \) long. Female genitalia a little away from coxae, 20 \( \mu m \) wide and 12 \( \mu m \) long, coverflap with 10-12 lines, genital seta 38 \( \mu m \) long.

**Male**: Not known.

**Types**: A holotype slide and 2 paratype slides all with females collected on 29.6.1974 at UAS campus, Bangalore, South India (Collection No. 129).

**Host**: *Tephrosia purpuria* Pers. (Leguminosae). Mites are brown, found as undersurface leaf vagrants.

**Vasates dhodabettaensis** sp. nov. (Fig. 13)

This species is unique with its anterior shield lobe projecting over rostral base; the 8 rayed feather claw with numerous branches, the elongated dorsal tubercles and the long genital seta.

**Female**: 170-175 \( \mu m \) long; 45 \( \mu m \) thick. Rostrum 20 \( \mu m \) long, bent evenly downwards, antapical seta 7 \( \mu m \) long. Shield 40 \( \mu m \) wide; 30 \( \mu m \) long with a pointed lobe overhanging the rostrum. Dorsal tubercles cylindrical, 6 \( \mu m \) long, at shield margin; 22 \( \mu m \) apart. Dorsal setae 14 \( \mu m \) thick at base, pointing backwards. Median line absent; admedians wavy, almost complete; first and second submedians represented by arched lines on each side. Foreleg 25 \( \mu m \) long; tibia
FIG. 12: *Tetra* tephosiae sp. nov.
Vasates <i>dhodabetoinensis</i> sp. nov.

Fig. 13: <i>Vasates dhodabetoinensis</i> sp. nov.
6 μm long; tibial seta 5 μm long at basal 1/3; tarsus 5 μm long, claw 7 μm long, curved; feather-claw 8 rayed with a bushy appearance. Hindleg 23 μm long; tibia 5 μm long; claw 8 μm long, curved. Coxae with all three setiferous tubercles; first coxal tubercle at anterior edge of the coxae; coxal area with fine scorings. Abdomen with about 36 smooth broad tergites; 68 microtubercular sternites; microtubercles larger in the sides. Lateral seta 15 μm long on ring 12; first ventral seta 35 μm long on ring 24; second ventral seta 12 μm long on ring 42; third ventral seta 17 μm long on ring 6 from behind; caudal seta 50 μm long; accessory seta 2 μm long. Female genitalia 17 μm wide; 10 μm long, coverflap with 10 lines, genital seta 25 μm long.

■ Male 155 μm long; 40 μm thick; genitalia 12 μm wide; genital seta 20 μm long.

■ Types: A holotype slide with female and five paratype slides with males and females collected on 5-4-1977 at Nilgiris, near Dhodebetta (2250 M, MSL) (Collection No. 258).

Host: Alnus sp., mites are under surface leaf, vagrants on the veins.

REFERENCES


Paru en février 1983.