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Prostigmatic Mites from the Experimental Farm in Etzdorf/Saalkreis, G. D. R.

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With 73 Figures

Abstract: A collection of prostigmatic mites included the following species, which are described and illustrated. Eupodidae: *Eupodes ereynetoides* n. sp.; *Eupodes sp.*, near *ereynetoides*; *Eupodes voxencollinus* Sig Thor; *Cocceupodes stellatus* n. sp.; *Cocceupodes trisetatus* n. sp.; *Cocceupodes mollicellus* (C. L. Koch); *Claveupodes delicatus* n. gen. et n. sp.. Rhagidiidae: *Coccorhagidia evansi* n. sp.; *Coccorhagidia clavifrons* (Canestrini); *Rhagidia mucronata* Willmann. Eupalopsellidae: *Eupalopsellus trudis* Summers.

Zusammenfassung

In den Jahren 1971 bis 1975 führte J. PRASSE Untersuchungen an der Bodenfauna landwirtschaftlich genutzter Böden des Versuchsgutes Etzdorf/Saalkreis der Martin-Luther-Universität Halle durch. Die vorliegende Arbeit beschreibt die hierbei gefundenen prostigmaten Milben, die für die Wissenschaft neu sind oder erstmalig für das Gebiet der DDR nachgewiesen werden. Die Holotypen der neuen Arten werden in der Sammlung des Zoologischen Institutes der Martin-Luther-Universität Halle-Wittenberg, Paratypen in den Sammlungen der Autoren und des Staatlichen Museums für Naturkunde Görlitz aufbewahrt.

For researches on the mite-fauna of agriculturally exploited soils during the vegetation-months of the years 1971 — 1975 from the experimental farm Etzdorf/Saalkreis of the Martin-Luther-University there had been taken mite-material from different soil depths in regular intervals of time. The vegetation of this field consisted of winter wheat (1971), maize (1972), summer barley (1973), winter wheat (1974) and oats (1975).

In this paper such prostigmatic species are predominantly specified, which are new for science and the proof of which is occuring for the first time for G. D. R., respectively. The descriptions of the species are supplemented by some autecology information.

The holotypes of new species are deposited in the Department of Zoology, Martin-Luther-Universität Halle-Wittenberg, paratypes in the collections of the authors and in the „Staatliches Museum für Naturkunde, Görlitz (DDR)". All the specimens were collected by J. Prasse.

Dedicated to Mr. Prof. Dr. J. O. Hüsing to finishing of his 65th year of life

Family EUPODIDAE Koch, 1842

Genus *Eupodes* C. L. Koch, 1835

Eupodes ereynetoides n. sp. (Figs. 1–6)

Female. Average length of six specimens, 250 μ (200–300. The type specimen is 265 μ. Shoulders prominent, sulcus between pro and metapodosoma prominent. Epivertex preterminal, with a pair of small setae. Trochanters, 1–1–1–1; coxae, 3–1–4–3. Genital setae, 7 + 7, of wich one pair is more lateral; paragenital setae, 4 + 4. Two pairs of internal genital knobs and several pairs of internal genital setae on papillae. Average lengths of dorsal setae in microns are: vi – 5; ve – 13; scapulars – 14; trichobothria – 60; hi – 10; he – 20; d_1 – 14; d_2 – 14; li – 50; le – 17; si – 31; se – 12. The internal lumbar setae are slender, resembling trichobothria.

On the ventral side, the coxal and genital setae are slightly clavate. The setae of coxa I measure as follows: outer, 5 μ; middle 15 μ; inner 12 μ. Anal pore ventral; the three pairs of anal setae measure: a_1 – 9 μ, a_2 – 10 μ; a_3 – 30 μ. The apical setae of the hypostome are each 10 μ long.

Legs short; leg I about equal to the w i d t h of the body at its widest point. Tarsi I and II each have a long dorsomedian, longitudinal, rhagidial organ, which appears to be unbroken with a basal and medial attachment point. If this is actually the way it is unique. A stellate seta subtends the r. o. Tibia I has a dorsoapical r. o. with an apical spine, and a small dorso-basal solenidion. Tibia II has a small dorso-apical sensory structure. There are apparently no other sensory setae on any of the leg segments.

Tritonymph. Slide 129 has one nympha III, apparently of this species. It has the same general facies and the same number and placement of sensory setae on legs I and II as the female. Lenght, 175 μ. Trochanters, 1–1–1–1; coxa 3–1–4–3. Genital setae, 3 + 3; paragenitals, 4 + 4. Lengths of dorsal setae in microns are: vi – 5; ve – 8; scapulars – 10; trichobothria – 40; hi – 6; he – 10; d_1 – 8; d_2 – 8; li – 40; le – 12; se – 10.

Type – There are two females on slide No. 101. The one without eggs is chosen as type.

Location and Biology – sporadic, during the summer-months, in 0 to 10 cm soil depth.

Remarks. This species fits with that group of *Eupodes* in which the dorsal setae are quite short, i. e, not half as long as the distance between successive

setae It differs from all other species of *Eupodes* by the presence of a posterior pair of trichobothria like setae, somewhat like *Ereynetes*, hence the specific epithet. However, it is the internal lumbar setae that are trichobothria-like in this species, whereas in *Ereynetes*, it is the external lumbars that are thusly modified.

It may be identified as a Eupodidae by the swollen femore IV, rhagidial organs on Tarsi I and II, and the epivertical lobe with a pair of setae. The short legs I are rather atypical for the genus.

Eupodes sp. (Figs. 7–11)

A unique female specimen share with *Eupodes ereynetoides* the small body size, short dorsal setae, and modified internal lumbar setae. It is described but not given a specific epithet because it is an incomplete specimen, lacking legs I. It differs from *E. ereynetoides* in relatively longer body setae, one less pair of genital setae and the terminal rather than the subterminal position of the epivertex. L. 230 μ, legs I, missing beyond the coxae. Trochanters, 1–1–1–1; coxae, 3–1–4–3. Genital setae, 6 + 6 (there is no outer pair of genital setae as there is in *E. ereynetoides);* paragenital setae, 4 + 5; two pairs of genital knobs and several pairs of internal genital setae on papillae. Anal pore ventral.

Suture between pro and metapodosoma well developed. Epivertical lobe terminal. Internal lumbar setae long, hairlike, resembling trichobothria.

Lengths of dorsal setae in microns: vi – 17; ve – 17; scapulars – 15; trichobothria – 60; hi – 18; he – ?; d_1 – 22; d_2 – 23; li – 67; le –20; si – 40; se – 15.

On the venter the coxal and genital setae tend toward clavate. On coxa I the setal lengths are: outer – 10; medial – 20; inner – 15. Lengths of anal setae are: a_1 – 8; a_2 – 12; a_3 – 37.

Legs. (Figs. 9, 10). Legs I missing. Tarsus II with apparently only one rhagidial organ. Tibia II with a dorsoapical r. o. and a dorsobasal solenidion. Femur IV distinctly swollen.

A tritonymph, apparently of this species (slide 151), has the following data: length 200 μ; terminal epivertex; genital setae, 3 + 3; paragenital, 4 +4. Trochanters, 1–1–1–1; coxae, 3–1–4–3. Tarsus I with two rhagidial organs in tandem, subtended by a stellate seta; tibia I with a dorsoanterior r. o. and anterior spine, plus a dorsobasal solenindion; genu I with a dorsobasal solenidion. Tarsus II with apparently only 1 rhagidial organ, obliquely placed; tibia II with a dorsoanterior r. o. and a dorsobasal solenidion.

A single protonymph probably conspecific with the foregoing female, is 150 μ long. Trochanters,0–0–1–0; coxae, 3–1–3–0; genital setae, 1 + 1; paragenitals, 0 + 0; genital knobs, 1 pair. The dorsal setae are relatively short; the internal lumbars are trichobothria-like; the epivertical lobe is terminal. Tarsus I has one r. o. subtended by a stellate seta; tibia I has a dorsoapical spine and r. o., plus a dorsobasal solenidion; genu I has a dorsobasal solenidion.

Location and Biology – in spring very sporadic in the upper soil layer.

Eupodes voxencollinus Sig Thor, 1934 (Figs. 12–24)

Synonymy: *Eupodes acuminatus* Willmann, 1952, p. 159; New synonymy

Eupodes alaskanensis Strandtmann, 1971, p. 79; New synonymy

Female (Figs 12–16). Lenght 425 μ (340–500). Leg I about 1/4 to 1/3 longer than body. Trochanters, 1–1–1–1; coxae, 3–1–4–3. Genital setae, 6 + 6, of which one pair is more lateral; paragenital setae, 7 + 7, sometimes 6 + 7 or 6 + 6. Anal pore subterminal, anal setae, 3 + 3 of which a_2 is about twice as long as a_1 and a_3 twice as long as a_2. The coxal and genital setae are slender clavate. (Fig. 13a).

The dorsal setae are long, reaching or passing the succeeding setae. The lumbar and sacral setae are similar to the dorsals except that the externals are shorter. The trichobothria are shorter than the internal humeral setae (trichobothria, 70 μ; hi 90 μ). The dorsum is minutely striated and ciliated, the epivertical lobe is smooth.

Legs are slender, except IV which has the typically swollen femur. Femora III and IV are divided, femur I partially divided. Tarsus I, which is longer than tibia I (Figs. 14–15), has two tandem rhagidial organs of subequal length subtended by a stellate seta which is small with only four or five rays. Tibia I has a small slightly ciliated knob-like organ at the dorsal apex and a small solenidion dorsobasally; plus 17 slender, ciliated setae. Tarsus II (Fig. 16) also has two tandem r. o. 's but they are more medially placed and the basal r. o. is about 2x as long as the apical. A small spine subtends the basal r. o. Tibia II has a small, dorsoapical r. o. and a dorsobasal solenidion. Tibia III and IV each have a small dorsobasal solenidion, which is sometimes difficult to find. Tarsus III has two dorsobasal setae.

Male. (Fig. 13a). Length 385 (370–400); leg I 430 μ. Genital setae, 6 + 6; paragenitals, 7 + 7. Chaetotaxy of legs and body, as in the female. The stem of the sperm sac is finely cross striated. It arises at the center of the genital pore, proceeds forward to the anterior margin of the genital covers and terminates in a broadly oval to spherical, finely reticulate sac.

Nympha III. (Figs. 17–21). Length, 315 μ (310–320); Leg I 290–300. Trochanters, 1–1–1–1; coxae, 3–1–4–3. Genital setae, 3 + 3; paragenital setae, 5 + 5, occasionally, 4 + 4. Anals, 3 + 3, of which a_1 and a_2 are subequal and shorter than a_3. The body setae are similar to those of the adult, but shorter. The ventral setae are less obviously clavate. A faint double line, which could be a tube or a ridge, may be found on each side of the propodonotum, running from the lateral margin of the epivertical lobe to the later posterior margin of the propodonotum. We do not know its purpose or its function. It is present in the other nymphal stadia also. In this, and in all the other nymphal stadia, the epivertex is pointed, or acuminate, anteriorly.

Tarsus and Tibia I (Fig. 10) have the r. o. and other sensory setae as in the aduld but there are fewer setae. Tarsus I has 24 setae whereas the adult has 28 to 30. Tarsus and tibia II (Fig. 21) also have the same sensory organs as in the ♀ but fewer setae. Tibia III and IV each have a small dorsobasal solenidion.

Nympha II. (Fig. 22). Legth 225 μ (220–240); width 135, leg I, ca. 200. Trochantal setae, 1–1–1–0; coxae, 3–1–4–2, genital setae, 2 + 2; paragenital setae, 2 + 2; anals 3 + 3. Trichobothria relatively long, nearly 2x as long as the h. i. Epivertical lobe pointed. Tarsus and tibia I (Fig. 22) with the same sensory setae as the adult except that the apical r. o. of the tarsus is shorter, only 1/2 as long as the basal. Only 20 setae grace this tarsal segment. Tarsus II has two dorsomedial r. o. subtendet by a spine. Tibia II has the dorsoapical r. o. and the dorsobasal solenidion.

Nympha I. (Figs. 23–24). Length 220 μ, leg I ca. 150 μ. Trochanters, 0–0–1–0; coxae, 3–1–3–0. Genital setae, 1 + 1; paragenital setae, 0 + 0; genital knobs, one pair. Tarsus has only one r. o. subtended by a weakly rayed stellate seta. There are 18 setae and the tarsal claws are quite small. Tibia I has the slightly fuzzy, knob-like tibial organ found on all other stages. All the tibiae have a dorsobasal solenidion. The apical segment of the pedipalp (Fig. 24) bears nine setae as shown, plus a laterobasal sense organ. This is true also for all the other nymphal stages as well as the male and female.

The approximate average lengths of the dorsal setae are: F e m a l e . vi – 30; ve – 45; scapulars – 40; trichobothria – 70; hi – 90; he – 70; d_1 – 95; d_2 – 95; li – 80; le – 58; si – 75; se – 55. M a l e . vi – 22; ve – 34; scapulars – 33; trichobothria – 60; hi – 75; he – 55; d_1 – 75; d_2 – 75; li – 72; le – 43; si – 70; se – 50.

Specimes examined: two males, ten females, three tritonymphs, two deutonymphs, one protonymph.

Location and Biology – regular existence, predominant in summer and in autumn in high density of population, favoured soil depth 0 to 5 cm.

Discussion. The nymphal and adult stages here described are believed to be conspecific because of similarities in dorsal chaetotaxy and (especially) in the sensory setae of legs I. In all stages the dorsal setae are relatively long and the lumbar and sacral setae are similar to dorsals 1 and 2. The so-called stellate seta of tarsus I, which is multirayed in most eupodoids, is in this species only weakly 2 or 3 branched in all stages. The anterior dorsal organ of tibia I is a minutely ciliated knob; in other species it appears to be definitely smooth.

If we assume that Willmann's species *Eupodes acuminatus* (1952) is a nymph, which I believe to be the case, and if we further assume that only the nymphs of *voxencollinus* have an acuminate epivertex, which indeed seems to be the case, then it would follow that *acuminatus* Willmann 1952 would be a junior synonym of *voxencollinus* Sig Thor, 1934. Willmann's statement that there is an extra pair of setae in the humeral row (of *acuminatus*) can be dismissed as either an anomaly or an observational error.

The great similarity of the specimens before us to that of *Eupodes alaskanensis* Strandtmann 1971 prompted us to reexamine the type series of *E. alaskanensis*. To my great chagrin (RWS), the stellate seta of tarsus I and the tibial organ of tibia I are not as illustrated in Strandtmann 1971, Figs. 1a and 1h but are in fact exactly as depicted here in figs. 14–23. Also the epivertical lobe of the nymphs of *E. alaskanensis* from Alaska and Canada are in fact pointed, and not smoothly rounded as depicted by Strandtmann (ibid).

Hence, since no real differences seem to exist between the German and the Alaskan forms they are assumed to be conspecific and *E. alaskanensis* Strandtmann, also becomes a junior synonym of *voxencollinus* Sig Thor.

In Thor and Willmann (1941 : 30) the length of *E. voxencollinus* is given as 300–340 μ, which is a bit smaller than the range of our specimens (340-500). But all other characters mentioned, including lengths of setae, number of genital and paragenital setae, relative length of leg I, and size of male sperm sac, agree very closely with our material and wa feel confident it is correctly named.

Genus *Cocceupodes* Sig Thor, 1934

Cocceupodes stellatus n. sp. (Figs. 25–36)

Description of adult. 280–350 μ long. Capitate epivertical setae of moderate length. No tranverse body suture. Legs I about as long as body; trochantal setae 1–1–1–1, subequal; coxae, 3–1–3–3; genital setae, 6 + 6; paragenital setae, 4 + 4; several internal setae on papillae; genital knobs, 2 + 2. Anal pore ventral, with two pairs of anal setae, the anterior pair about 1/4 length of the posterior pair. All leg and body setae slender, closely feathered.

Legs slender, with I and IV about as long as body, II and III shorter and equal. Femora I, III, and IV divided, femora IV enlarged. Tarsus I (figs. 27–30) with two rhagidial organs (r. o.) tandem, apical, the basal longer than the apical. The stellata seta is on the outer lateral margin at about the middle of the segment, remote from the r. o., which is an unusual location for the stellate seta. Tibia I with two apical r. o.'s, tandem, in separate fields; a small spine at the anterior end of the apical r. o. Tarsus II(fig. 31) with three long, irregularly oblique r. o.'s covering over 1/2 of the dorsal side of the segment. Tibia II with two small r. o.'s, one apical, one near base. Tibia III and IV each with a small rhagidial organ dorsobasally. There are apperently no solenidia on any leg segment.

Female. L. 320 (270–350) μ; Leg I 290 ca μ. With numerous internal genital setae on papillae. Of the seven females we saw, three contained one egg; one contained two eggs. Ventral setae not tending toward clavate. Dorsal setae moderately short. Lengths of the setae are: vi – 22; ve – 22; sc – 35; tr – 70; hi – 12; he – 55; d_1 – 30; d_2 – 28; li – 40; le – 27; si – 45; se – 18.

Male. (Figs. 25, 26). Nine males were available for study. They averaged 330 μ long (280–350); Leg I averaged 310 μ. The type (slide 16) measured L 340, w. 190, Leg I 340 μ. In all nine specimens the sperm sac is relatively small, reaching about to the level of the first pair of paragenital setae. It appears to be coarsely pubescent. The approximate lengths of the dorsal setae are: vi – 25; ve – 24; scapulars – 35; trichobothria – 70; hi – 12; he – 52; d_1 – 22;d_2 – 23; li – 36; le – 25; si – 42; se – 16. The lengths of the anal setae are: a_1 – 11; a_2 – 27.

Nympha III. (Figs. 33–36). Four tritonymphs were available for study. L. 310 μ (270–330). Trochanters, 1–1–1–1; coxae, 3–1–3–3; genital setae, 3 + 3; paragenitals, 4 + 4 (3 + 4 on one specimen). The rhagidial organs and the midlateral stellate seta are as in the adult. The length of the dorsal propodosomal setae are: vi – 20; ve – 16; scapulars – 20; trichobothria – 55.

Nympha II. One deutonymph, on slide No. 15, was available. L. 225; w. 130; Leg I 150 ca. Trochanters, 0–0–1–0; coxae, 3–1–3–2; genital setae, 2 + 2; paragenitals, 2 + 2; two pairs of genital knobs. Tarsus I has two rhagidial organs and a mid-lateral stellate seta as in the adults. There are 17 setae on this segment. Tibia I has two rhagidial organs and an apical knob-like seta. It has seven setae. Genu I has four setae. Tarsus II apparently has two rhagidial organs. The trichobothria measure 50 μ.

Nympha I. Two protonymphs were available, slides 15 and 17. They measured in length 190 μ and 180 μ, respectively. Trochantal setae, 0–0–0–0; coxal setae, 3–1–3–0. Genital setae, 1 + 1; paragenitals, 0 + 0; genital knobs, 1 + 1; anal setae, 2 + 2. Tarsus I has two rhagidial organs and the mid-lateral stellate seta. Tibia I has two rhagidial organs and one blunt spine. Tibia II with apparently two r. o.'s. The capitate v. i. setae are 13 μ long, the trichobothria are 35 μ. There is no dorsal suture, and no epivertical suture. The anal pore is large and ventral.

Described from six females, nine males, four tritonymphs, one deutonymph, and two protonymphs.

Selected as the type specimen is the male on slide No. 16.

Location and Biology – regular existence with slight dominance, winter wheat is favoured.

Remarks: This species is similar to *Cocceupodes communis* Shiba in having capitate i. v. setae combined with six pairs of genital setae but differs from *communis* in the unusual position of the stellate seta, and three rather than two rhagidial organs on tarsus II.

The name *stellatus* is chosen to emphasize the unusual position of the stellate seta of Leg I.

Cocceupodes trisetatus n. sp. (Figs. 37–41)

Female. Length 250 (240–270); leg I, 240 μ. Trochanters, 1–1–1–1, the setae of I and II shorter than III and IV; coxae, 3–1–3–3; genital setae, 3 + 3; paragenitals, 3 + 3. There are several pairs of internal genital setae on papillae. The genital covers are transversely striated. Anal pore ventral; anal setae, two pairs, the anterior pair about 1/3 as long as the posterior pair. Dorsal side (Fig. 37). No dorsal, transverse sulcus. The internal vertical setae (v. i.) filiform, approximately 2x as long as the scapulars. External humerals (h. e.) longer than the internal humerals (h. i.) by about 4x. Setae h. i., d_1 and d_2 short, less than 1/2 as long as intersetal distances. Ventral setae not noticeably clavate.

Legs. (Figs. 39–40). Leg I about as long as the body, leg IV shorter than body with the femur typically swollen. Tarsus I with two r. o.'s lying tandem, the basal more than 2x as long as the apical r. o. A stellate seta subtends the r. o.'s. Tibia I longer than the tarsus; with two dorsoapical, slender rhagidial organs; staggered. Tarsus II with three r. o.'s, in separate fields, the middle r. o. lateral, all parallel to the long axis of the leg. Tibia II shorter than tarsus, with two r. o.'s, one apical, one basal. Apparently no other sensory setae. Gnathasoma: apical segment of palpus about 1/2 as long as the preceeding

segment, with apparently nine setae. Hypostome with the anterior setae heavier than the lateral posterior pair.

Protonymph. A single nympha I, apparently of this species, has the following data: Length 130 μ; leg I 120 μ; genital setae 1 + 1; paragenital setae, 0 + 0; trochantal setae, 0–0–0–0; coxal setae, 3–1–3–0, tarsus I with one r. o. subtended by a stellate seta, tibia I with an apical and a medial r. o., tarsus II with one r. o., tibia II with an apical and a basal r. o. The epivertical lobe is distinct. The lengths of the dorsal setae are: vi – 18; ve – 5; sc – 8; trichobothria –48; hi - 5; he – 20; d_1 – 7; d_2 – 10; li – 18; le – 10; si – 20; se – 7. (The specimen is on slide No. 144).

Holotype: Female, slide 112. The specimen lacks one leg I, and both internal lumbar setae.

Location and Biology – very sporadic in April and May under winter wheat, 0 – 10 cm in depth.

Diskussion: This new species differs from all previously described forms by having only three pairs of genital and paragenital setae in the adult stage. Other species have four more pairs. Otherwise, *trisetatus* is similar to *C. paradoxus* Weis Fogh, 1948 in its small size and relatively short dorsal setae. *C. paradoxus*, from Denmark, has six pairs of genital setae and four pairs of paragenital setae.

Cocceupodes mollicellus (C. L. Koch, 1838) (Figs. 69–73)

Synonymy: *Eupodes clavifrons* R. Canestrini, 1886 [= *Cocceupodes clavifrons* (R. Canestrini) Sig Thor, 1934; vide Haarløv, 1957:26]

Cocceupodes curviclava Sig Thor, 1934; New synonymy
Cocceupodes australis Strandtmann et Tilbrook, 1968; New synonymy

Female. Length 285 μ, Leg I, 310 μ. Genital setae, 4 + 4; paragenitals, 4 + 4. Trochanters, 1–1–1–1; coxae, 3–1–3–3. Tarsus I with two rather long, subequal rhagidial organs, one behind the other, with a stellata seta at the proximal end of the basal r. o. Tibia I with a dorsoapical r. o., and a second one a little farther back. Tarsus II with three r. o.'s, tandem to each other. Tibia II with a small dorsoapical r. o. and a similar dorsobasal r. o. Apparently no other sensorysetae on legs. No sulcus between pro- and metapodosoma; epivertical lobe distinct, smoothly rounded. Dorsal setae of medium length, hairlike, loosely ciliated. Outer coxal setae approxmately as long as dorsal setae, except the outermost seta of coxa I, which is very short, about 6 μ. Inner coxal setae shorter than dorsals, slightly clavate. Genital and pargenital setae short (ca. 6 μ), slightly thickened. Length of anal seta 1, 6 μ; anal seta 3, 30 μ. Anal 2 is missing, as in all *Cocceupodes*. Lengths of the dorsal setae in microns: vi – 30; ve – 20; scap. – 20; trich. – 65; hi – 25; he – 50; d_1 – 25; d_2 – 25; li – 30; le – 25; si – 45; se – 24. The v e r t i c a l i s i n t e r n a is clavate, tapering smoothly into a distinct pedicel; closely ciliated from base to apex.

The above figures and description are based on a single female (slide No. 138).

Location and Biology – August 1974, under winter wheat, in soil depth 0 to 5 cm.

Remarks: Niels Haarløv (1957:26) expressed the opinion that there is no real difference between *Cocceupodes mollicellus* (C. L. Koch, 1838) and *C. clavifrons* (R. Canestrini, 1886) and declared the two to be synonymous. Addmittedly, the only, the only differences one notes in the brief descriptions and sketchy illustrations under the two above names are body size and the shape of the epivertical (v. i.) setae. Body size is not a reliable criterion in this case because both are quite small (250 μ for *clavifrons* and 140–200 μ for *mollicellus)* and the size are well within the ranges of intraspecific variability. The epivertical seta of *clavifrons* is said to lack a distinct pedicel whereas in *mollicellus* the pedicel is said to be distinct. However, Haarløv (ibid) has found this character also to be variable. Hence, Haarløv's synonymy is correct in our opinion.

According to Thor and Willmann (1941:36) *Cocceupodes curviclava* was briefly described, without illustrations, by Sig Thor in 1934. Among the characters mentioned are length, 150–280 μ; leg I about length of body; body setae noticeably short, 20–25 μ; seta he 30 μ; setae vi (epivertical setae) clavate, pedicellate, 25 μ long, and concave along the median line. Assuming that this species has 4 pairs of genital setae and the usual number of rhagidial organs, then it is apparent that the only difference between *curviclava* and *mollicellus-clavifrons* is the grooved, or concave, *verticalis interna.* The question then is, how valid is this character? It is probably not at all valid. It is not unusual to find in a series of *Cocceupodes* with clavate (or capitate!) *verticales internae* that occasionally in some specimens the v. i. setae are depressed, concave, or grooved on one side and in other specimens they are not. It seems likely that the swollen portion of the v. i. seta is hollow, not solid, and may be depressed or not depending on its condition at the time of preparation. If the above assumptions are correct, then there seems no other recourse except to accept *curviclava* as a junior synonym of *mollicellus.*

The single specimen we have is a bit larger than *mollicellus-clavifrons,* ie 385 μ, but this is still within acceptable limits in our opinion Otherwise, there is nothing to indicate it could not be the earlier described *mollicellus* and hence we are assigning it there.

If we accept the specimen we have described to be a representative of *Cocceupodes mollicellus,* then *C. australis* Strandtmann et Tilbrook must also be a synonym. There is no noteworthy difference between *C. australis* from the Signey Islands, Subantarctica and the specimen from G. D. R.

Shiba (1971:222) synonymized his *Cocceupodes communis* (1967:68) with *C. australis* but this is probably not correct. *C. communis* Shiba has 6 pairs of genital setae, only two rhagidial organs on tarsus II, and the epivertical setae are shown as being quite close to the epivertical lobe. It is also quite large, 357 μ, although this may not be important. The six pairs of genital setae are sufficient to maintain *communis* as distinct from *australis* (i. e., *mollicellus).*

A key to the species of *Cocceupodes* follows and perhaps best summarizes the characters assumed by us to be differential features.

Key to the species of *Cocceupodes*

1a Setae verticales internae threadlike 2

1b Setae verticales internae capitate of clavate 4

2a Adults with six pairs of genital setae and four pairs of paragenital setae 3

2b Adults with three pairs of genital and three (sometimes 4?) pairs of paragenital setae ..... *trisetatus* Strandtmann et Prasse n. sp.

3a Body 360–425 μ long; dorsal setae about as long as distance to following setae ..... *shepardi* Strandtmann.

3b Body 200–250 μ long; dorsal setae shorter, barely half as long as distance to following seta ..... paradoxus Weis Fogh.

4a Setae verticales internae capitate. Genitas setae 6+6, paragenitals 4+4. Stellate seta of tarsus I on outer lateral surface, remote from the rhagidial organs ..... *stellatus* Strandtmann et Prasse, n. sp.

4b Setae verticales internae clavate. Stellate seta of tarsus I dorsal and adjacent to the basal rhagidial organ 5

5a Genital setae 6+6, paragenital setae 4+4; tarsus II with two rhagidial organs ..... *communis* Shiba.

5b Genital setae, 4+4, paragenital setae 4+4; tarsus II with three rhagidial organs 6

6a Dorsal setae as long as distance to succeeding setae or nearly so, and as long or longer than the verticales internae (v. i. 30 μ, dorsal 35). Tibia I has a small solenidion at the apex of the apical rhagidial organ. Length of body 290–430 μ ..... *breweri* Strandtmann.

6b Dorsal setae shorter, about half as long as distance between succeeding setae and shorter than the vertical internae (v. i. 25–30 μ, dorsal 20–25 μ). Length of body, 120–330 μ ..... *mollicellus* (C. L. Koch).

Claveupodes n. gen.

Setae *verticalis internae* at the anterior end of the body, but apparently no epivertical lobe. Trichobothria long, slender, narrowly clavate. Tarsi I and II with rhagidal organs. Femur IV slightly swollen; anterior pair of hypostomal setae placed well back of the apex of hypostome. Body minutely striatopunctate.

This new genus is a typical Eupodidae in the form of the chelicerae (Fig. 42b), rhagidial organs on tarsi I and II, and in the anterior position of the internal vertical setae. It differs from other genera of the family by the clavate trichobothria, lack of a distinct epivertical lobe, and rather distinct striations around the genital area, much as in *Ereynetes.*

It differs from *Cocceupodes,* some species of which may also lack an epivertical lobe, by having three pairs of anal setae (only two pairs in *Cocceupodes*) and the smaller and more forward position of the v. i. setae.

It differs from *Protereunetes* by the characters already mentioned, most striking of which is the clavate trichobothrium.

Type species: *Claveupodes delicatus* n. sp. Monotypic.

The generic name is in reference to the clavate trichobothria.

Claveupodes delicatus n. sp. (Figs. 42–50)

Female. (Figs. 42,43, 45–48). L. 205 μ (175–235); w. 100 μ (70– 100); leg I, 115 (110–120). Trochanters, 1–1–1–1; coxae, 3–1–4–3; genital setae, 4+4; paragenital setae, 4+4; internal genital setae, two or three pairs; genital knobs, two pairs, rather small.

A small, slender mite, widest at the shoulders and tapering to a narrowly rounded posterior. Legs slender and short, legs I not much longer than body width. Body setae short, delicate, loosely feathered. Trichobothria long, narrowly clavate, arising from broad pits. Transverse sulcus between pro and metapodium well developed. Apparently no epivertical lobe. Average lengths of dorsal setae in microns are: vi – 6; ve – 7; scapulars – 9; trichobothria – 35; hi – 5; he – 9; d_1 – 6; d_2 – 5; li –6; le – 7; si – 10; se – 12. The ventral setae are of about the same range of lengths.

The genital opening is quite large, with poorly defined covers. The internal genital setae are few (two or three pairs) and small. The anal pore is terminal, surrounded by three pairs of setae. The average lengths of the anal setae are: a_1 – 6; a_2 – 10; a_3 –8. The hypostome is relatively large, with the anterior pair of setae well basad of the apex. The tarsotibial joint of the pedipalp (Fig. 42a) is laterally compressed, longer than the genual segment, has a small r. o. on the outer face and apparently bears only six setae.

Legs (Figs. 45 – 50). All with two tarsal claws and empodium; all setae feathered and mostly longer than body setae. Femora I and II not divided; femora III and IV divided. Tarsus I longer than tibia I, with two short, heavy rhagidial organs, tandem and dorsoapical, subtended by a distinctly stellate seta. Tibia I with two small, dorsal r. o. 's, one apical, one basal. Tarsus II longer than tibia II, with two large rhagidial organs in separate fields middorsally on the segment, overlapping. Tibia II with two small, dorsal r. o. 's, tandem. Tibia III with a dorsobasal solenidion. Leg IV apparently withoud sensory setae.

Nympha II. (Fig. 44). L. 165–170 μ. Trochanters, 1–1–1–0; coxae, 3–1–4–2; genital setae, 2+2; paragenital setae, 2+2, trichobothria and body chaetotaxy as in the female. Sensory setae of the legs aparently as in the female.

Protonymph. L. 160 μ, Leg I, 90; genital setae, 1+1; paragenital setae, 0+0; trochantal setae, 0–0–1–0; coxal setae, 3–1–3–0. Tarsi I and II each with only one rhagidial organ.

Described from 31 females, four deutonymphs, and one protonymph.
Type: Selected as the type is the female on slide 111.

Location and Biology – in all vegetation periods abundant, soil depth 0 to 5 cm is favoured.

Remarks: Twelve of the females were with egg – only one each. The egg is very large for the size of the mite, averaging 75 × 95 μ.

Family RHAGIDIIDAE Sig Thor, 1929

Genus *Coccorhagidia* Sig Thor, 1934

Coccorhagidia evansi n. sp. (Figs. 51–57)

Female. The description which follows was based on six females. Length 340 μ (250–420); Leg I approximately 250 μ; trochantal setae, 1–1–2–2; coxal setae, 3–1–4–3; genital setae, 5+5; paragenital setae, 5+5, occassionally 4+4 or 4+5. Many internal genital setae, i. e., 10 pairs or more. Tarsus I has four rhagidial organs, side by side parallel to the long axis of the tarsus, with a stellate seta between the outer two. Tibia I with a dorsoapical r. o. and a dorsobasal solenidion. Genu I with a ventriapical solenidion. Tarsus II with two rhagidial organs, parallel to each other and the long axis of the tarsus, and a spine basally near the outer r. o. Tibia II has a dorsoapical solenidion buried in a tubular pit (as is characteristic of the family) and a dorsobasal solenidion. Genu II with a ventribasal solenidion. Tibia III with paired, small, dorsobasal solenidia. Leg IV apparently without sensory setae.

The pedipalp genu (segment 3) has two setae, the tibiotarsus (segment 4) has nine setae in the smaller forms and 10 in the larger forms, plus an erect, dorsomedian solenidion in both sizes. (Fig. 55).

The longest dorsal seta is the scapular, which is twice as long as the external vertical and as long as the trichobothrium. The approximate average lengths of the dorsal setae are: vi – 10; ve – 18; sc – 20; trichobothria – 30; hi – 10; he – 18; d_1 – 10; d_2 – 10; li – 10; le – 8; si – 20; se – 10. In the smaller forms the setae are proportionately shorter, and in the larger forms, proportionately longer.

Protonympha. Two specimens of nympha I were seen. Length 250 μ; Leg I 180 μ; genital setae, 1+1; paragenitals, 0+0; trochantal setae, 0–1–1–0; coxae, 3–1–3–0. Number of setae on the palp genu, two. Tarsi I and II each with one rhagidial organ.

Type: Female, slide 79. (300 μ long).

Location and Biology – sporadic existence under winter wheat and oats, during summer months, in depths 0 to 20 cm, predator.

Remarks: In Strandtmann's key (1971) to the species of *Coccorhagidia*, this would run to *subterranea* Berlese. The description of *subterranea* as given by Thor and Willmann (1941), (where the name is given as *C. berlesei* T. and W.), lacks the details necessary for specific determination, but Evans (1952) redescribes the species with a few more details, and if we accept Evans' interpretation as correct, then *subterranea* and the two specimens before us are not conspecific. *C. subterranea*, as shown by Evans (ibid. p. 67) has *three* rhagidial organs on tarsus I, of which two are tandem, and *three* rhagidial organs on tarsus II. *C. evansi*, as already stated, has four parallel r. o. 's on tarsus I, and only two on tarsus II.

The species is named for G. Owen Evans, the accomplished British Acarologist.

Coccorhagidia clavifrons (Canestrini, 1886) (Figs. 61–65)

Female. Length 460 μ; Leg I ca. 400 μ. Trochanters, 1–1–2–2; coxae, 3–1–6–3. Genital setae, 5+5; paragenitals, 4+4. Dorsal setae rather short; trichobothria narrowly clavate, pedicellate, and coarsely ciliated. Length of the dorsal setae in microns are: vi – 15; ve – 22; scapulars – 48; trichobothria – 50; hi – 15; he – 32; d_1 – ; d_2 – 15; li – 15; le – 13; si – 33; se – 16. The genital and paragenital setae are small, averaging about 10 μ. The coxal setae are longer, approximately 20 μ.

Gnathosoma. Pedipalp tibiotarsus with 10 setae plus an erect solenidion; palp genu with apparently only two setae, one small, one longer, both ciliated; palp femur with two dorsal setae. Total length of chelicera approximately 150 μ, length of shears approximately 45 μ. Fixed digit bluntly tridentate, the two setae both anterior to base of shears and the posterior seta not, or just barely, reaching base of anterior seta. The movable digit with four to five small, sharp serrations on inner margin. Hypostome with the characteristic four ciliated basal setae and the four nude, hairlike apical setae.

Legs. (Figs. 63–65). Tarsi I and II each with four irregularly oblique rhagidial organs. On tarsus I they are crowded together at the apex of the segment, with the apical two r. o. 's lateral and almost parallel, and the basal two longer, dorsal and oblique. A stellate seta is at the base of the second r. o. Tibia I has a small, dorsoapical r. o. and a long, recumbent solenidion arising basad of this r. o. and extending forward beyond the tip of the tibia. Genu I with a ventroapical solenidion. The r. o. 's of tarsus II (fig. 65) occupy most of the dorsal surface of the segment and are rather evenly spaced and uniformly oblique. A spine may be found near the base of the second r. o. Tibia II has the dorsoapical organ in a sunken tube, as is characteristic of the Rhagidiidae, and a small, erect solenidion very near it. Genu II with a ventroapical solenidion. Tibia III has paired dorsobasal solenidia, and tibia IV has a single dorsomedial solenidion. Genu III has a ventroapical solenidoin.

The leg setae, particularly of the tarsi, have the short cilia arranged in rings. The body setae are somewhat more coarsely ciliated and the cilia not in rings.

Deutonymph. L. 385 μ. Trochanters, 1–1–2–1; coxae, 3–1–4–2. Genital setae, 2+2; paragenitals, 2+2. Tarsus I with two oblique rhagidial organs and a stellate seta at their base. Tibia I with the tibial organ and solenidion as in the female. Tarsus II with two r. o. 's and a basal spine. Tibia II as in the female. Palp tibiotarsus with 10 setae and an erect solenidion dorsomedially.

Protonymph. L. 300 μ. Trochanters, 0–1–1–0; coxae, 3–1–3–0. Genital setae, 1+1, paragenitals, 0+0. Tarsus I with one rhagidial organ plus the stellate seta; tarsus II with one r. o. plus the spine. Sensory setae of the tibia and genu as in the female. Length of chelicera 75 μ, length of shears approximately 22 μ; palp tibiotarsus with eight setae; otherwise as in the female. Body shape and relative lengths of setae as in the female. Lengths of dorsal, anal, and genital setae in microns are: vi – 6; ve – 13; scapulars – 30; trichobothria – 32; hi – 10; he – 17; d_1 – 10; d_2 – 9; li – 11; le – 9; si – 25; se – 10; a_1 – 6; a_2 – 11; a_3 – 16; accessory anal seta – 5; genital – 7.

The above descriptions are based on one female, one deutonymph, and one protonymph, supplemented by two females from the area of Stuttgard in West Germany (courtesy of Dr. Klaus Bleich).

Location and Biology – during the summer-months of all vegetation periods very small density of specimens, predator.

Remarks: The decision to name this material *Cossorhagidia clavifrons* is somewhat arbitrary as there are several discrepancies between this and the description as given in Thor and Willmann (1941:128). According to Thor and Willmann, *C. clavifrons* (R. Cans.) should have a coxal formula of 3–1–4–3, 10 setae surroundigng the genital pore, and only eight setae on the palp tibiotarsus, whereas our material has the coxal formula 3–1–6–3, eight paragenital setae, and 10 setae on the palp tibiotarsus. The statement of eight setae on the palp tibiotarsus can probably be discounted because no rhagidiid that we have seen ever has that few setae, except in the protonymph. A corona of 10 setae encircling the genital pore could readily consist of four pairs of genital setae plus the first pair of anal setae (*e. g.* Fig. 62). The coxal formula of 3–1–*4*–3 cannot be readily explained away unless the preparations studied by Canestrini, and quoted by Thor and Willmann did not show the coxae clearly or had some setae missing (as is frequently the case in mounts of rhagidiids).

On the positive side, *C. clavifrons* is quoted as being 400–450 μ long (ours measured 440–500), ration of chelicera to shears of 140 to 40 (ours 150–45) and tarsi I and II each with four oblique, closely crowded rhagidiform organs.

In Strandtmann's (1971) key to the *Coccorhagidia* this mite would key to *semiclavifrons* Shiba because of the coxal formula 3–1–6–3. However it cannot be *semiclavifrons* because in *semiclavifrons* the trichobothria are not distinctly clavate, the fixed digit of the chela has five cusps, the cheliceral setae are close together and clearly overlap, the movable digit is finely serrated on the inner margin, tarsus II has three rhagidiform organs, and leg I is longer than the body.

Coccorhagidia pittardi also has four rhagidial organs on both tarsi I and II, but it is a much larger species (600–700) and has the solenidia of tibia I and II remote from the tibial organs.

Genus *Rhagidia* Thorell, 1872

Rhagidia mucronata Willmann, 1936 (Figs. 66–68)

Female. L. approximately 600 μ. Genital setae, 5+5; paragenitals, 5+5. Trochanters, 1–1–2–2; coxals, 3–1–5–3. Tarsus I with four oblique rhagidial organs, with a stellate seta between the basal two. Tibia I with a small, dorsoapical r. o. Tarsus II with three rhagidial organs lying tandem, with a spine subtending the basal r. o. Tibia II with a small sensory seta in a subcutaneous pit and a small dorsobasal solenidion. Tibia III with a pair of small, dorsobasal solenidia. The cheliceral shears are about 1/3 of the total cheliceral length. The basal seta of the fixed digit is inserted opposite the hinge of the movable digit and does not reach the base of the longer anterior seta. A prominent, sharply pointed tooth at the base of the fixed digit ont he inner margin.

The pedipalp tibiotarsus has 10 setae plus a small, erect solenidion. The dorsal setae of this segment are narrowly lanceolate, the apical and ventrals are longer and more slender.

The above description is from a single female, slide No. 148.

Deutonyph. L. 370 μ. Genital setae, 2+2; paragenitals, 2+2. Trochanters, 1–1–2–1; coxae, 3–1–4–1. Tarsus I with two oblique rhagidial organs and a stellate seta between them basally; tibia I with a dorsoapical r. o. and a subtending solenidion; genu I with a ventroapical solenidion. Tarsus II with two r. o. 's in tandem and a subtending spine. Fixed digit of the chela with a sharp pointed basal tooth.

Location and Biology – sporadic existence in all vegetation periods especially winter wheat and maize, during the months July and August, soil depth 0 to 10 cm, predator.

Family EUPALOPSELLIDAE Willmann, 1952

Genus *Eupalopsellus* Sellnick, 1949

Eupalopsellus trudis Summers, 1960 (Figs. 58–60)

Female. L. 340 μ; w. 130; Leg I 135; Leg II 110; Leg III 100; Leg IV 120. Setae of leg segments, exclusive of sensory setae: coxae, 2–1–2–2; Trochanters, 1–1–1–1; femora, 4–4–3–1; genuae, 2–1–1–1;tibiae, 5–4–4–4; tarsi, 10–9–6–6. All tarsi with two claws and empodium. The empodium consists of two tenet hairs, generally of unequal length, each tipped with a sucker. The two setae of genu I are a dorsal doublet, one long, faintly and sparsely serrate, the other short, bulbous, appendiculate. (Fig. 57b). A dorsal solenidion is present on tarsi I, II and III, and on tibia I, II, III and IV. Dorsum with four plates in series which are without obvious markings and are partially invaded by the body striations. Eyes obvious, on the anterior lateral margin of the propodosomal plate. Peritrems on the anterior body margin. Venter with three pairs of flagelliform ventral setae, the first two pairs, very long, the third pair much shorter, about 1/4 of first and 1/5 of second. Genitoanal area subterminal, with seven pairs of setae as shown. Gnathosoma. Chelicerae fused into a long, rather narrow stylophore; (Fig. 60), attenuated, four setae near apex, two at base of attenuated part, two on the fused coxae. Pedipalp long and slender, the tarsus attenuated and nearly as long as the tibia and genu combined. Palp tarsus tipped with a single spiniform sensory seta; with a solenidion on the outer margin midlaterally. Palp tibia with two dorsal setae; the outer long (2/3 x length of palp tarsus) the inner only 1/2 as long as the outer and delicate. There is no indication of a thumb-claw complex.

Location and Biology – a single object in April 1974, under winter wheat, in soil depth 0 to 5 cm.

Remarks: This is a slender, fusiform, very pretty mite. Most of the setae are very slender, whiplike and apparently smooth but some of the dorsal leg setae are heavier and very faintly serrate. Setae li and e on the posterior dorsum are the heaviest. They are slenderly lanceolate and faintly serrulate.

The single female specimen before us agrees with Summer's description of *trudis* in very respect except minor differences in lengths of some setae.

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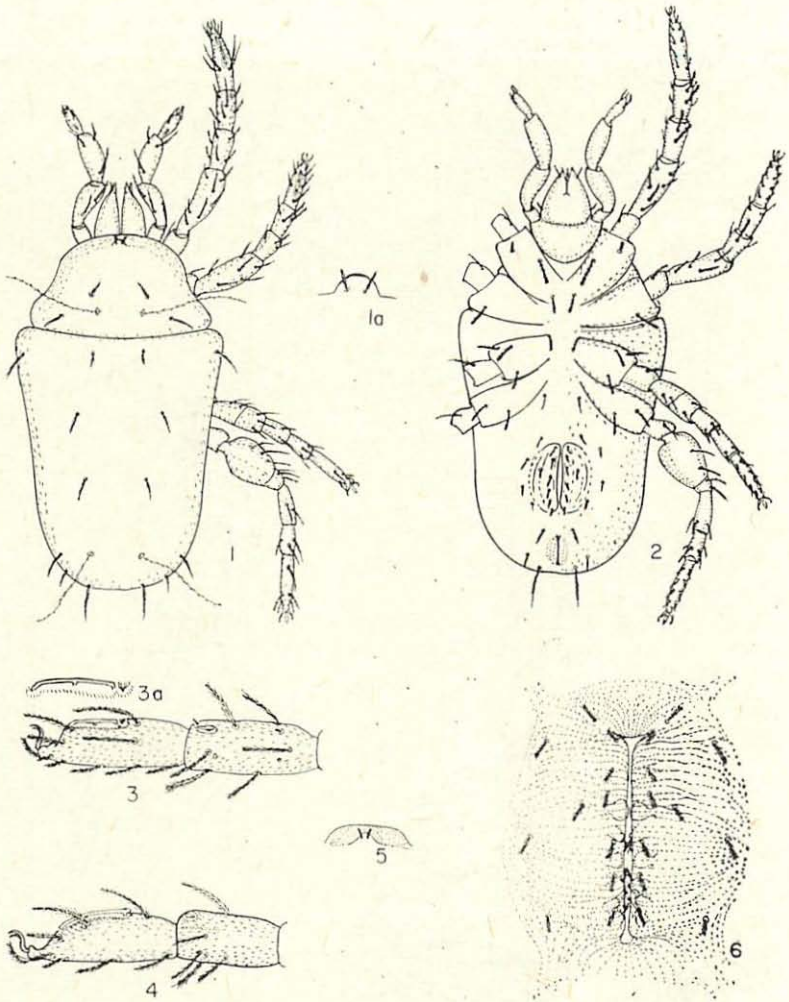
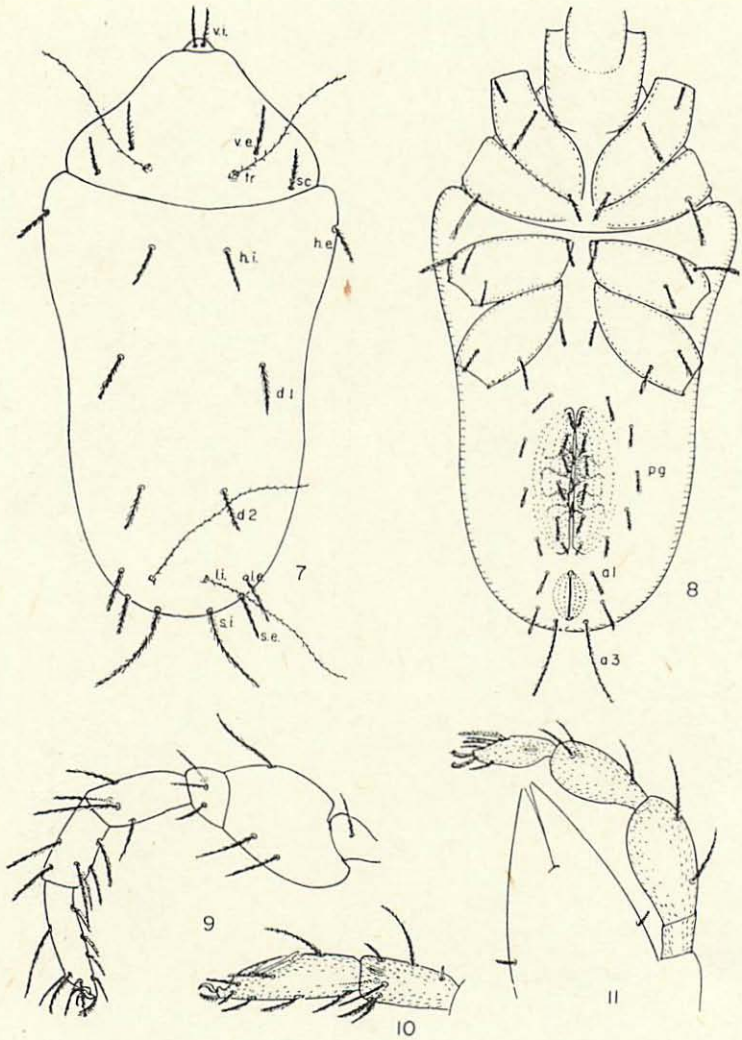


Figures 1–6. *Eupodes ereynetoides* n. sp., female.

Fig. 1, dorsum; Fig. 1a, epivertex with epivertical setae; Fig. 2, venter; Fig. 3, lateral view of tarsus and tibia I; Fig. 3a, enlarged view of rhagidial organ and stellate seta of tarsus I; Fig. 4, lateral view of tarsus and tibia II; Fig. 5, epivertex and epivertical setae, illustrating the fact that the epivertex is subterminal; Fig. 6, female genitalia with the brackting paragenital setae.



Figures 7–11. *Eupodes* sp., female.

Fig. 7, dorsum; Fig. 8, venter; Fig. 9, side view of leg IV; Fig. 10 side view of tarsus and tibia II; Fig. 11, hypostome, and the left pedipalp.

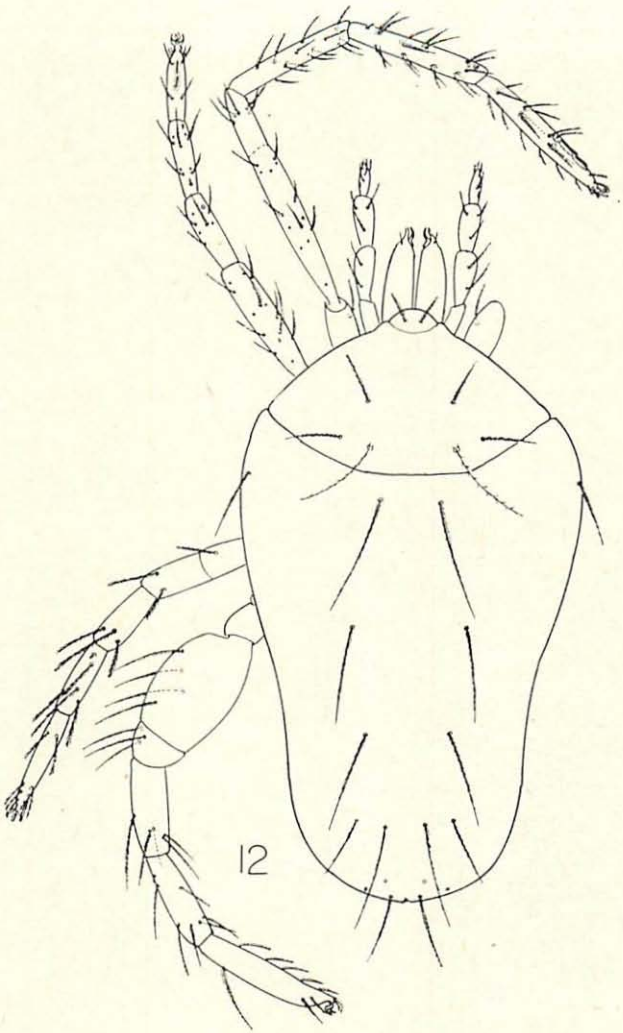


Figure 12. *Eupodes voxencollinus* Sig Thor; dorsum of female.

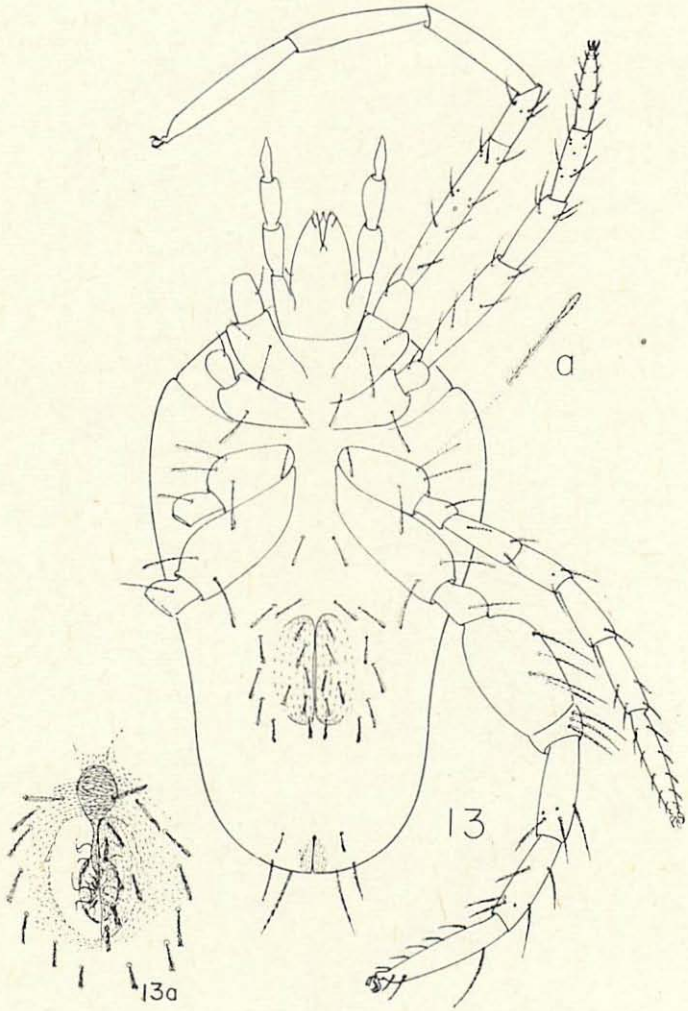
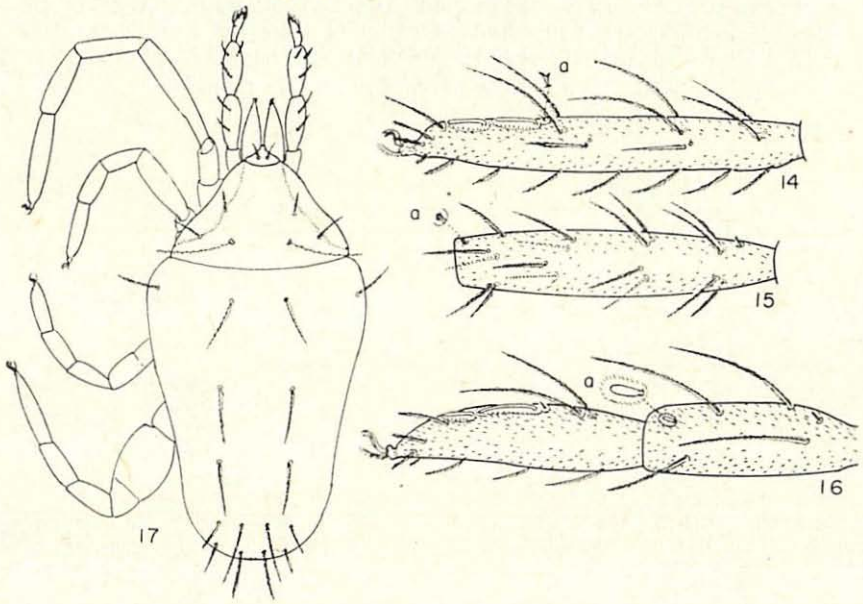
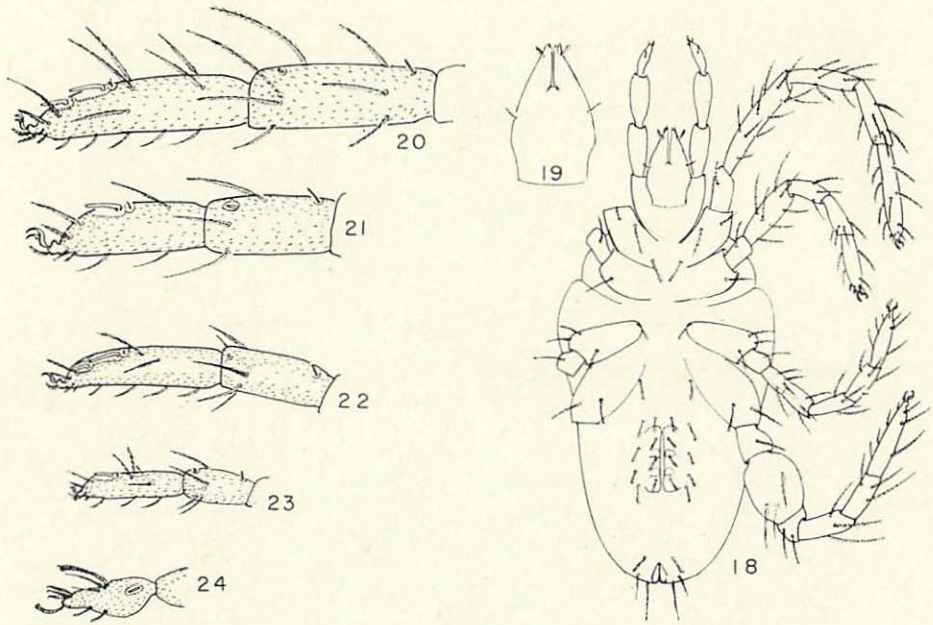


Figure 13. *Eupodes voxencollinus* Sig Thor; venter of female; Fig. 13 a, male genitalia.



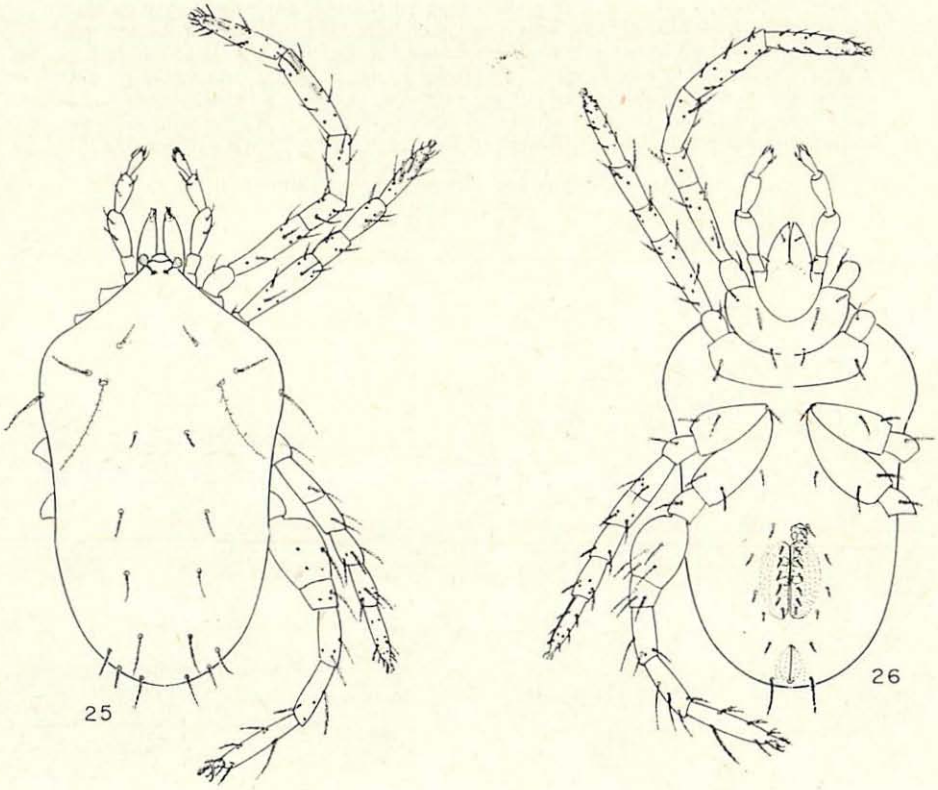
Figures 14–17. *Eupodes voxencollinus* Sig Thor.

Fig. 14, lateral view of tarsus I of female; Fig. 14a, „stellate" seta englarged; Fig. 15, lateral view of tibia I of female; Fig. 15a, tibial organ enlarged; Fig. 16, lateral view of tarsus and tibia II of female; Fig. 16a, tibial organ enlarged; Fig. 17, dorsum of Nympha III.

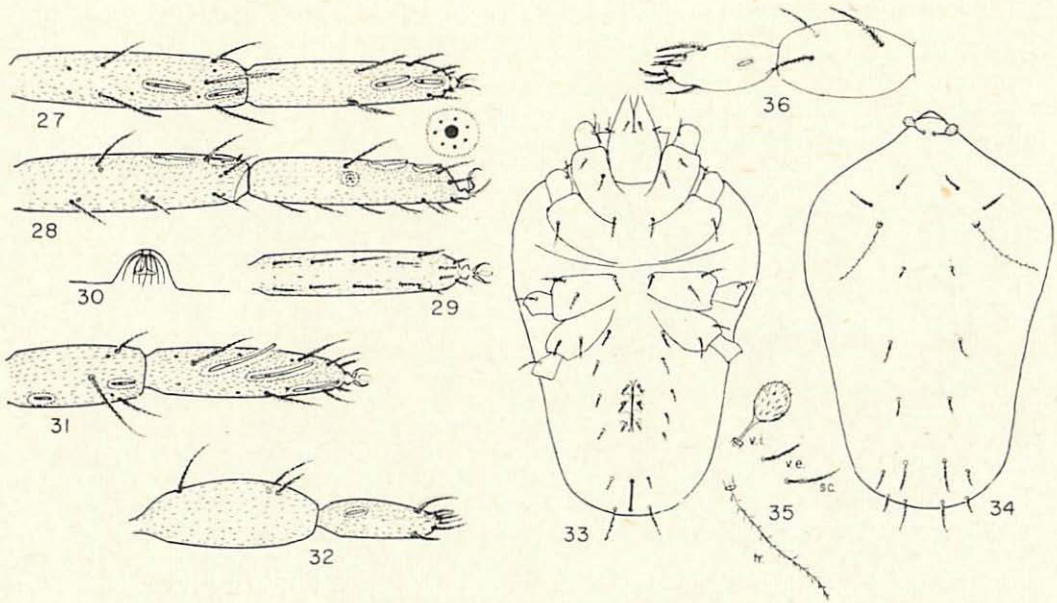


Figures 18–24. *Eupodes voxencollinus* Sig Thor.

Fig. 18, venter of Ny. III; Fig. 19, hypostom of Ny. III. Fig. 20, lateral view of tarsus and tibia I of Ny. III. Fig. 21, lateral view of tarsus and tibia II of Ny. III. Fig. 22,lateral view of tarsus and tibia I of Ny. II; Fig. 23, lateral view of tarsus and tibia I of Ny. I. Fig. 24, lateral view of pedipalpal tarsotibia of Ny. 1.

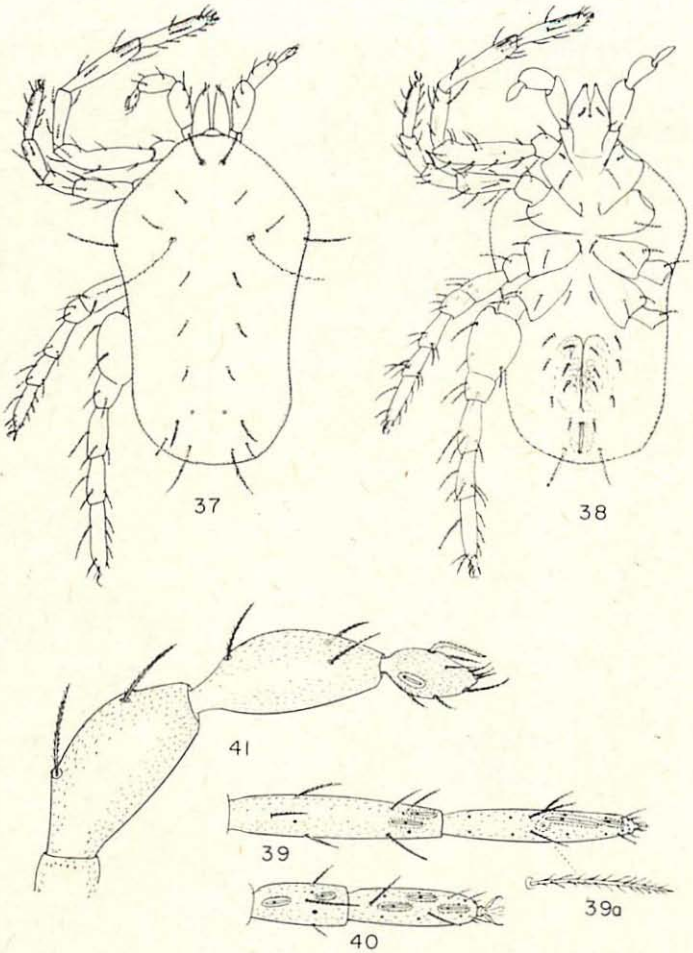


Cocceupodes stellatus n. sp.: Fig. 25, dorsum of male; Fig. 26, venter of male.



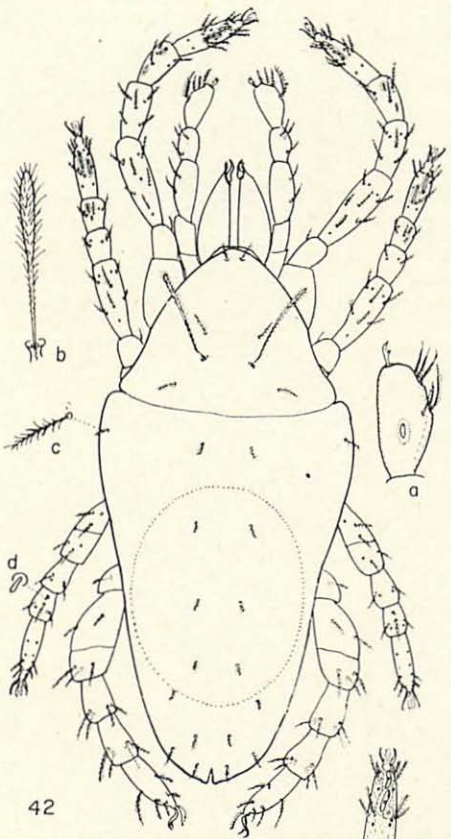
Figures 27–36. *Cocceupodes stellatus* n. sp.

Fig. 27, dorsal view of tarsus and tibia I, male; Fig. 28, lateral view of tarsus and tibia I,male; Fig. 29, ventral view of tarsus I, male; Fig. 30, lateral view of the stellate seta; Fig. 31, dorsal view of tarsus and tibia II; Fig. 32, lateral view of segments3 and 4 of the pedipalp; Fig. 33, venter of Nympha III; Fig. 34, dorsum of Ny III; Fig. 35, the propodonotal setae enlarged (verticalis internae, verticalis externae, scapular, and trichobothrium, as marked); Fig. 36, lateral view of pedipalp, segments 3 and 4.



Figures 37–41. *Cocceupodes trisetatus* n. sp., female

Fig. 37, dorsum; Fig. 38, venter; Fig. 39, dorsal view of tarsus and tibia I; Fig. 39a, tarsal seta enlarged; Fig. 40, dorsal view of tarsus and tibia II, Fig. 41, lateral view of right pedipalp.



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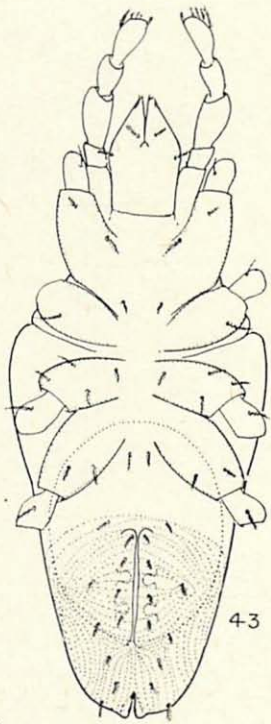

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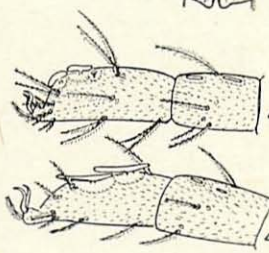

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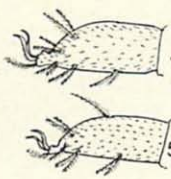

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Figures 42–50. *Claveupodes delicatus* n. gen. n. sp.

Fig. 42, dorsum of female; Fig. 42a, lateral view of left palp tibiotarsus; Fig. 42b, trichobothrium, enlarged; Fig. 42c, external humeral seta enlarged; Fig. 42d, solenidion of tibia III, enlarged; Fig. 43, venter of female; Fig. 44, genitalia of Nympha II; Fig. 45, dorsal view of leg I; Fig. 46, lateral view of tarsus and tibia I; Fig. 47, lateral view of tarsus and tibia II; Fig. 48, dorsal view of tarsus II; Fig. 49, lateral view of tarsus III; Fig. 50, lateral view of tarsus IV.

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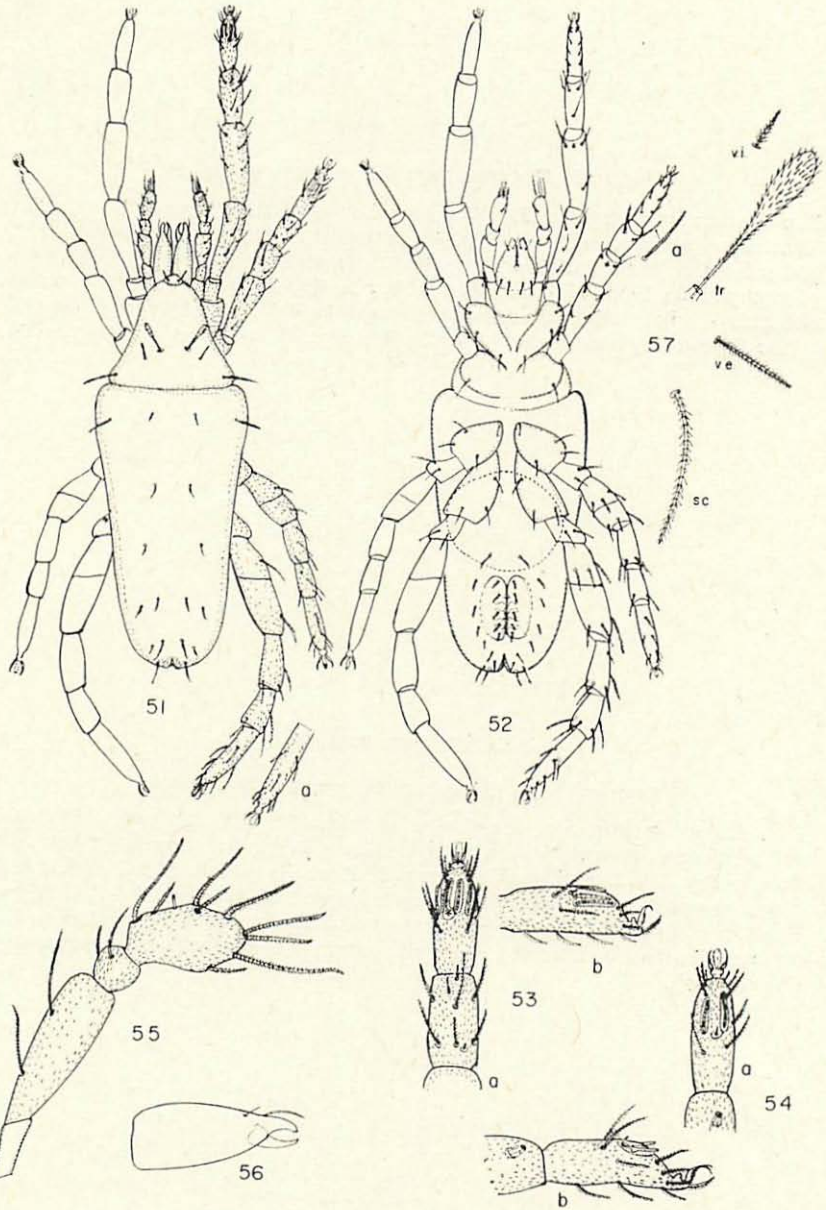
Figures 51–57. *Coccorhagidia evansi* n. sp., female

Fig. 51, dorsum; Fig. 51a, dorsal view of tarsus IV; Fig. 52, venter; Fig. 52a, enlarged view of ventral seta, tibia II; Fig. 53a, dorsal view of tarsus and tibia I; Fig. 53b, lateral view of tarsus I; Figs. 54a and b, dorsal and lateral views respectively of tarsus II and anterior end of tibia II; Fig. 55, lateral views of pedipalpus; Fig. 56, lateral view of chelicera; Figs. 57, v. i., v. e., tr., sc.-setae (vertivalis internae, verticalis externae, trichobothrium, scapularis, respectively).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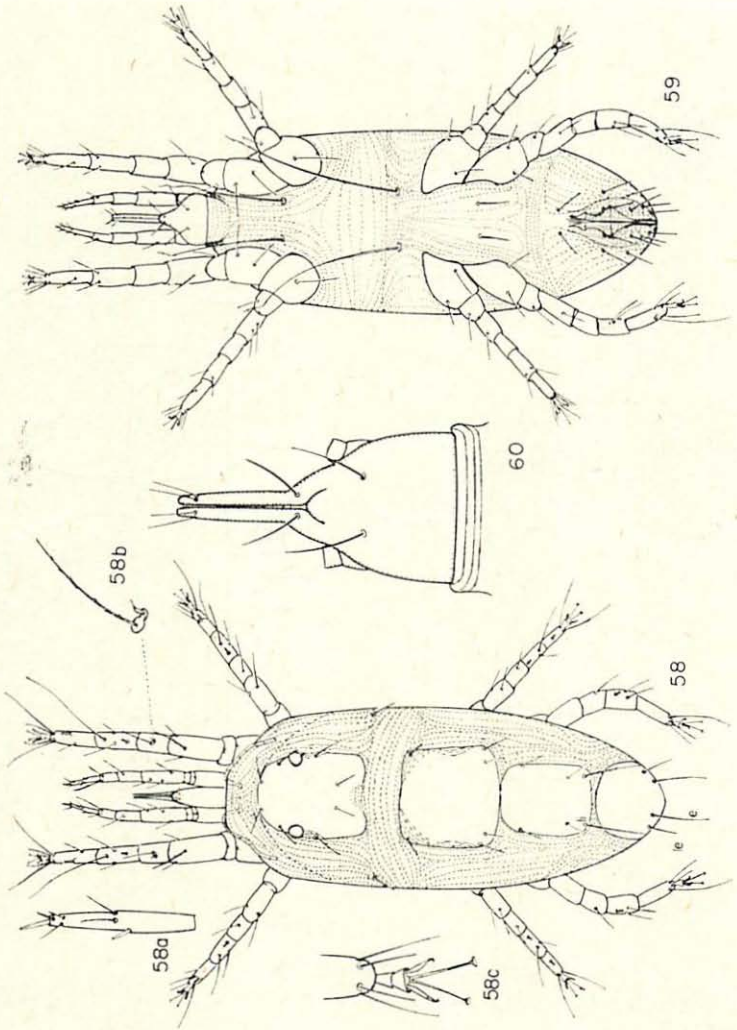
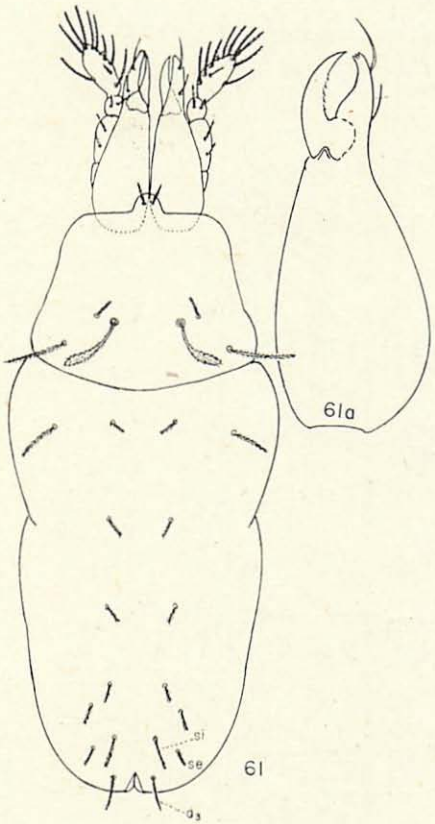


Figures 58–60. *Eupalopsellus trudis* Summers, female.

Fig. 58, dorsum; Fig. 58a, dorsal view of left pedipalpal tarsus; Fig. 58b, doublet setae of genu I; Fig. 58c, ambulacrum of tarsus III; Fig. 59, venter; Fig. 60, ventral view of hypostome.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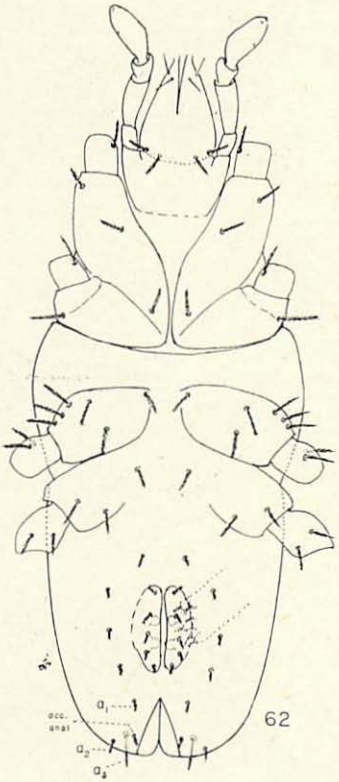
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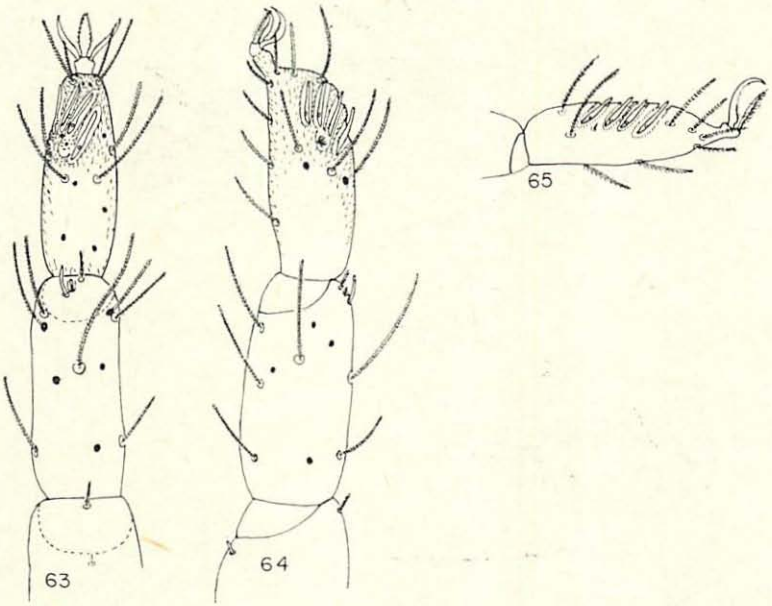
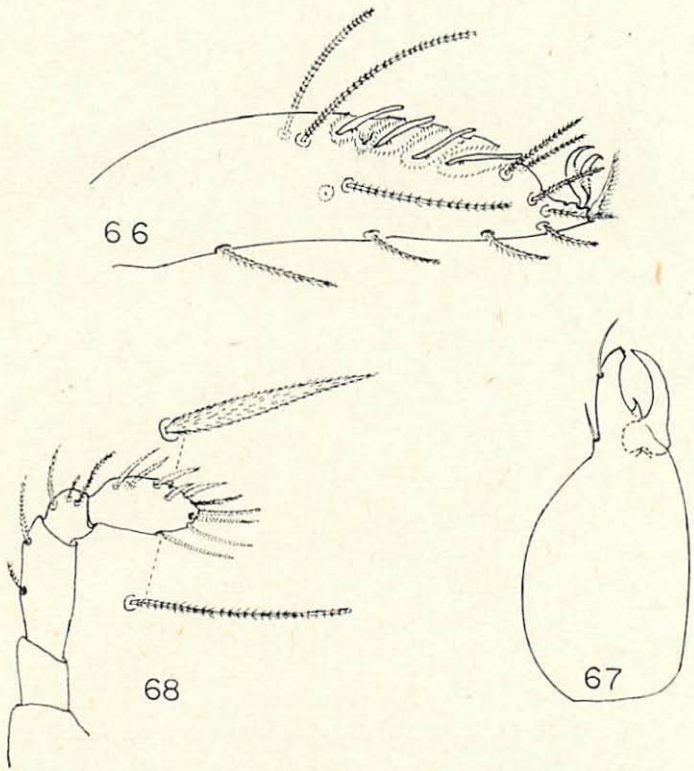


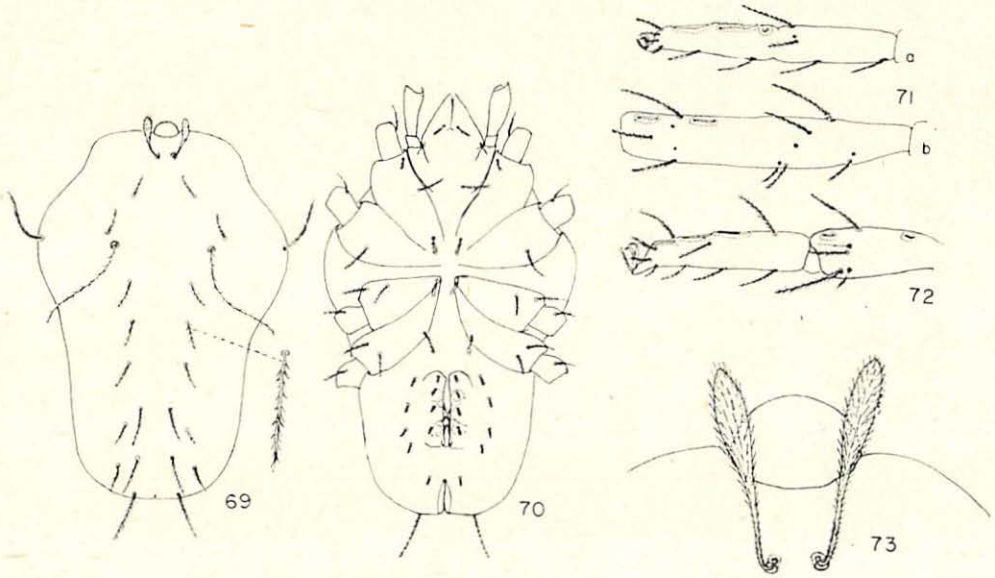
Figures 61–65. *Coccorhagidia clavifrons* Sig Thor, female.

Fig. 61, dorsum; Fig. 61a, chelicera enlarged; Fig. 62, venter; Figs. 63 and 64, dorsal and lateral views respectively of tarsus and tibia I; Fig. 65, lateral view of tarsus II.



Figures 66–68. *Rhagidia mucronata* Willmann, female.

Fig. 66, lateral view of tarsus I; Fig. 67, chelicera; Fig. 68, pedipalp, with one dorsal and one ventral seta enlarged.



Figures 69–73. *Cocceupodes mollicellus* (C. L. Koch), female.

Fig. 69, dorsum, with enlargement of seta d_1; Fig. 70, venter; Figs. 71a and b, lateral view of tarsus and tibia respectively of leg I, Fig. 72, lateral view of tarsus and tibia II; Fig. 73, enlargement of epivertical lobe and epivertical setae (or setae verticales internae).