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The Afrotropical species of *Eucara* Friese, *Tetralonia* Spinola and *Tetraloniella* Ashmead

(HYMENOPTERA: ANTHOPHORIDAE)

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ABSTRACT

The Afrotropical species of the tribe Eucerini are revised. In the genus *Eucara* seven species are recognized, of which the following three species are new: *E. boharti, E. paulyi* and *E. mesotes,* and six specific and subspecific names are placed in synonymy. Five species of *Tetralonia* are recognized and three specific names have been placed in synonymy. Twenty-eight species of *Tetraloniella* are recognized, of which the following nine species are new: *T. brevikeraia, T. whiteheadi, T. watmoughi, T. abrochia, T. aurantiflava, T. sierranila, T. brooksi, T. ataxia* and *T. elsei,* and twelve specific and subspecific names are recorded as new synonyms. Keys for the identification of the genera and the species in each genus are provided and a complete description is given for each species.

UITTREKSEL

DIE AFROTROPIESE SPESIES VAN EUCARA *FRIESE,* TETRALONIA *SPINOLA* EN TETRALONIELLA *ASHMEAD*

Die Afrotropiese spesies van die tribus Eucerini is hersien. Sewe spesies van die genus Eucara *word behandel. Die volgende drie van hierdie spesies word as nuut beskryf:* E. boharti, E. paulyi *en* E. mesotes, *en ses spesies- en subspesiesname word as nuwe sinonieme aangeteken. Vyf spesies van* Tetralonia *word behandel en drie spesiename word as nuwe sinonieme aangeteken. Agt-en-twintig spesies van* Tetraloniella *word behandel, waarvan die volgende nege as nuwe spesies beskryf word:* T. brevikeraia, T. whiteheadi, T. watmoughi, T. abrochia, T. aurantiflava, T. sierranila, T. brooksi, T. ataxia *en* T. elsei, *en twaalf spesie- en subspesiename word as nuwe sinonieme aangeteken. Sleutels vir die identifikasie van die genera en die spesies is ingesluit en volledige spesiebeskrywings word gegee.*

I. INTRODUCTION

The genera *Eucara* Friese, *Tetralonia* Spinola and *Tetraloniella* Ashmead belong to the tribe Eucerini and they are the only known representatives of this tribe in the Afrotropical region. This large diverse tribe, which is one of several in the Anthophorinae, occurs on all continents except Australia. They are mostly fairly large pollen collecting bees.

The Afrotropical species of the tribe have not previously been comprehensively revised. Friese's (1909a) 'Die Bienen Afrikas' contains, almost exclusively, a list of the known species and quotations of their original descriptions. Many new species have been described since 1909 and in the absence of any revisory work it has, until now, not been possible to provide reliable identifications of these bees. Although this study has been mared by a shortage of material, especially where only one sex of a species is known, it should enable the identification of most of the species in this region.

My interpretation of the eucerine genera was based primarily on a study of the type species of the three included genera and descriptions of the other genera. During the course of this study, however, it became clear that a world-wide revision of the eucerine genera is needed. Of particular importance in this respect are the species that have characteristics of different genera such as *E. mesotes, T. michaelseni* and *T. elsei.* The generic affiliations of these three species are dealt with in detail below.

II. METHODS

During the course of this study it was found that the most useful characters for separating the three Afrotropical eucerine genera are the shape of the clypeus and the structure of the scopa. The most useful characters for the separation of the species of these three genera are the structure of the seventh metasomal sternum and the gonostylus of the genitalia in the males and the colour of the integument and vestiture in both sexes. The males of *Eucara* can also be separated by the structure of the tibial spurs and basitarsus of the hind leg. With the exception of colour, these features have not been studied in the Afrotropical species of these three genera before.

The primary type of each species and all the synonyms were studied, except were I have mentioned that I have not seen the type material. A uniform set of morphological structures was used, in combination, to determine, describe and illustrate the species. Each species has been described or redescribed. The terminology is similar to that used by Michener (1944) except in the description of the position of various structures on the legs. For this purpose I have adopted the system proposed by Grimshaw (1905) in which the different surfaces of the leg are as they would be if it was held horizontally at right-angles to the long axis of the body.

The shape of the clypeus and the number of segments of the maxillary palpus are usually similar in both sexes of each species. I have, therefore, only described these characters for the female of each species, or for the male, in species where only the latter sex is known. Apart from certain specific features in the colour of the integument, such as facial maculation, the integument in both sexes of each species is black with brownish-orange areas that are of no taxonomic importance. I have only described the features that are of taxonomic significance. Similarly, I have concentrated on characters of taxonomic importance in the description of the colour of the pubescence and the structure.

For convenience I have used the abbreviation *'Te'* for *Tetralonia* and *'T'* for *Tetraloniella.* In the description of the metasoma I have used the abbreviation 'T' and 'S' for the terga and sterna, respectively, i.e., T1 referes to the first metasomal tergum and T2–T4 to the second, third and forth metasomal terga. In the illustration of the seventh metasomal sternum of each species shading has been used to

show structures that project from the disc of the sternite towards the reader. In the 'Material examined' many records do not have dates and/or collectors name. This is because this information was not included on the labels that were attached to the specimens.

In an attempt to separate both sexes of all the known species in the keys I have had to resort to fairly vague characters, such as distribution and overall length, in certain couplets. These species can usually be easily recognized in the opposite sex. Where more than one species is keyed out in the same couplet, the species are indistinguishable in that sex and the opposite sex is needed for a positive identification. To facilitate the recognition of the species, several couplets have additional characters which may overlap in parenthesis.

The distribution maps include the localities of the material that was examined in addition to published distribution records. Doubtfull records have been omitted.

The following abbreviations are used:

AM — Albany Museum, Grahamstown.

AMNH — American Museum of Natural History, New York.

BBSL — Bee Biology and Systematics Laboratory, Utah State University, Logan.

BMNH — British Museum (Natural History), London.

DM — Durban Museum and Art Gallery, Durban.

IEAA — Istituto di Entomologia Agraria e Apicoltura, Università Turin, Turin.

KNP — Kruger National Park, Skukuza.

MCZ — Museum of Comparative Zoology, Harvard University, Massachusetts.

MHU — Museum für Naturkunde der Humboldt-Universität, Berlin.

MNHN — Muséum National d'Histoire Naturelle, Paris.

MRAC — Musee Royal d'Afrique Centrale, Tervuren.

NCI — National Collection of Insects, Pretoria.

NRS — Naturhistoriska Riksmuseet, Stockholm.

PC — Dr A. Pauly's private collection, Gembloux, Belgium.

RMNH — Rijksmuseum van Natuurlijke Historie, Leiden.

SAM — South African Museum, Cape Town.

SEM — Snow Entomological Museum, University of Kansas, Lawrence.

SM — State Museum, Windhoek.

SU — Stellenbosch University, Stellenbosch.

TM — Transvaal Museum, Pretoria.

UCD — University of California, Davis.

III. DIAGNOSIS OF THE AFROTROPICAL EUCERINI

The Afrotropical Eucerini can be recognized by the following combination of characters, all of which are illustrated in Fig. 1 & 81: antennal flagellum of male ranges from relatively short (1,8–2,5× as long as eye) to very long (3,4–4,0× as long as eye), the latter category is unique to the Eucerini; wings relatively hairy throughout; marginal cell of fore wing longer than distance from its apex to wing tip; apex of marginal cell rounded and gently curved away from anterior margin of wing; fore wing with three submarginal cells, first and third subequal in length and each a little longer than second submarginal; arolia present on all legs; basitibial plate present in both sexes; proximal region of T2–T4, in females, and T2–T5, in males, usually with a tomentum of short pubescent hairs; T5 and T6 of females and males, respectively, with a pygidial plate.

IV. KEY TO THE GENERA

1. Clypeus with entire ventral margin gently and evenly concave (Fig. 37 & 51)..... 2
– Ventral clypeal margin gently concave mesally and gently convex laterally (Fig. 2)..... *Eucara*
2. Female with anterior region of scopa relatively sparsely pubescent (this region contains less than 100 hairs); clypeus strongly protuberant in both sexes, protuberance about 0,8× eye width..... *Tetralonia*
– Female with scopa completely densely pubescent (anterior region with more than 200 hairs); clypeus moderately protuberant, protuberance about 0,5× eye width, if strongly protuberant female with scopa as described above and male with anterior projecting branch near middle of gonostylus of genitalia (Fig. 102, 107)..... Tetraloniella

V. THE GENUS *EUCARA* FRIESE

Eucara Friese

Anthophora (Eucara) Friese, 1905b: 241; Cockerell, 1933c: 456.

Eucara Friese: Friese, 1911: 667.

Tetralonia (Eucara) Friese: Alfken, 1932: 52–53.

Type species: *Anthophora (Eucara) laticeps* Friese, by subsequent designation (Cockerell, 1933c).

Friese (1905b) described *Eucara* as a subgenus of *Anthophora,* which belongs to the Anthophorini. He later (Friese, 1911b) gave *Eucara* generic status but made no mention of the fact that *Eucara* belongs to the Eucerini. Alfken (1932) first indicated that *Eucara* is tribally distinct from *Anthophora* when he referred to *Eucara* as a subgenus of *Tetralonia.*

This genus is endemic to sub-saharan Africa and contains seven species: *E. macrognatha, E. boharti, E. paulyi, E. caudata, E. penicillata, E. ruficollis* and

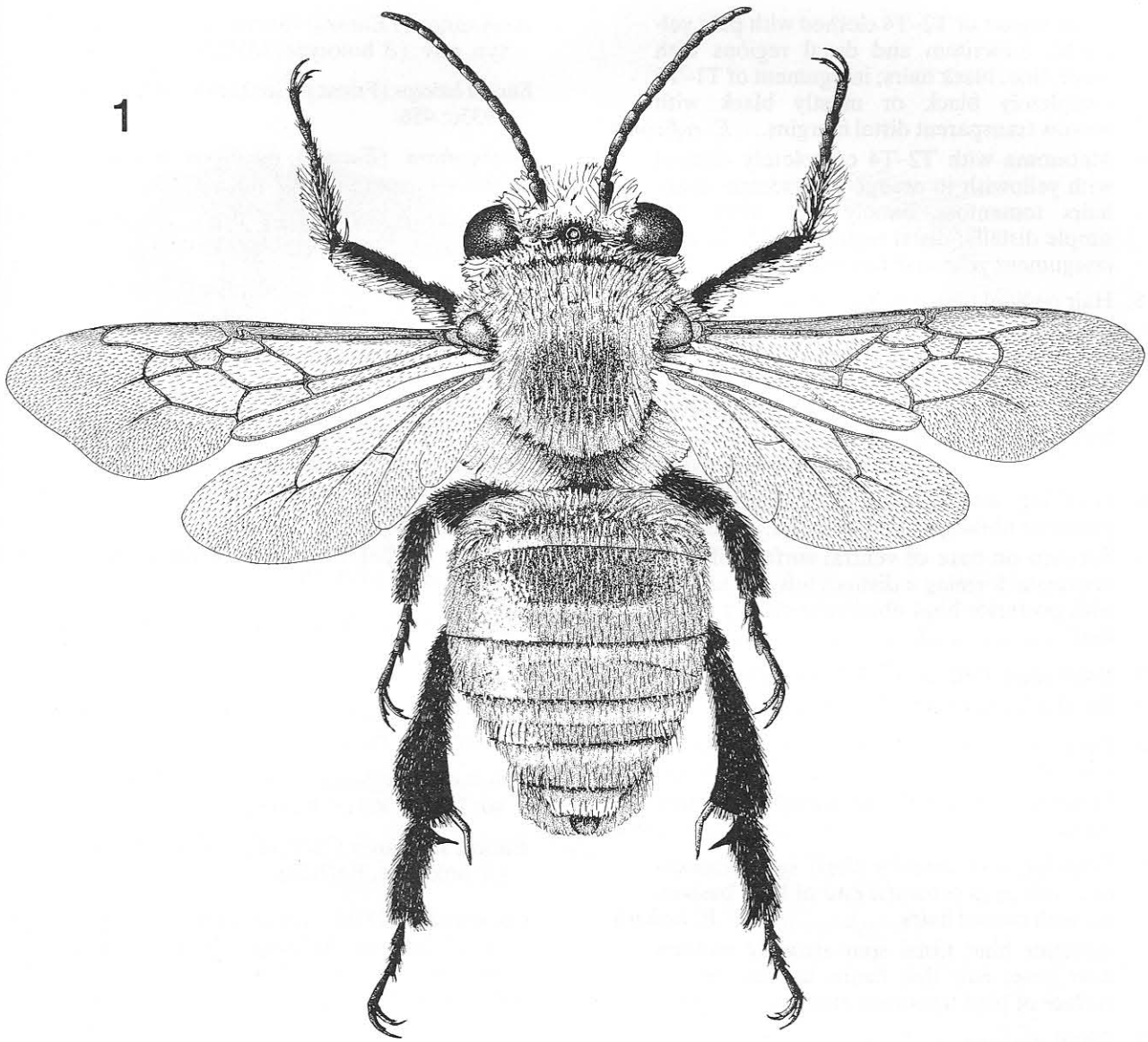

FIG. 1 Habitus of male *E. macrognatha*

E. mesotes. The most important character by which this genus can be identified is the shape of the clypeus. The scopa of the female is sparsely clothed with hairs which have a row of branches on one side only and these hairs are clearly thicker than those of *Tetraloniella*. These characters together with several others which aid the recognition of this genus are described below.

The sparse scopa present in *Eucara* and *Tetralonia* is apparently an adaptation for the collection of large, spherical, spiky pollen grains such as that which occurs in certain genera of the Malvaceae. *Eucara macrognatha* has been recorded from *Gossypium* and *Hibiscus* and pollen of the types that occur in these two genera as well as that of the *Pavonia*-type were taken from the scopae of the females of this genus. One specimen of *T. macrognatha* had a little Asteraceae pollen of the *Taraxacum*-type. This is apparently exceptional among the species of *Eucara*. Malvaceae pollen of the *Gossypium, Hibiscus* and *Pavonia*-types was not found on the scopae of the females of the *Tetraloniella*.

DIAGNOSIS

Clypeus strongly protuberant, protuberance 0,8× as wide as eye, and lateral margins curved gently backwards in ventral view; ventral margin of clypeus gently concave mesally and gently convex laterally (see Fig. 2); maxillary palpus three- or four-segmented; scopa with anterior region sparsely pubescent (this region contain about 100 hairs); male antennal flagellum short, about 1,8–2,2× as long as eye; posterior tibial spur and basitarsus of hind leg usually modified.

KEY TO THE SPECIES

1. Antenna with 10 flagellar segments (female)... 2
– Antenna with 11 flagellar segments (male)... 6
2. Basal tomentum on T2–T3 black 3
– Tomentum on T2–T3 white, yellowish or orangish 4
3. Pubescence on T4–T5 mostly white.... *E. caudata*
– Pubescence on T4–T5 black..... *E. penicillata*

4. Basal region of T2–T4 clothed with pale yellowish tomentum and distal regions with short, fine, black hairs; integument of T1–T5 completely black or mostly black with narrow transparent distal margins... *E. ruficollis*
- Metasoma with T2–T4 completely clothed with yellowish to orange pubescence, these hairs tomentose basally and short and simple distally; distal regions of T1–T5 with integument yellowish to orange 5

5. Hair on hind tibia and basitarsus black .... *E. macrognatha*
- Hair on hind tibia and basitarsus yellowish-orange (specimens with yellowish-orange legs can only be identified when collected together with males) .... *E. macrognatha, E. boharti*

6. Hind leg with setation on basitarsus and posterior tibial spur unmodified ..... *E. mesotes*
- Setation on base of ventral surface of hind basitarsus forming a distinct tuft and usually with posterior hind tibial spur clearly modified 7

7. Basal tomentum on T2–T3 pale yellowish.... 8
- Basal tomentum on T2–T3 black 10

8. Posterior hind tibial spur abruptly curved (Fig. 3)..... *E. macrognatha*
- Posterior hind tibial spur straight or gently curved 9

9. Hind leg with anterior tibial spur unmodified; tuft near proximal end of hind basitarsus with curved hairs..... *E. boharti*
- Anterior hind tibial spur strongly swollen near base; hair that forms tuft on ventral surface of hind basitarsus straight .. *E. ruficollis*

10. Distal regions of T2–T5 with integument opaque and pale yellow, proximal regions black..... *E. paulyi*
- Integument of T2–T5 completely black 11

11. Pubescence on T4–T6 black..... *E. penicillata*
- Pubescence on T4–T6 partly or completely white ..... *E. caudata*

***Eucara macrognatha* (Gerstaecker),** Fig. 1–7, 23

Eucera (Tetralonia) macrognatha Gerstaecker, 1870: 349–350 (♂ holotype, MHU).

Eucera macrognatha Gerstaecker: Dalla Torre, 1896: 239.

Anthophora (Eucara) macrognatha (Gerstaecker): Friese, 1909a: 283.

Tetralonia macrognatha (Gerstaecker): Friese, 1909b: 164; Arnold, 1947: 212.

Tetralonia (Eucara) macrognatha (Gerstaecker): Alfken, 1932: 53.

Eucara macrognatha (Gerstaecker): Cockerell, 1933b: 362, 364; 1933c: 456; 1936b: 483; 1938: 370.

Anthophora (Eucara) laticeps Friese, 1905b: 241. syn. nov. (♂ holotype, MHU).

Eucara laticeps (Friese): Cockerell, 1933b: 363–364; 1933c: 456.

Anthophora (Eucara) haefligeri Friese, 1905b: 242. syn. nov. (♀ holotype, MHU).

Eucara haefligeri (Friese): Friese, 1911: 666–667; Cockerell, 1933b: 363–364; 1937: 280.

Macrocera neavei Vachal, 1910: 325. syn. nov. (♀ holotype, MRAC).

Tetralonia neavei (Vachal): Meade-Waldo, 1914: 400.

Eucara neavei (Vachal): Cockerell, 1933b: 364.

Tetralonia sheffieldi Meade-Waldo, 1914: 400–401; Cockerell, 1916: 210 (♀ holotype, BMNH).

Eucara sheffieldi (Meade-Waldo): Cockerell, 1933c: 456; 1938: 70.

Tetralonia sheffieldi var. ferrugineipes Meade-Waldo, 1914: 401–402. syn. nov. (♀ holotype, BMNH).

Eucara macrognatha ferrugineipes (Meade-Waldo): Cockerell, 1933b: 362, 364.

Tetralonia sheffieldi umbiloensis Cockerell, 1917: 40; 1933b: 363 (♀ holotype, lost).

Eucara straminea Cockerell, 1933a: 136. syn. nov. (♀ holotype, BMNH).

Cockerell (1933b) synonymized *haefligeri* and *neavei* with *laticeps*. Although I have not studied the holotype of *haefligeri,* I have studied authentically determined material of this species and am of the opinion that these three species are synonymous with *macrognatha.*

Cockerell (1933c) synonymized *sheffieldi* with *macrognatha,* but later he (Cockerell, 1938) mentioned that he was unsure if they were synonyms. Following a detailed study of this species I here confirm Cockerell's earlier opinion that *sheffieldi* is a synonym of *macrognatha.*

The holotype of *E. sheffieldi* var. *ferrugineipes* is characterized by having the mesosoma mostly black and the distal regions of the hind tibia and the entire basitarsus orange. The former of these two characters is only known to occur in *E. macrognatha* and although the latter is suggestive of *E. boharti,* orange hind legs apparently also occurs in *E. macrognatha.* I believe that because of the colour of the mesosoma and because only the distal region of the hind leg is orange, *ferrugineipes* is synonymous with *macrognatha.* The collection of a series of specimens of this colour variety that contains both sexes is needed to verify my decision.

Eucara sheffieldi umbiloensis was synonymized with *macrognatha* by Cockerell (1933b). The holotype of *umbiloensis* was originally placed in the DM, but is neither in this Museum nor the BMNH and has not been studied.

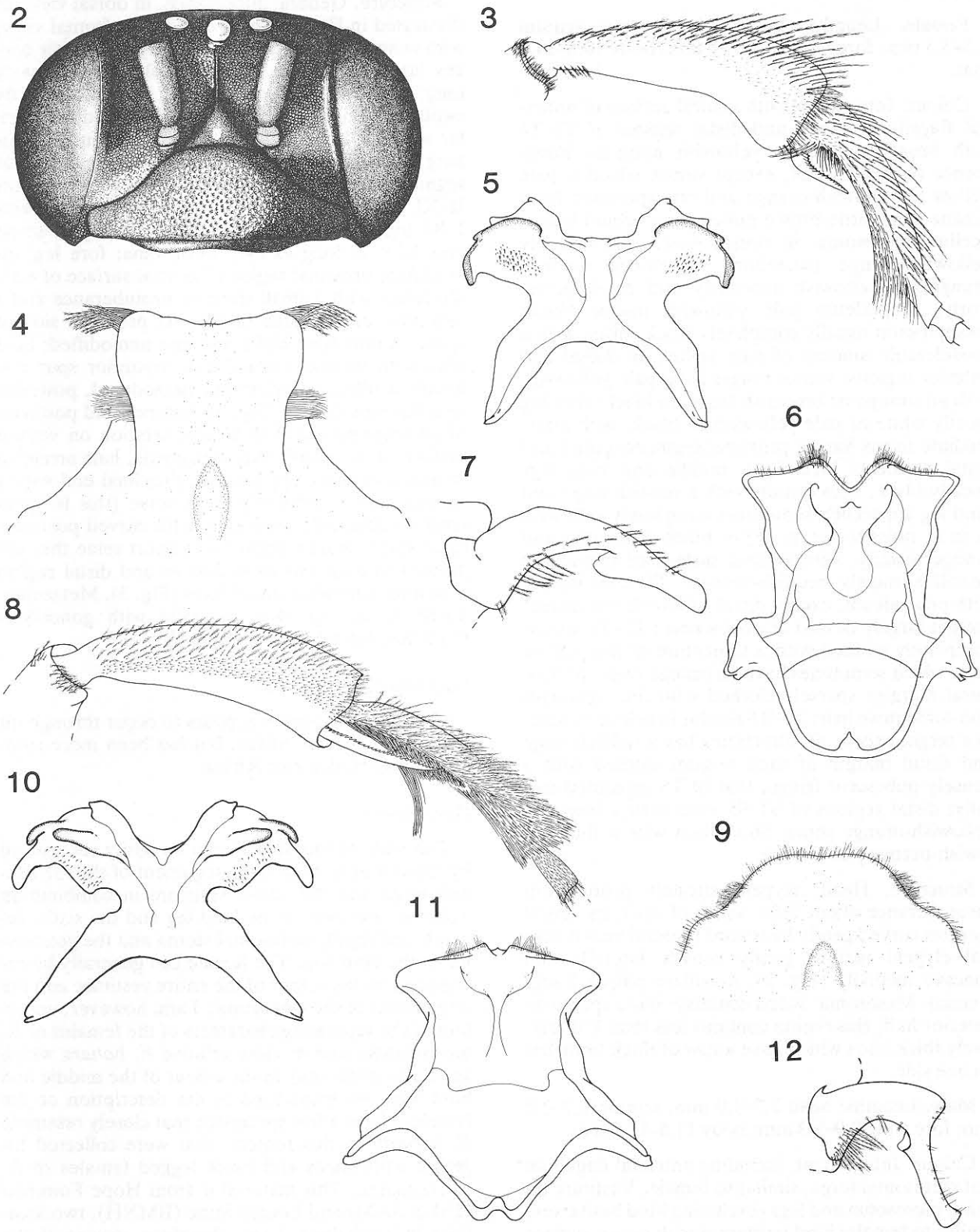

FIG. 2–12 *Eucara* spp. 2–7. *E. macrognatha*. 2. Head of female, anterior view. 3. Hind tibia and basitarsus of male, posterior view. 4–6 Ventral views of male S6–S8, respectively. 7. Gonostylus of male genitalia, lateral view. 8–12. *E. boharti*. 8. Hind tibia and basitarsus of male, posterior view. 9–11. Ventral views of male S6–S8, respectively. 12. Gonostylus of male genitalia, lateral view

The holotype of *E. straminea* is inseparable from the female of *E. macrognatha*. I am, therefore, of the opinion that *straminea* and *macrognatha* are synonyms.

Description

Female. Lengths: head 2,5–3,3 mm; scutum 2,5–3,3 mm; fore wing 8,2–10,0 mm; body 10,8–14,1 mm.

Colour. Integument with ventral surface of antennal flagellum orange and distal regions of T1–T4 with broad translucent yellowish margins. Pubescence on head white, except vertex which is pale yellow to yellowish-orange and one specimen from Ghana has a little brown pubescence behind lateral ocellus; mesosoma, in dorsal view, either mostly yellowish-orange (scutellum sometimes reddish-orange) or yellowish anteriorly and black posteriorly; propodeum pale yellowish and/or black; mesopleuron usually completely black, often with a considerable amount of pale yellow on dorsal and anterior regions; venter ranges from pale yellowish, with an orange or brownish tinge, to black; fore leg mostly white or pale yellowish to black, with intermediate forms having proximal segments pallid and distal segments melanized; middle and hind legs usually black, occasionally with a reddish tinge and hind leg apparently sometimes completely yellowish as in *E. boharti* (ref. p. 18) or black proximally and orange distally, with ventral surface of tarsus and pencillus mostly reddish-orange; T1 concolorous with propodeum, except distal yellowish translucent margin largely devoid of pubescence; T2–T4 almost completely clothed with a tomentum of fine yellow hairs which sometimes have an orange tinge, narrow distal margins sparsely clothed with fine yellowish non-tomentose hair; T5–T6 similar in colour to anterior terga, except T6 sometimes has a reddish tinge and distal margin of each tergum clothed with a densely pubescent fringe, that of T5 expanded mesally; distal regions of S1–S5 each with a fringe of yellowish-orange setae; S6 clothed with a fine yellowish-orange pubescence.

Structure. Head: clypeus strongly protuberant (protuberance about 0,8× width of eye), its lateral margins curved gently backward (ventral view); ventral clypeal margin gently convex laterally and concave medially (Fig. 2); maxillary palpus 3-segmented. Mesosoma: scopa distinctly more sparse on anterior half, this region contains less than 100 relatively thick hairs which have a row of thick branches on one side.

Male. Lengths: head 2,7–3,0 mm; scutum 2,7–2,8 mm; fore wing 8,9–9,3 mm; body 11,5–12,5 mm.

Colour. Integument, including antennal flagellum and metasomal terga, similar to female. Vestiture on head, mesosoma and legs (excluding hind basitarsus) similar to female; hind basitarsus with dorsal surface black and ventral surface orange (setae give a concave appearance) and with a tuft of orange and black hairs near proximal end; metasomal dorsum similar to female, except tomentum on T2–T5 nearly reaches distal end of each tergum, T6 with a dense distal fringe and T7 densely clothed with orange or reddish-orange hair; venter with a little yellowish-orange pubescence laterally on S1–S5; S6 with two dense tufts of laterally protuding orange-black hair on each side.

Structure. General appearance, in dorsal view, as illustrated in Fig. 1. Head: clypeus (in frontal view) with ventral margin concave mesally and gently convex laterally (cf. Fig. 2); antennal scape relatively long, about 0,4× as long as eye, and not distinctly swollen, twice as long as its maximum width; flagellar segment I not particularly short, about 0,3× as long as scape and about 0,7× as long as flagellar segment II; flagellum relatively short, with segments II–XI subequal to one another; flagellar segments I–XI together more or less 6,0× as long as scape and 2,2× as long as eye. Mesosoma: fore leg unmodified; proximal region of ventral surface of middle femur with a small spine or protuberance and a relatively dense patch of hair on proximal side of spine; middle tibia and tibial spur unmodified; hind tibia with ventral surface near posterior spur distinctly swollen, anterior spur unmodified, posterior spur strongly curved (Fig. 3); anterior and posterior tibial spurs subequal in length; setation on ventral surface of hind basitarsus diagnostic, hair arranged to give a concave appearance, proximal end with a distinct tuft of relatively short setae (this is apparently functionally associated with curved posterior tibial spur), middle region with short setae that are parallel to long axis of basitarsus and distal region with long somewhat flared hairs (Fig. 3). Metasoma: S6–S8 as in Fig. 4–6; genitalia with gonostylus branched, lateral view as in Fig. 7.

Distribution (Fig. 23)

Eucara macrognatha appears to occur throughout the greater part of Africa, but has been more commonly collected in east Africa.

Discussion

The male of this species can be easily recognized by the colour of both the integument of the metasomal terga and the entire vestiture in combination with the structure of the hind leg and the sixth, seventh and eighth metasomal sterna and the gonostylus of the genitalia. The female can generally be recognized by the colour of the entire vestiture and the integument of the metasomal. I am, however, uncertain of the separating characters of the females of *E. macrognatha* and its close relative *E. boharti* which appear to differ only in the colour of the middle and hind legs. As mentioned in the description of the female, I have a few specimens that closely resemble *E. boharti,* in this respect, that were collected together with males and black legged females of *E. macrognatha.* This material is from Hope Fountain (TM & SAM) and Lonely Mine (BMNH), two localities in Zimbabwe, I am, therefore, unsure of the identity of this material and accordingly uncertain if the colour of the legs is suitable for the separation of the females of these two species. The males of these two species can be easily separated by the structural characters mentioned above.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ holotype of *Eucera macrognatha:* 'Ost-Afrika, Mombas [KENYA], v.d. Decken, *macrognatha'*, MHU; ♂ holotype of *Anthophora laticeps*: 'Massailand [S. KENYA or N. TANZANIA], Ost-Afrika, Dr Schinz, 1913 H. Friese det', MHU; ♀ holotype *Macrocera neavei:* 'MUSÉE DU CONGO, Dr Sheffield Neave, Kayambo-Dikulwe [ZAIRE], vi.07, det. J. Vachal', MRAC. ♀ holotype of *T. sheffieldi:* 'Nyassaland, Mlanje [MALAWI], Mar. 20, 1913, S. A. Neave, *Eucera (Tetralonia) sheffieldi* det. G. Meade-Waldo', TYPE HYM. BM 17B 832, BMNH; ♀ holotype of *T. sheffieldi* var. *ferrugineipes:* 'Entebbe, Uganda, 22.8.11, C. C. Cowdey, *E. (Tetralonia) sheffieldi* var. *ferrugineipes* det. G. Meade-Waldo', B.M. TYPE HYM. 17B 831, BMNH; ♀ holotype of *Eucara straminea:* 'Transvaal, Louis Trichardt, 4–10.iv.1932, A. Mackie, det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 1277, BMNH.

ADDITIONAL MATERIAL: 54 ♀ 62 ♂: BURKINA FASO: Soumous, near Kéleso (= Bobo Dioulasso), 11.x.1979, A. Pauly, on *Hibiscus esculentus,* 4 ♂ PC. GHANA: Yapi, 1916, J. J. Simonds, 3 ♀ BMNH. CONGO: Kintele, 19.v.1978, Dr Onore, 1 ♀ IEAA; Voko Par Boko, 22.v.1976, Dr Onore, 1 ♀ IEAA. ZAIRE: Nyangwe, vii.1920, L. Ghesquière, 1 ♀ MRAC; Nyangwe, iv–v. 1918, R. Mayné, 1 ♂ MRAC; Bumbull, 1915, R. Mayné, 1 ♀ MRAC; Thysville (= Mbanza-Ngungu), vi.1915, J. Bequaert, ♀ MRAC; Demba, 19.ii.1911, Silverlock, 1 ♀ BMNH. ETHIOPIA: Maraquo, xi.1914, O. Kovacs, *Eucara macrognatha* det. J. D. Alfken, 1 ♂ BMNH. UGANDA: Semliki Plains, near S. shore of Lake Albert, 25–27.xi.1911, S.A. Neave, 2 ♀ BMNH; Eastern Mbale district, S. Mt. Elgon, 2–5.viii.1911, S. A. Neave, 1 ♂ BMNH. KENYA: Marsabit, 1912, R. J. STORDY, 1 ♀ BMNH; Kibwezi, 2–4.iv.1911, S. A. Neave, *Eucara laticeps* det. D. B. Baker 1979, 1 ♂ BMNH. TANZANIA: Old Shinyanga, 27.iv.1952, E. Barit, *Tetralonia sheffieldi* det. G. E. J. Nixon 1958 & *Eucara laticeps* det. D. B. Baker 1979, 1 ♀ BMNH. MOZAMBIQUE: Buzi River, v.1915, *T. sheffieldi,* det. British Museum 1915, 2 ♂ NCI; Valley of Kola R., Mt. Chiperone, 6.iv.1913, S. A. Neave, 1 ♀ BMNH. MALAWI: Mlanje, ii–v.1913, S. A. Neave, 4 ♀ 3 ♂ BMNH; same date plus *Eucara macrognatha* det. D. B. Baker, 1 ♀ BMNH. ZAMBIA: Chinsali, 24.ii.1954, FitzGerald, 1 ♀ BMNH. ANGOLA: Bruco, 26.ii–2.iii.1972, South African Expedition, 1 ♂ BMNH. ZIMBABWE: Lonely Mine, 1913–1915, H. Swale, 7 ♀ 6 ♂ BMNH; Hope Fountain, 7.iii.1914 & 7.iii.1915, G. Arnold, 1 ♀ 1 ♂ TM, 1♀ DM; Saw Mills, 11.ii.1924, R. H. R. Stevenson, 1 ♀ 4♂ TM; Matopos, 11.iii.1923, 1 ♂ SAM. BOTSWANA: Palapye, 4–6.iii.1934, L. & J. Ogilvie, 2 ♀ 3♂ BMNH; Chobe National Park, 16.ii.1976, R. Bohart, 1 ♂ UCD. SOUTH WEST AFRICA: 40 km N. Omaruru, 23.iii.1976, J. G. & B. L. Rozen, 8 ♀ 1 ♂AMNH; 66 km N.E. Otjiwarongo, 20.ii.1977, J. G. & B. L. Rozen, 1 ♀ 9 ♂ AMNH; 36–57 km S.E. Seeis, 29.iii.1976, J. G. & B. L. Rozen, 1 ♂ AMNH; Okosongominigo, 2017 CA, 6.iii.1979, V. B. Whitehead, 1 ♀ 1♂ SAM; Alkmar 512, near Gobabis, 22.iv.1981, V. B. Whitehead, 3 ♀ SAM. SOUTH AFRICA: TRANSVAAL: Thabina, Soutpansberg district, 8–10.xi.1905, C. Swierstra, 1 ♀ 1 ♂ TM; Woodbush village, xii.1914, C. J. Swierstra, 1 ♂ TM; Waterval-Onder, A. Ross, 1 ♂ TM; Mogol Nature Reserve, Ellisras district, 23.58S 27.45E, 19–23.xi.1979, G. L. Prinsloo, 1 ♂ NCI; Craighall Park, Johannesburg, 19.i.1985, M. Johannsmeier, 1 ♂ NCI; Rustenburg, 21.ii.1919, 1 ♂ NCI; NATAL: Mfongozi, xii.1911, W. E. Jones, *Anthophora haefligeri* det. H. Friese 1912, 1 ♂ SAM; same locality and collector, iii.1916, *Anthophora (Eucara) haefligeri* det A. J. Hesse, 1 ♂ SAM; same locality and collector, different dates, 1 ♀ 1 ♂ SAM; Weenen, xi–xii.1923, H. P. Thomasset, *Anthophora africana* det. B. Uvarov, 1 ♀ NCI; Durban, 24.iv.1908, G. F. Leigh, 1 ♀ 1 ♂ TM; Stella Bush, near Durban, 8.v.1921 & 11.iv.1920, C. N. Barker, 2 ♀ DM (2651), 1 ♂ DM 1 ♂ TM (2547); Mtunzini, 4.iv.1926, H. W. Bell-Marley, 2 ♀ 1 ♂ TM; Sania (= ? Sani Pass), 22.ii.1925, H. W. Bell-Marley, 2 ♀ 1 ♂ TM; CAPE PROVINCE: Queenstown, Berry Reservoir, 31.i.1982, V. B. Whitehead, On *Hibiscus* sp., 2 ♂ SAM; Harmonie, 2624 CD, 25.ii.1980, V. B. Whitehead, 1 ♂ SAM. TRANSKEI: Port St. John, 5–30.iv.1923, R. E. Turner, 2 ♂ BMNH.

***Eucara boharti* spec. nov.,** Fig. 8–12, 23

This new species is named for the collector of the holotype, Dr G. E. Bohart, formerly of the BBSL.

DESCRIPTION

Female. Similar to *E. macrognatha* except as follows: setation on hind tibia and basitarsus, including pencillus, orange to reddish-orange.

Male. Lengths: head 3,5 mm; scutum 2,9 mm; fore wing 9,9 mm; body 13,3 mm.

Colour. Integument similar to *E. macrognatha.* Vestiture on head white; mesosoma with pronotum, including pronotal lobe, scutum, scutellum and propodeum yellowish-white; mesopleuron and venter brownish; legs largely pale yellowish-brown with dorsal surface of middle tibia brown, dorsal surfaces of middle and hind basitarsi pale yellowish-orange and ventral surface of tarsi orange; metasoma similar to *E. macrognatha,* except S5 has a patch of dense pubescence that projects posterolaterally in middle of each half.

Structure. similar to *E. macrognatha* except as follows: antennal scape slender, almost 3,0× as long as scape and about 1,2× as long as flagellar segment II; fore and middle legs unmodified; hind tibia with region near origin of posterior spur distinctly swollen; hind tibial spurs not modified, except posterior spur relatively long, about 1,4× as long as anterior spur; hind basitarsus with a tuft of long curved hair basally (Fig. 8); S6–S8 as in Fig. 9–11; gonostylus of genitalia branched, lateral view as in Fig. 12.

DISTRIBUTION (Fig. 23)

This species is known from a few localities in Kenya and northern Tanzania.

DISCUSSION

Both sexes of this species are very similar to *E. macrognatha*. The female can only be identified by the orangish hind tibia and basitarsus. I am, however, unsure if this is a reliable diagnostic feature because I have three females from Zimbabwe that resemble *E. boharti* in this respect, but were collected together, and are presumably conspecific, with normal black legged females and males of *E. macrognatha* (see p. 13). The male of this species resembles the male of *E. macrognatha* in colour and, to a lessor extent, in structure. The most important diagnostic features being the posterior hind tibial spur and the sixth and seventh metasomal sterna.

MATERIAL EXAMINED

♂ holotype, 2 ♀ 2 ♂ paratypes: TANZANIA: Serengeti National Park head-quaters, 24.ii.1976, G. E. Bohart, 1 ♀ ♂ holotype BBSL. KENYA: Meru, 7.1943, van Someren, 1 ♀ BMNH: Masai Reserve, Narok, 21.v.1913, T. J. Anderson, 1 ♂ BMNH; Masai Reserve, 12.iii.1914, A. O. Luckman, 1 ♂ BMNH.

***Eucara paulyi* spec. nov.**, Fig. 13–17, 23

This new species is known from two males and takes its name from the collector Dr A. Pauly.

DESCRIPTION

Female. Unknown.

Male. Lengths: head 2,6 mm; scutum 2,6 mm; fore wing 8,6 mm; body 13,4 mm.

Colour. Integument with ventral surface of antennal flagellum orange; T1 black with distal region largely transparent; T2–T5 black with distal regions yellow and opaque; T6 black with distal region largely transparent. Vestiture on face pale yellowish-white; vertex pale yellow; mesosoma completely pale yellow, except venter which has region between fore and middle coxae sparsely clothed with short yellowish-orange hair and posterior region black; fore leg pale yellowish-white to yellowish-orange; middle and hind legs black, except ventral surfaces of basitarsi which are orange; metasoma with subvertical surfaces of T1 pale yellowish, horizontal surface mostly black; T2–T5 black with distal regions, where integument is pale yellow, apparently mostly yellowish (most of this pubescence has been rubbed off); T6 black with a dense yellowish-white distal band; T7 yellowish-orange; metasomal venter very sparsely clothed with black, except S5 which has a dense wedge-shaped tuft of black hair near middle of each side.

Structure. Similar to *E. macrognatha* except as follows: ventral margin of clypeus less pronounced than in *E. macrognatha;* middle femur with a dense patch of black pubescence near base of ventral surface; hind leg with region near point of insertion of posterior spur strongly swollen; tibial spurs unmodified and of similar length; basitarsus with a small tuft of orange setae near proximal end of ventral surface (Fig. 13), this tuft is not as well developed as in *E. macrognatha;* S6–S8 as in Fig. 14–16; gonostylus of genitalia branched, and in lateral view curved with distal end projecting downwards Fig. 17.

DISTRIBUTION (Fig. 23)

This species is known only from the type locality, which is in Burkina Faso.

DISCUSSION

The male of *E. paulyi* is similar in colour and structure to the male of *E. macrognatha*. But it can be easily identified by the opaque distal bands of the metasomal terga, the structure of the hind tibial spurs, the setation on the ventral surface of the hind basitarsus, the structure of the last four metasomal sterna and the gonostylus of the genitalia. The female is unknown.

MATERIAL EXAMINED

♂ holotype (in PC), 1 ♂ paratype (in NCI): BURKINA FASO: Mare-aux-Hippopotames, 3.x.1979, A Pauly.

***Eucara caudata* (Friese)**, Fig. 18–22, 36

Tetralonia caudata Friese, 1905a: 20–23 (♀ lectotype, MHU).

Anthophora (Eucara) piligera Friese, 1905b: 241. syn. nov. (♀ holotype, MHU).

Eucara piligera (Friese): Cockerell, 1933b: 363.

Friese (1905b), in the original description of *E. piligera,* suggested that the male he described as *E. penicillata* may be synonymous with *piligera*. This suggestion was refuted by Cockerell (1933b). The study of the lectotype of *E. caudata* (here designated) and the holotypes of *E. piligera* and *E. penicillata* (all in MHU) revealed *E. caudata* and *E. piligera* to be conspecific and *E. penicillata* to be a distinct species. The male of *E. caudata* is described here for the first time.

DESCRIPTION

Female. Lengths: head 2,8–3,1 mm; scutum 2,7–3,0 mm; fore wing 9,2–9,9 mm; body 11,6–13,3 mm.

Colour. Integument almost completely black, ventral surface of antennal flagellum mostly orange. Vestiture on head mostly white, upper region of face and vertex often partly orange and occasionally with a few scattered black hairs, especially between lateral ocelli; mesosomal dorsum, including pronotal lobe, tegula and region behind wings orange; propodeum pale yellowish-orange; mesopleuron ranges from orange through a mixture of orange (usually on anterior region) and black (on posterior region) to

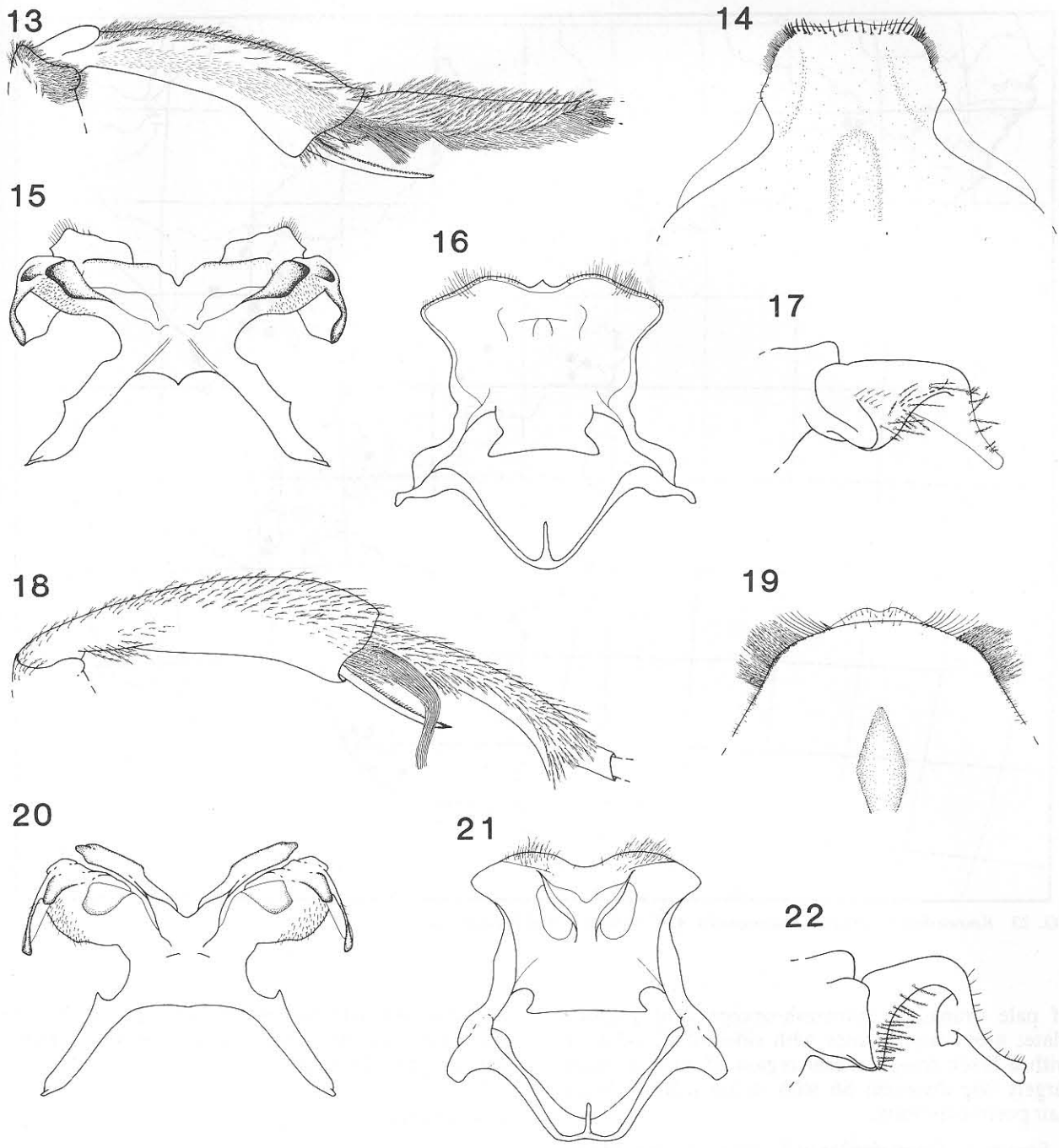

FIG. 13–22 Eucara spp. 13–17. *E. paulyi.* 13. Hind tibia and basitarsus of male, posterior view, 14–16. ventral views of male S6–S8, respectively. 17. Gonostylus of genitalia, lateral view. 18–22. *E. caudata.* 18. Hind tibia and basitarsus of male, posterior view. 19–21. Ventral views of male S6–S8, respectively. 22. Gonostylus of genitalia, lateral view

completely black; mesosomal venter with a mixture of pale yellowish-orange or yellowish-brown (usually anteriorly) and black (posteriorly); legs black, except posterior regions of fore femur and tibia white and ventral surfaces of all basitarsi reddish-orange; metasoma with subvertical surface of T1 pale yellowish-orange, horizontal region clothed with short fine black hairs, except anterior region where a few long yellowish-orange hairs occur; T2–T3 black; T4 mostly white, with a little black basally, this is only visible when metasoma is extended; T5 with basal region black and distal region white, except for middle of distal margin which is black; T6 black; metasomal venter black, sometimes with a reddish-orange tinge distally and occasionally with a little white posterolaterally on S5.

Structure similar to *E. macrognatha.*

Male. Lengths: head 3,0–3,2 mm; scutum 2,6–2,7 mm; fore wing 9,1–9,5 mm; body 12,5–15,1 mm.

Colour. Similar to female except as follows: pubescence on vertex devoid of any black hairs; mesopleuron orange dorsally and black ventrally and mesosomal venter black; T4 mostly black, distal region has a few white tomentose hairs intermixed with black; T5–T6 almost completely white; T7 ranges from white laterally through various shades

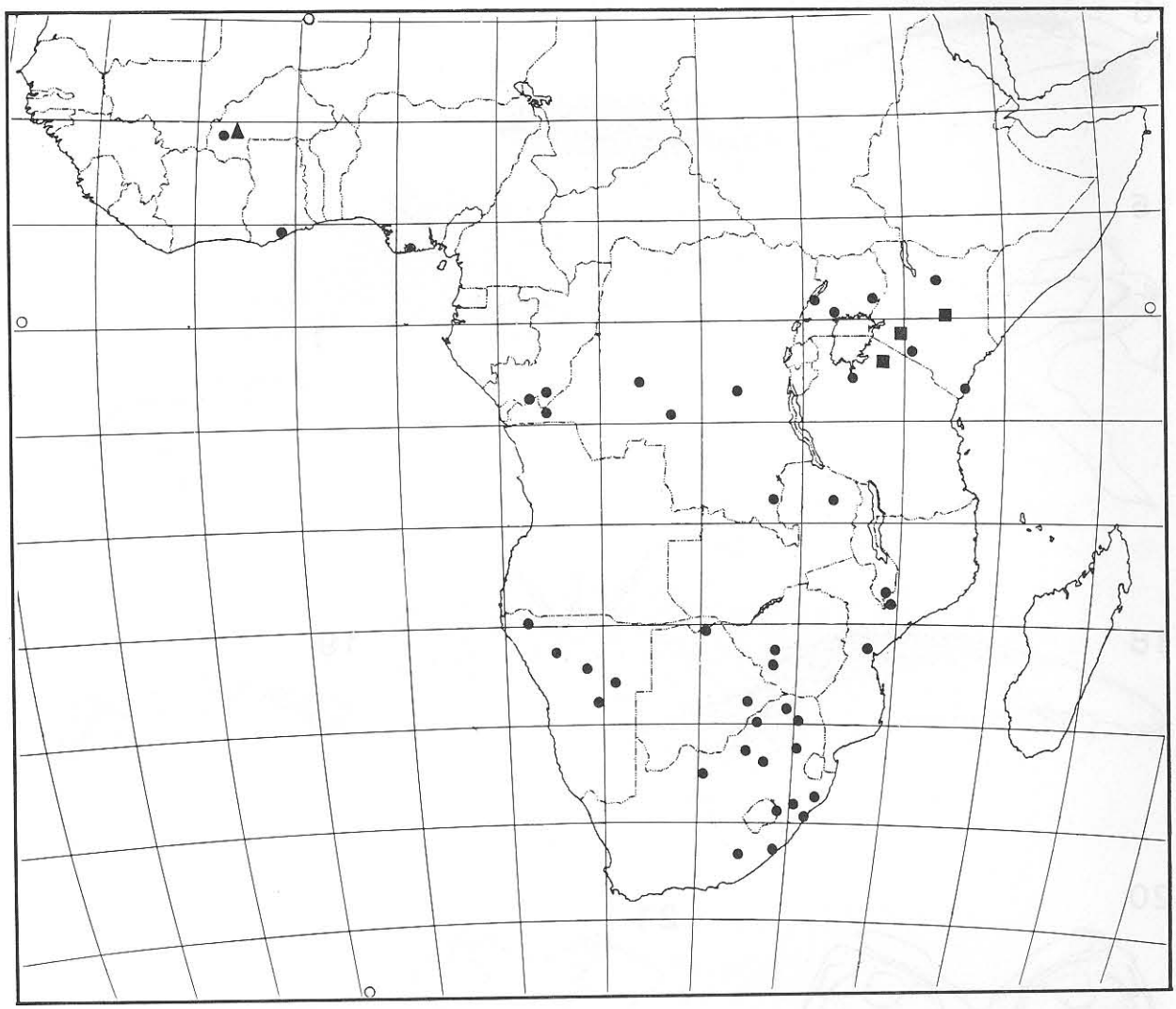

FIG. 23 Known distribution of *E. macrognatha*, ●, *E. boharti*, ■, and *E. paulyi*, ▲

of pale orange to brownish-orange near pygidial plate; mesosomal venter with sides of S2–S5 each with a black fringe, mesal region of each sternum largely impubescent; S6 with dense tufts of black hair posterolaterally.

Structure. Head similar to *E. macrognatha*. Mesosoma: fore leg unmodified; ventral surface of middle femur with a short distinct carina which has a row of short setae on its crest; middle tibia distinctly elongate near origin of spur (this is particularly clear in dorsal view); hind tibia with distal region of ventral surface swollen, anterior spur unmodified, posterior spur relatively long (1,4× as long as anterior spur) and gently curved near distal end; hind basitarsus with a distinct tuft of long curved setae near proximal end of ventral surface (Fig. 18). Metasoma: S6–S8 as illustrated in Fig. 19–21; gonostylus of genitalia branched, in lateral view as in Fig. 22.

DISTRIBUTION (Fig. 36)

Eucara caudata is known from several specimens taken in five different east African countries, namely Kenya, Tanzania, Mozambique, Malawi and Zimbabwe. It is also known from a single female collected in northern Nigeria, which suggests that the distribution of this species incorporates the greater part of tropical Africa.

DISCUSSION

This species can be separated from the rest of the the genus by the colour of the metasoma. The most reliable diagnostic features, however, occur in the male, they are the hind leg, the last three metasomal sterna and the gonostylus of the genitalia.

MATERIAL EXAMINED

TYPE MATERIAL: ♀ lectotype of *T. caudata:* 'Sansibar [TANZANIA], 12.vii.1898, 1904 H. Friese det.', MHU; ♀ holotype of *T. piligera:* 'Br.O. Afr. Ikutha [KENYA], 1898, 1904 H. Friese det', MHU.

ADDITIONAL MATERIAL: 13 ♀ 15 ♂ with the following data: NIGERIA: Zaria, Samaru, 30.ix.1965, *Eucara piligera* det. D. B. Baker, 1 ♀ BMNH. KENYA: Kibiwezi, 2–4.iv.1911. S. A. Neave, 1 ♀ 1 ♂ BMNH; Nairobi, x.1919, Loverige, 1 ♀ MCZ. TANZANIA: Zanzibar, S. Hildebrandt,

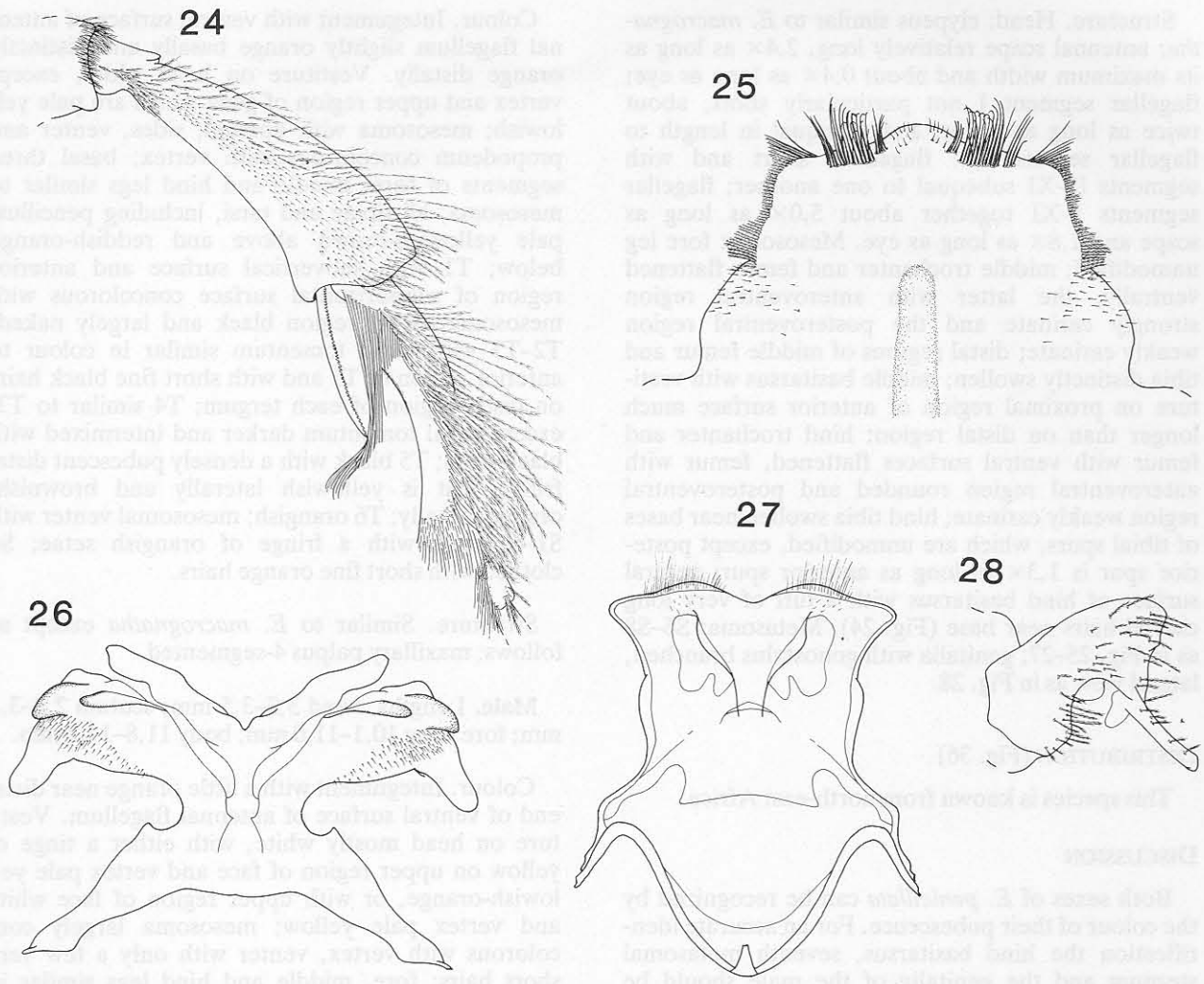

FIG. 24–28 *E. penicillata*. 24. Hind tibia and basitarsus of male, posterior view. 25–27. Ventral views of male S6–S8, respectively. 28. Gonostylus of genitalia, lateral view

1 ♀ paralectotype MHU. MOZAMBIQUE: Valley of Kola River near Mt. Chiperone, 7.iv.1913, S.A. Neave, 1 ♂ BMNH. MALAWI: Blantyre, 1914, J. B. Davey, 1 ♀ 1 ♂ BMNH; between Ft. Mangoche & Chikaja Boma, 20–25.iii.1910, S.A. Neave, 1 ♂ BMNH; Mlanje, 1913, S. A. Neave, 8 ♀ 10 ♂ BMNH. ZIMBABWE: Hillside, Salisbury (= Harare), iii.1928, H. S. Leeson, 1 ♀ BMNH; Salisbury, A. Watsham, 1 ♂ NCI.

***Eucara penicillata* (Friese),** Fig. 24–28, 36

Anthophora (Eucara) penicillata Friese, 1905b: 241–242 (♂ holotype, MHU).

Eucara penicillata (Friese): Cockerell, 1933b: 363; 1938: 369–370.

DESCRIPTION

Female. Similar to *E. macrognatha* except as follows: ventral surface of antennal flagellum completely black or partly orange; occasionally narrow distal regions of T1–T3 translucent but these areas are not distinctly pale yellow as in *E. macrognatha;* vestiture on face pale yellowish-white to yellowish-orange or brown (often with a mixture of white and orangish or brownish hairs); vertex mostly orange and/or brown; gena whitish; mesosoma with dorsum, pronotal lobe and propodeum orange or with orange and brown patches; mesopleuron brown or black; mesosomal venter pale brownish-white to brownish-orange; legs black or brown with ventral surfaces of basitarsi orange, pencillus brownish-orange; metasoma black, except T1 which is mostly concolorous with propodeum and T5 sometimes with a little pale tomentum (whitish or orange) laterally.

Male. Lengths: head 3,5–3,9 mm; scutum 3,0–3,2 mm; fore wing 10,6–11,5 mm; body 13,8–15,8 mm.

Colour. Integument with ventral surface of antennal flagellum sometimes brownish-orange. Pubescence on head mainly monocolorous, ranging from pale yellowish to orange; mesosoma with pronotum, including pronotal lobe, scutum, scutellum and anterolateral region of propodeum pale yellowish-orange to orange, sometimes with a tinge of brown; remainder of mesosoma, including lateral regions of propodeum black, except for a few orange hairs on dorsal region of mesopleuron; legs largely black, ventral surfaces of basitarsi orange; metasoma black, except T1 mostly concolorous with anterior region of propodeum.

Structure. Head: clypeus similar to *E. macrognatha;* antennal scape relatively long, 2,4× as long as its maximum width and about 0,4× as long as eye; flagellar segment I not particularly short, about twice as long as scape, and subequal in length to flagellar segment II; flagellum short and with segments II–XI subequal to one another; flagellar segments I–XI together about 5,0× as long as scape and 1,8× as long as eye. Mesosoma: fore leg unmodified; middle trochanter and femur flattened ventrally, the latter with anteroventral region strongly carinate and the posteroventral region weakly carinate; distal regions of middle femur and tibia distinctly swollen; middle basitarsus with vestiture on proximal region of anterior surface much longer than on distal region; hind trochanter and femur with ventral surfaces flattened, femur with anteroventral region rounded and posteroventral region weakly carinate; hind tibia swollen near bases of tibial spurs, which are unmodified, except posterior spur is 1,3× as long as anterior spur; ventral surface of hind basitarsus with a tuft of very long curved hairs near base (Fig. 24). Metasoma: S6–S8 as in Fig. 25–27; genitalia with gonostylus branched, lateral view as in Fig. 28.

DISTRIBUTION (Fig. 36)

This species is known from north-east Africa.

DISCUSSION

Both sexes of *E. penicillata* can be recognized by the colour of their pubescence. For an accurate identification the hind basitarsus, seventh metasomal sternum and the genitalia of the male should be examined.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ holotype: 'Usambara [TANZANIA], Nguelo, 1904 H. Friese det.', MHU.

ADDITIONAL MATERIAL: 7 ♀ 8 ♂: ETHIOPIA: Higo Samula 30.x.1911, R. J. Stordy, *E. penicillata* det. ? T. D. A. Cockerell & D. B. Baker, 2 ♀ BMNH. KENYA: Nyeri (S.), x.1948, van Someren, *E. penicillata* det. D. B. Baker, 1 ♂ BMNH; Nairobi, x.1919, Loveridge, 1 ♂ MCZ; Mombasa, A. J. Cholmley, 1 ♂ BMNH; Meru, vii.1943, van Someren, 3 ♀ 3 ♂ BMNH; Rarai, vii.1938, van Someren, 1 ♂ BMNH.

***Eucara ruficollis* Friese,** Fig. 29–34, 36

Eucara ruficollis Friese, 1911: 667 (♂ lectotype, SAM).

I have only studied the type specimen from Kentani, which I here designate as the lectotype of this species.

DESCRIPTION

Female. Lengths: head 3,1 mm; scutum 3,0 mm; fore wing 9,9 mm; body 12,2 mm.

Colour. Integument with ventral surface of antennal flagellum slightly orange basally and distinctly orange distally. Vestiture on head white, except vertex and upper region of gena which are pale yellowish; mesosoma with dorsum, sides, venter and propodeum concolorous with vertex; basal three segments of fore, middle and hind legs similar to mesosoma; all tibiae and tarsi, including pencillus, pale yellowish-brown above and reddish-orange below; T1 with subvertical surface and anterior region of subhorizontal surface concolorous with mesosoma, distal region black and largely naked; T2–T3 with basal tomentum similar in colour to anterior region of T1 and with short fine black hairs on distal region of each tergum; T4 similar to T3, except basal tomentum darker and intermixed with black hairs; T5 black with a densely pubescent distal fringe that is yellowish laterally and brownish-orange mesally; T6 orangish; mesosomal venter with S1–S5 each with a fringe of orangish setae; S6 clothed with short fine orange hairs.

Structure. Similar to *E. macrognatha* except as follows: maxillary palpus 4-segmented.

Male. Lengths: head 3,3–3,5 mm; scutum 2,9–3,1 mm; fore wing 10,1–11,0 mm; body 11,8–14,1 mm.

Colour. Integument with a little orange near distal end of ventral surface of antennal flagellum. Vestiture on head mostly white, with either a tinge of yellow on upper region of face and vertex pale yellowish-orange, or with upper region of face white and vertex pale yellow; mesosoma largely concolorous with vertex, venter with only a few very short hairs; fore, middle and hind legs similar in colour to mesosoma; basal region of T1–T2 more or less concolorous with mesosomal dorsum; distal region of T1 mostly naked and this region of T2 sparsely clothed with short, fine, black hairs; occasionally T3 and very occasionally T4 similar in colour to T1–T2, otherwise T3–T6 black with a little yellowish or orangish pubescence laterally, and distal fringe of T6 sometimes has an orange tinge; T7 reddish-orange; metasomal venter largely impubescent, each tergum has a little orange laterally, except S6 which has a dense fringe of reddish-black hair on each side.

Structure. Head: clypeus and antenna similar to *E. macrognatha.* Mesosoma: fore leg unmodified; middle femur with a short distinct carina on ventral surface (Fig. 29); middle tibia with point of insertion of midtibial spur distinctly elongate and spur distinctly thickened and with distal end rounded (Fig. 29); hind femur with a distinct tubercle on ventral surface and hind tibia with distal end of ventral surface distinctly swollen (Fig. 30); anterior hind tibial spur distinctly swollen near base, and posterior spur relatively thin and sickle-shaped (Fig. 30); posterior spur 1,5× as long as anterior spur; hind basitarsus with a tuft of hairs near base of ventral surface which is either straight or slightly curved (Fig. 30). Metasoma: S6–S8 as illustrated (Fig. 31–33); genitialia with gonostylus unbranched, but curved in lateral view (Fig. 34).

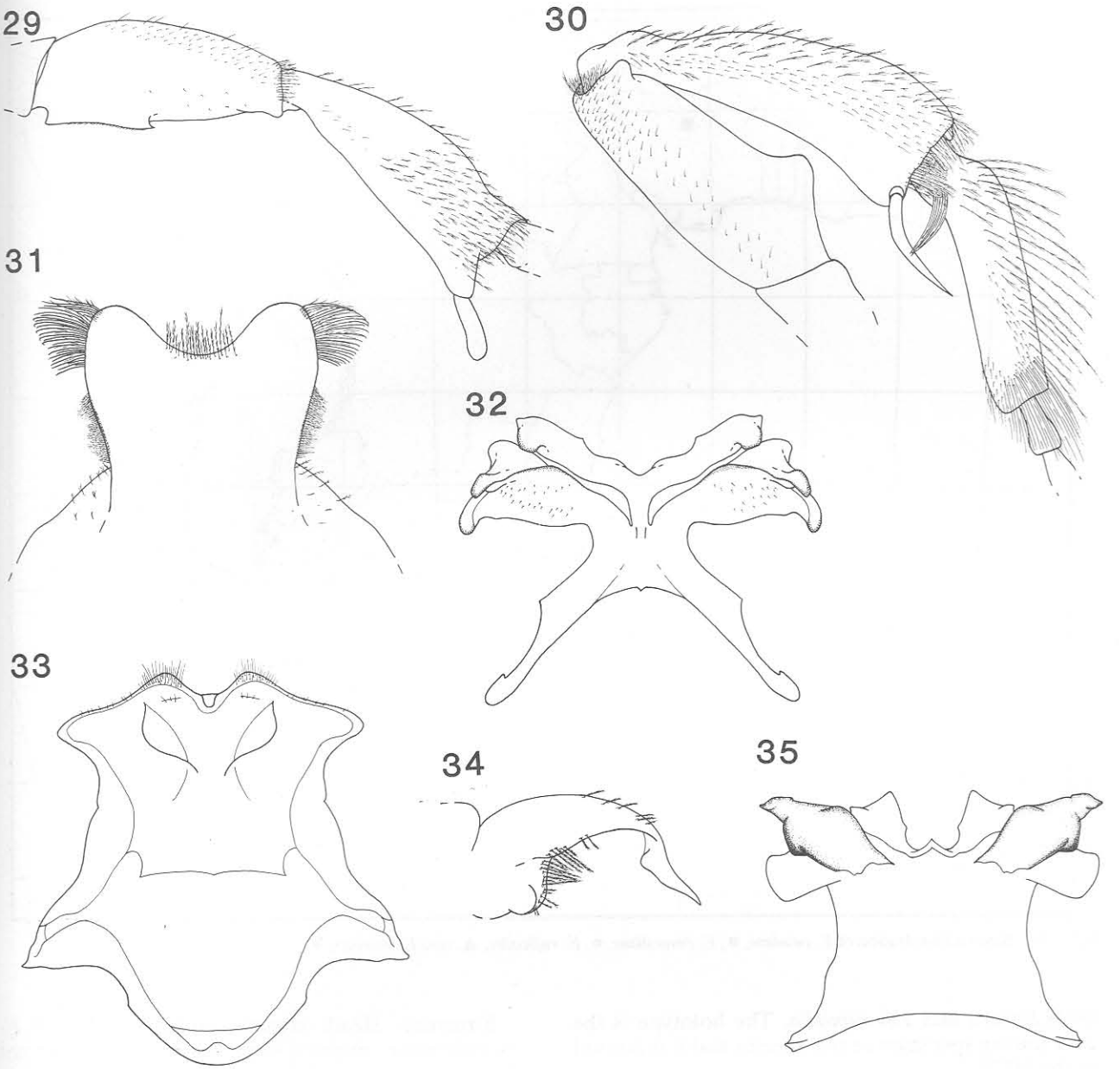

FIG. 29–35 *Eucara* spp. 29–34. *E. ruficollis*. 29. Middle tibia and basitarsus of male, anterior view. 30. Hind tibia and basitarsus of male, posterior view. 31–33. Ventral views of male S6–S8, respectively. 34. Gonostylus of genitalia, lateral view. 35. *E. mesotes*, ventral view of S7

DISTRIBUTION (Fig. 36)

This species is known from only one female and several males that were taken in the south-eastern region of Africa.

DISCUSSION

The female of *E. ruficollis* can be easily separated from the other known females of this genus by the colour of the integument and the pubescence. The most useful diagnostic characters of the male are the structure of the middle and hind legs and the structure of the last three metasomal sterna.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ lectotype: 'TRANSKEI, Kentani, 1899, *Eucara ruficollis* 1910 H. Friese det.', SAM.

ADDITIONAL MATERIAL: 1 ♀ 17 ♂: SOUTH AFRICA: TRANSVAAL: Entabeni Forest Reserve, Soutpansberg, 23.00S 30.16E, 3–7.xi.1980, M. W. Mansell, 4 ♂ NCI; De Kuilen, Lydenburg district, 25.10S 30.32E, 12.ii.1981, C. G. Moolman & W. Harrop, 6 ♂ NCI; Lydenburg, 9.xii.1910, C. Hardesburg, 1 ♀ TM; ORANGE FREE STATE: Bethlehem, 28.15S 28.19E, 25.ii.1980, S. J. van Tonder, 1 ♂ NCI. LESOTHO: Bushmanland, Likhoele, Dieterling, *Anthophora (Eucara) ruficollis* det. A. J. Hesse, 1 ♂ SAM; Mamathes, 5.iv.1947, C. Jacot-Guillarmod, 1 ♂ AM; Tebeteberg Mill, Mamathes, 1.i.1954, C. Jacot-Guillarmod, 1 ♂ AM; Mokhotlong, 24.i.1955, L. Bevis, 3 ♂ AM.

***Eucara mesotes* spec nov.**, Fig. 35–36

Eucara mesotes is here described as new and has been named *mesotes* because it shares characters of

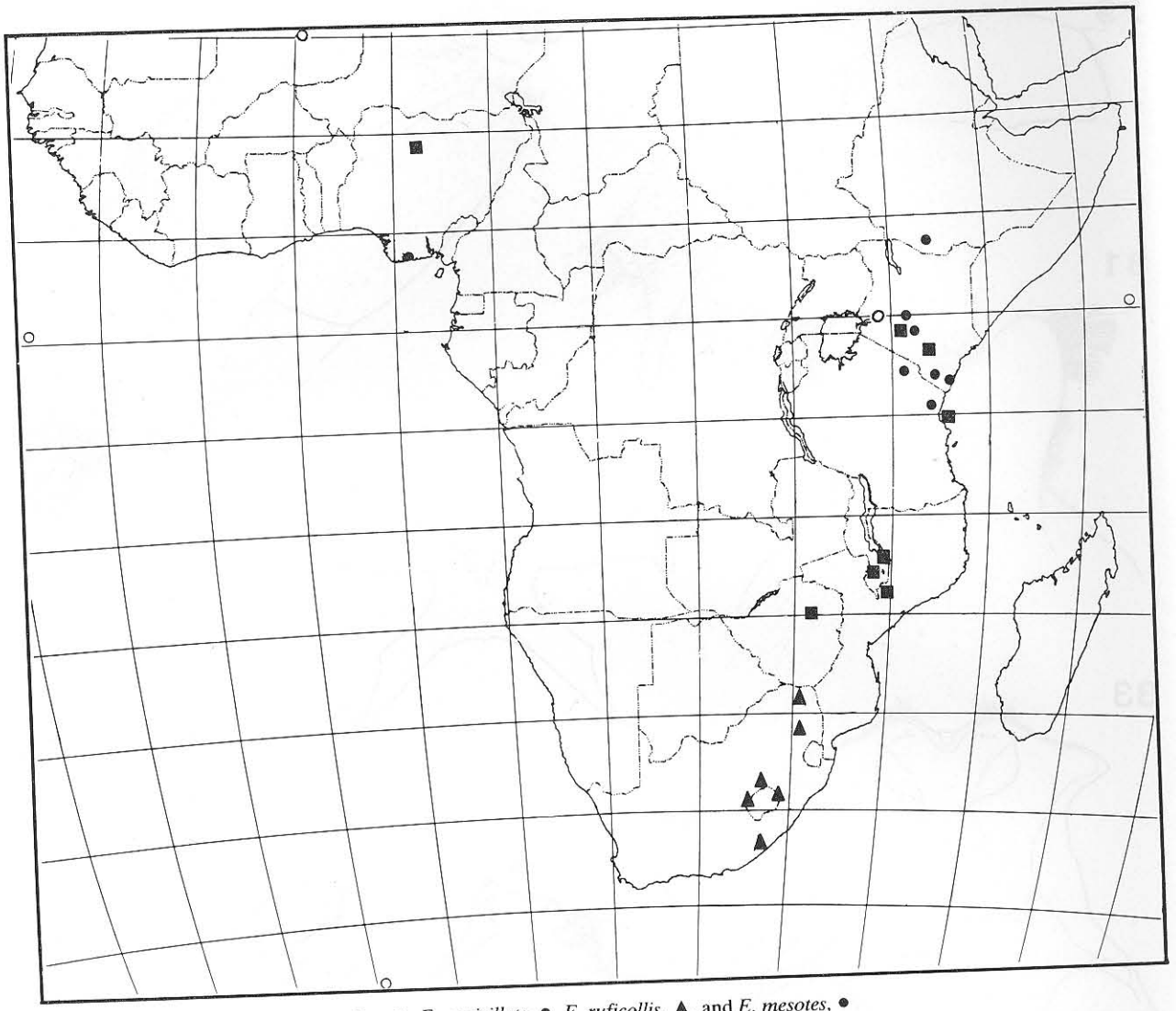

FIG. 36 Known distribution of *E. caudata*, ■, *E. penicillata*, ●, *E. ruficollis*, ▲, and *E. mesotes*, ●

both *Eucara* and *Tetraloniella*. The holotype is the only known specimen of this species and it is housed in the MCZ.

DESCRIPTION

Female. Unknown.

Male. Lengths: head 3,0 mm; scutum 2,7 mm; fore wing 9,2 mm; body 12,2 mm.

Colour. Integument without any distinct markings. Pubescence on head white, except vertex which is yellowish-orange; mesosomal dorsum yellowish-orange; upper region of mesopleuron and propodeum very pale yellowish; lower region of mesopleuron white; venter white laterally and brownish-black mesally; fore leg white with ventral surface of tarsus orange; middle and hind legs black with ventral surfaces of tarsi reddish-orange; metasoma with T1 pale yellowish with a broad black distal margin; T2–T3 black; T4 black proximally, distal region largely clothed with a mixture of black and white tomentose hair, except narrow distal margin which is black; T5–T7 completely clothed with white tomentum; metasomal venter black, except for a little white laterally on S5.

Structure. Head: clypeus similar to that of *E. macrognatha;* antennal scape relatively long and not distinctly swollen, 2,7× as long as its maximum width and 0,4× as long as eye; flagellar segment I not particularly short, about 0,5× as long as scape, and subequal in length to segment II; flagellum short, all segments subequal in length, and entire flagellum 5,5× as long as scape and twice as long as eye; maxillary palpus 4-segmented. Mesosoma: fore, middle and hind legs unmodified. Metasoma: S6 and S8 similar to that of *T. junodi* (cf. Fig. 52, 54); S7 as in Fig. 35; gonostylus of genitalia simple as in *T. junodi* (cf. Fig. 55–56).

DISTRIBUTION (Fig. 36)

This species is only known from Kisii in Kenya.

DISCUSSION

The male of this species can be easily identified by its colour, the structure of the clypeus and the absence of any modification of the legs.

The colour and shape of the face are indicative of *Eucara*. But, the hind leg of *E. mesotes* is not modified, the sixth metasomal sternum is only slightly

modified and the gonostylus of the genitalia is simple, as in many species of *Tetraloniella*. I am, therefore, of the opinion that this species is intermediate between *Eucara* and *Tetraloniella*, but as the structure of the clypeus resembles that of *Eucara* I have described it in this genus.

MATERIAL EXAMINED

♂ holotype: 'E. Africa, Kisii [KENYA], Loveridge, July', MCZ.

VI. THE GENUS *TETRALONIA* SPINOLA

Tetralonia Spinola

Macrocera Latreille, 1810: 339, 439 (nec *Macrocera* Meigen, 1803).

Tetralonia Spinola, 1838: 538; Sandhouse, 1943: 566, 603 (replacement name for *Macrocera* Meigen).

Eucera (Tetralonia) Spinola: Gerstaecker, 1870: 349–350.

Type species: *Apis malvae* Rossi, by monotypy (Sandhouse, 1943).

Tetralonia has been given generic status by all authors in articles on this genus in the Afrotropical region, except Gerstaecker (1870) who referred to *Tetralonia* as a subgenus of *Eucera* in the original description of *Eucara macrognatha*.

The genus *Tetralonia* contains five Afrotropical species: *Te. nigropilosa, Te. labrosa, Te. fraterna, Te. cinctula* and *Te. obscuriceps*. In this genus the scopa is relatively sparse, similar to that of Eucara, the ventral margin of the clypeus is gently, and evenly concave and the hind leg of the male is never modified as in *Eucara*.

Both sexes of *Te. nigropilosa* and *Te. fraterna*, and the male of *Te labrosa* (the female of *Te. labrosa* is unknown) are very similar in structure, but differ in colour of their pubescence. Their apparent partly sympatric distributions suggest that they are distinct species. The identity of *Te. cinctula* and *Te. obscuriceps* is based primarily on the structure of the sixth and seventh metasomal sterna of the males. There are no apparent structural differences by which the females of these two species can be identified and colour does not appear to be a reliable diagnostic feature. I have, therefore, only included females that can be positively identified. Most of these females form part of series that contain males. This has resulted in the omission of several female specimens, including the type series of *Te. trichardti* and the holotype of *Te. obscuripes*, that cannot be positively identified.

As mentioned above, the scopa in this genus resemble that of *Eucara* very closely and they were only found to have pollen of the *Hibiscus*-type. Several male specimens of *Te. nigropilosa* have, however, been collected on *Ipomoea* spp. (family Convolvulaceae), which also has relatively large, spherical, spiky pollen grains.

DIAGNOSIS

Clypeus strongly protuberant, protuberance 0,8× as wide as eye, and with lateral margins curved strongly backwards in ventral view; ventral margin of the clypeus gently and evenly concave (see Fig. 37); maxillary palpus four- or five-segmented; scopa with anterior region relatively sparsely pubescent (this region contain about 100 hairs), the hairs being distinctly thicker than those of *Tetraloniella* with a row of fairly thick branches on one side; antennal flagellum of male relatively short, 1,8–2,2× as long as eye; posterior tibial spur and basitarsus of male hind leg never modified.

KEY TO THE SPECIES OF *TETRALONIA*

1. Antennal flagellum 10-segmented (female) 2
– Antennal flagellum 11-segmented (male) 3
2. Pubescence on mesosoma usually largely black or brown, dorsum sometimes orangish with a little brown in centre and pleuron sometimes with a little white anterodorsally (scopa black) ..... *Te. nigropilosa*
– Mesoma largely white to orange, if with a little black or brown pubescence this is confined to scutum and scutellum (scopa orange to black)..... ..... *Te. fraterna, Te. cinctula, Te. obscuriceps*
3. Gonostylus of genitalia branched (Fig. 48–49)..... *Te. obscuriceps*
– Gonostylus simple (Fig. 41) 4
4. Posterolateral region of S7 with a small tubercle that projects more or less anteriorly (Fig. 39) 5
– Posterolateral region of S6 devoid of a tubercle as described above (Fig. 44)..... ..... *Te. cinctula*
5. Mesopleuron with at least a little black or brown; scutum generally orange anteriorly and laterally, and black or brown in centre; scutellum mostly black ..... *Te. nigropilosa*
– Mesopleuron white to orange; scutum either orange or mostly white with a little brown; scutellum orangish or brown 6
6. Mesoscutum mostly orangish..... *Te. fraterna*
– Mesoscutum white with a H-shaped brown area ..... *Te. labrosa*

***Tetralonia nigropilosa* Friese,** Fig. 37–41, 50

Tetralonia nigropilosa Friese, 1911: 658; Cockerell, 1916: 210; 1920b: 303 (♂ lectotype, SAM).

Tetralonia nigropilosa var. *nigrosellata* Cockerell, 1920b: 303. syn. nov. (♂ holotype, BMNH).

The male syntype that is housed in the SAM is designated here as the lectotype of this species.

Although the holotype of *Te. nigropilosa* var. *nigrosellata* differs a little in colour from the lectotype of *Te. nigropilosa*, it is in my opinion synonymous with *nigropilosa*.

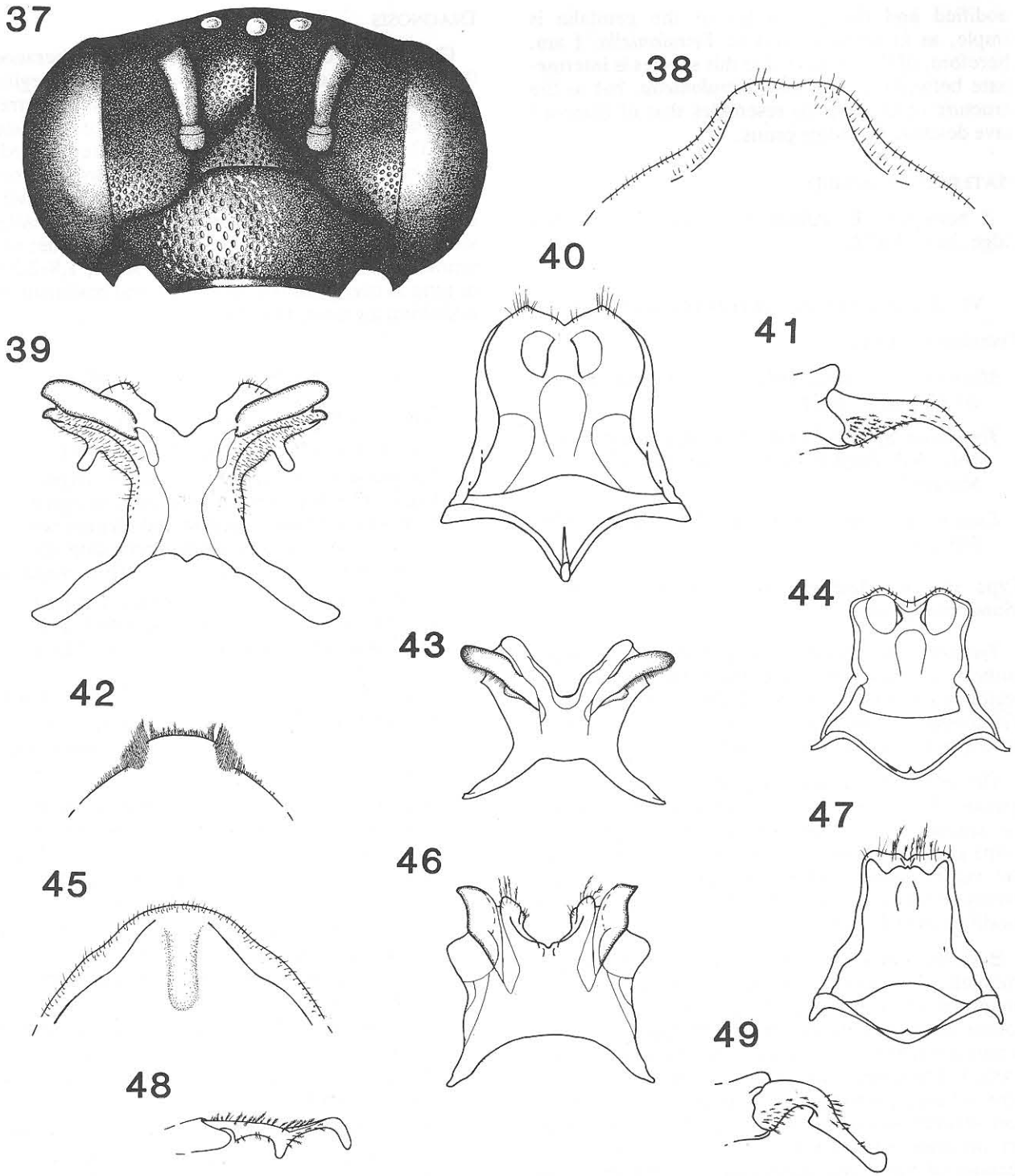

FIG. 37–49 *Tetralonia* spp. 37–41. *Te. nigropilosa*. 37. Head of female, frontal view. 38–40. Ventral views of male S6–S8, respectively. 41. Gonostylus of genitalia, lateral view. 42–44. *Te. cinctula*, ventral views of male S6–S8, respectively. 45–49. *Te. obscuriceps*. 45–47. Ventral views of male S6–S8, respectively. 48–49. Dorsal and lateral views of gonostylus of male genitalia, respectively

DESCRIPTION

Female. Lengths: head 2,7–3,0 mm; scutum 2,5–3,0 mm; fore wing 8,5–9,0 mm; body 11,5–13,0 mm.

Colour. Integument with a little orange on ventral surface of antennal flagellum. Pubescence on head white, except upper region of face and anterior region of vertex which are brownish (posterior region of vertex white) and distal region of mandible which is orange; mesoscutum largely pale brownish-orange, central region often brown; scutellum mostly brown or brownish-orange with a little pale yellowish-orange on lateral and posterior regions (when viewed with naked eye mesosomal dorsum appears brownish-orange); pleural region of mesosoma generally with varying amounts of white, brown and black, and with posterior region of pro-

notal lobe and region behind wings orangish; propodeum largely yellowish-white; mesosomal venter generally brown or black; fore coxa, trochanter, femur and posterior region of tibia white; dorsal surface of fore tibia black, except for a little orange near distal end; ventral surface of fore tarsus reddish-orange; middle and hind legs black, except for a reddish-orange tinge on ventral surface of tarsi and pencillus orange or reddish-orange with a black or blackish-orange tinge distally; T1 concolorous with propodeum, except for broad black distal margin which is sparsely clothed with short fine black hairs; T2 with basal and lateral regions densely clothed with a tomentum of short white pubescence and with distal margin black; T3–T4 similar to T2, except basal region of tomentum is often black (this region of tomentum is only visible in specimens with metasoma fully expanded); T5 either completely black or black with a subapical white band; T6 black; metasomal venter brown or black.

Structure. Head: clypeus strongly protuberant, protuberance 0,8× as wide as eye, and with lateral regions curved strongly backward in ventral view; ventral clypeal margin evenly and gently concave (Fig. 37); maxillary palpus 4- or 5-segmented.

Male. Lengths: head 2,6–2,9 mm; scutum 2,3–2,7 mm; fore wing 7,9–8,9 mm; body 9,8–12,0 mm.

Colour. Integument devoid of any distinct markings. Vestiture similar to female except as follows: fore tibia and dorsal surface of fore basitarsus often largely whitish (distal end of fore tibia devoid of an orange area); dorsal surface of middle tibia and basitarsus and hind tibia black, brown and/or whitish (hind leg devoid of scopa and pencillus which occur in female); white tomentum on T2–T4 much more sparse than in female and usually intermixed with black, occasionally largely replaced with black; T5 black; T6 either completely black or black with an apical white band; T7 black to blackish-orange; sterna with relatively dense lateral fringes of black hair.

Structure. Head: shape of clypeus similar to female; antennal scape relatively long, about 0,35× as long as eye, and not distinctly thickened, more or less 2,5× as long as its maximum width; flagellar segment I relatively long, more or less 0,5× as long as scape and about 0,8× as long as flagellar segment II; flagellum short, segments I–XI about 6,0× as long as scape and twice as long as eye. Mesosoma: legs without any distinct modifications. Metasoma: S6 with a posterolateral carina as in Fig. 38; S7–S8 as in Fig. 39–40; genitalia with gonostylus simple (Fig. 41).

DISTRIBUTION (Fig. 50)

Tetralonia nigropilosa is well known from the eastern region of southern Africa and is recorded here from the Ivory Coast in West Africa. I, therefore, anticipate that further collecting will reveal the distribution of this species to be continuous from west Africa through central Africa to southern Africa.

DISCUSSION

Both sexes of *Te. nigropilosa* can be recognized by the colour of their vestiture. In the male the structure of the sixth and seventh metasomal sterna and the gonostylus of the genitalia are useful for the separation of the male of this species from those of *Te. cinctula* and *Te. obscuriceps*. These structures, however, do not differ significantly from those of *Te. labrosa* and *Te. fraterna*.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ lectotype of *Te. nigropilosa:* 'Seymore [SOUTH AFRICA: CAPE PROVINCE], 1891, 1910 H. Friese det.', SAM; ♂ holotype of *Te. nigropilosa* var. *nigrosellata:* 'Pinetown [SOUTH AFRICA: NATAL], 17.iii.1918, C. N. Barker, AcHa 2235, det. T. D. A. Cockerell', B. M. TYPE HYM 17B 825, BMNH.

ADDITIONAL MATERIAL: 11 ♀ 19 ♂ : IVORY COAST: Sassandra, 16.xii.1979, A. Pauly, 4 ♀ 1 ♂ PC; San-Pedro, 17.xii.1979, A. Pauly, on *Ipomoea arborescence,* 2 ♂ PC. SOUTH AFRICA: NATAL: Sodwana Bay, 2732 DA, 8.v.1981, C. Car, 3 ♀ SAM; Umbilo, near Durban, v.1926, A. L. Bevis, 1 ♀ AM; Umbilo, 5.v.1952, A. L. Bevis, 1 ♂ DM; Umgeni, Durban, 12.iv.1919, C. N. Barker, det. ? T. D. A. Cockerell, 1 ♀ (2389) DM; Stella Bush, Durban, 13.iii.1921, C. N. Barker, 1 ♂ (2643) AM; Bluff, Durban, 19.iii.1920, C. N. Barker, 1 ♀ 1 ♂ (2537) DM; Durban, 23.iii.1919 & 29.iii.1920, C. N. Barker, 1 ♀ 2 ♂ (2388) DM 1 ♂ TM; Malvern, i.1916, C. N. Barker, det. ? T. D. A. Cockerell, 1 ♂ DM; Winklespruit, different dates, C. N. Barker, 3 ♂ (2328) DM; Howick, 1904, J. P. Cregoe, 1 ♂ BMNH; Port Edward, 21.iii.1969, L. C. Starke, 1 ♂ (AcP 6179) NCI; CAPE PROVINCE: Rietrivier Mouth, near Port Alfred, 5.iii.1972, F. W. Gess, on *Ipomoea pescaprae,* 1 ♂ AM; Moneysworth, near Kasiega River mouth, 9.iii.1960, D. Galpin, 1 ♂ AM; Algoa Bay, 20.iii.1910, H. Brauns, 2 ♂ TM.

***Tetralonia labrosa* Friese,** Fig. 50

Tetralonia labrosa Friese, 1911: 657 (♂ holotype, MHU).

DESCRIPTION

Female. Unknown.

Male. Lengths: head 2,6 mm; scutum 2,6 mm; fore wing 8,9 mm; body 12,5 mm.

Colour. Integument with reddish-brown areas on distal regions of T1–T5. Vestiture white, except as follows: vertex mostly brown; mesoscutum with a more or less H-shaped brown mark running obliquely from near anterior end of tegula to posterior margin of scutum and joined a little anterior to centre of scutum; scutellum mostly brown, posterior margin white; fore leg with ventral surface of tarsus orange; middle and hind tibiae and basitarsi with dorsal surfaces yellowish-brown and ventral surfaces reddish-orange.

Structure. Similar to that of *Te. nigropilosa.*

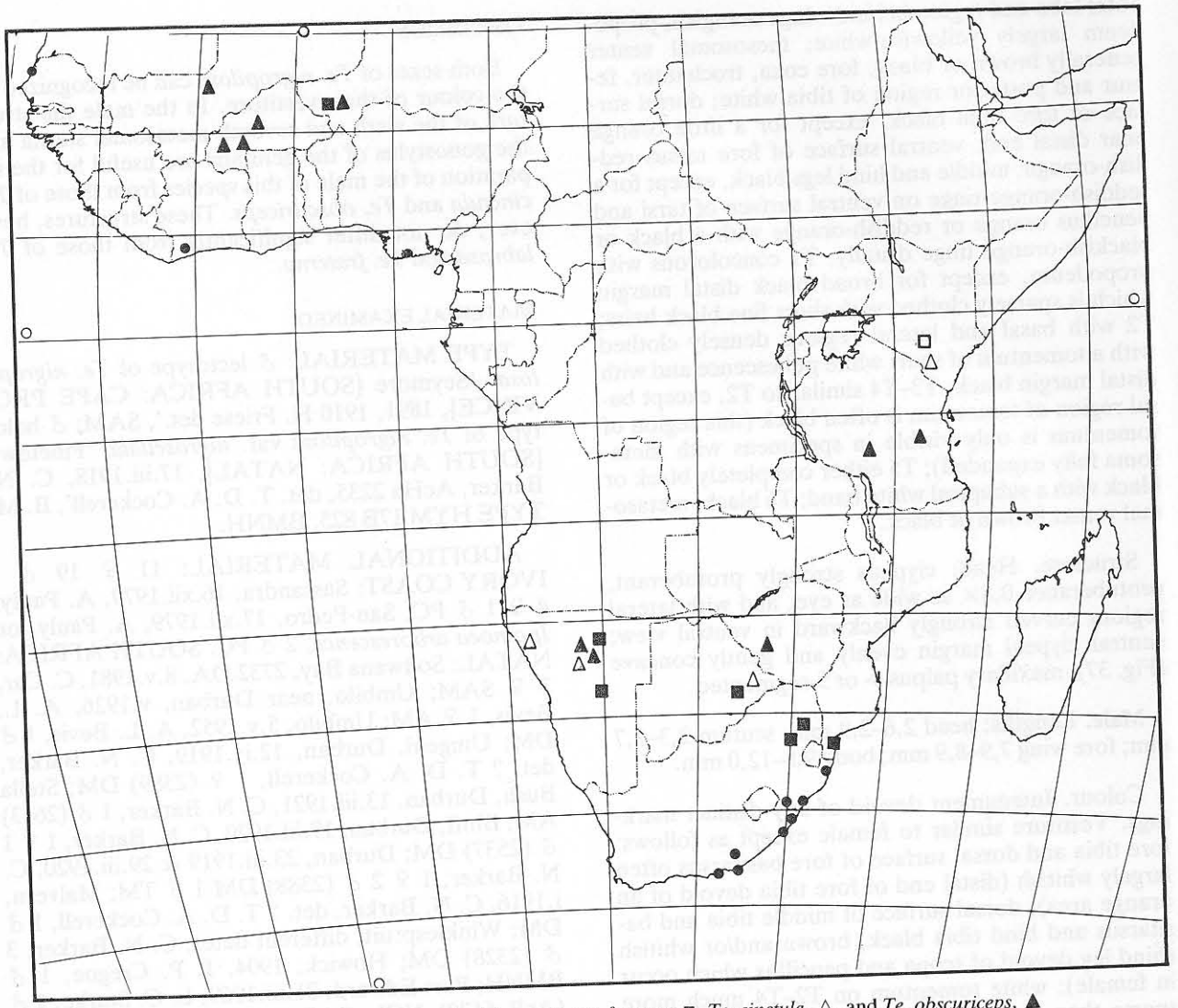

FIG. 50 Known distribution of *Te. nigropilosa*, ●, *Te. labrosa*, □, *Te. fraterna*, ■, *Te. cinctula*, △, and *Te. obscuriceps*, ▲

DISTRIBUTION (Fig. 50)

This species is known only from the holotype which was collected in Kenya.

DISCUSSION

Tetralonia labrosa is only known from the holotype, a male specimens which can be easily identified by the colour of the pubescence in combination with the structure of the sixth and seventh metasomal sterna. *Tetralonia labrosa* is structually very similar to *Te. nigropilosa* and *Te. fraterna.*

MATERIAL EXAMINED

♂ holotype: 'Br.O. Afrika, Mulango [KENYA], 1908, Säuberlich, 1910 H. Friese det.', MHU.

***Tetralonia fraterna* Friese,** Fig. 50

Tetralonia fraterna Friese, 1911: 655 (♂ lectotype, MHU).

Tetralonia rikatlaensis Friese, 1916: 443–444. syn. nov. (♂ holotype, MHU).

I here designate one of the three syntypes of *Te. fraterna* as the lectotype of this species.

The holotype of *Te. rikatlaensis,* was taken at the same locality as the lectotype of *Te. fraterna* and is not distinguishable from this specimen. I, therefore, synonymize *fraterna* and *rikatlaensis.*

DESCRIPTION

Female. Lengths: head 2,4 mm; scutum 2,6 mm; fore wing 8,0 mm; body 9,8 mm.

Colour. Integument with antennal flagellar segments II–X orange. Pubescence similar to *Te. nigropilosa* except as follows: upper region of face and vertex pale orange; mesosomal dorsum and pleuron pale orange, except scutellum, pronotal lobe and region of pleuron behind wing bright orange; propodeum whitish; mesosomal venter whitish, with a tinge of pale brown; coxae and trochanters of all legs largely concolorous with mesosomal venter; fore femur white; fore tibia with dorsal surface mostly white, distal end reddish-orange, fore tarsus with dorsal surface black and ventral surface reddish-orange; middle leg with tibia and tarsus mostly

black, dorsal surface of tibia with a tinge of reddish-orange in places and ventral surface of basitarsus orange; T3 mostly clothed with white tomentum; T4 white, except short mesal region of distal margin which has fine black hairs; T5 white with a well developed distal fringe of pale blackish-orange hair; T6 black with an orange tinge.

Structure. Similar to that of *Te. nigropilosa.*

Male. Similar to *Te. nigropilosa* except as follows: head white to yellowish-orange; mesosomal dorsum ranges from yellowish-orange to orange; mesopleuron, propodeum and mesosomal venter white to pale orange; fore leg mostly white or pale yellowish-white, with ventral surface of tarsus reddish-orange or black; middle and hind legs either similar to fore leg or mostly black; T1 sparsely clothed with long pale yellowish hairs, except distal margin which is black; basal region of T2 with a white tomentum which is not intermixed with black and T3–T4 with tomentum black proximally and white distally; distal region of T2–T5 black; T6 black or white; T7 black or brownish-orange; metasomal venter black with relatively dense black lateral fringes, especially on S5.

DISTRIBUTION (Fig. 50)

This species is known from west and southern Africa.

DISCUSSION

Tetralonia fraterna is most closely related to *Te. nigropilosa* and *Te. labrosa.* The males of these three species and the females of *Te. fraterna* and *Te. nigropilosa* can be separated by the colour of their pubescence. The female of *Te. labrosa* is unknown. I am unable to separate the female of *Te. fraterna* from the females of *Te. cinctula* and *Te. obscuriceps* with certainty because there are no structural differences and they are very similar to each other in colour. A detailed study of the intraspecific variation in the colour of the females of this genus is needed before they can be accurately separated and I have insufficient material for such a study. The males of *Te. fraterna, Te. cinctula* and *Te. obscuriceps* differ primarily in the structure of the sixth and seventh metasomal sterna.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ lectotype of *Te. fraterna:* 'Rikatla, Delagoa [MOZAMBIQUE], (Junod), 1910 H. Friese det.' , in MHU; ♂ holotype of *Te. rikatlaensis:* 'Rikatla, Delagoa, (Junod), 1915 H. Friese det.' , in MHU.

ADDITIONAL MATERIAL: 1 ♀ 10 ♂: SENEGAL: Tiougoune, 2.viii.1979, A. Pauly, 1 ♂ PC. NIGER: Niamey, 11.x.1976, K. Guichard, 1 ♀ 3 ♂ BMNH; Ile Boubon, 25 km N. W. Niamey, 2.xi.1979, A. Pauly, 1 ♂ PC. BOTSWANA: Farmers Brigade, Serowe, 22.25S 26.44E, xii.1985, P. Forchhammer, 1 ♂ NCI. SOUTH WEST AFRICA: Excelsior 286, near Windhoek, 22.27S 17.38E, 1–31.xii.1978, S. Louw & M.-L. Penrith, 1 ♂ SM; Otjikoto Lake, Tsumeb, 1917 BA, 17.ii.1972, 1 ♂ SM. SOUTH AFRICA: TRANSVAAL: Waterval-Onder, xii.1908, T. Jenkins, 1 ♂ TM; Woodbush Village, xii.1914, C.J. Swierstra, 1 ♂ TM.

***Tetralonia cinctula* Cockerell,** Fig. 42–44, 50

Tetralonia cinctula Cockerell, 1936c: 558–559 (part) (♀ holotype, BMNH).

The type series of this species consists of a female holotype and two male paratypes. The paratypes were taken at Belmont in the Cape Province. There are several places with the name Belmont in the Cape. But judging by the localities visited by the collector soon before and after the paratypes were collected, I presume this material comes from the Belmont near Kuruman in the northern Cape. The study of the type material of this species revealed that the paratypes have long antennae and are not conspecific with the holotype. They have been identified here as *T. junodi.* The holotype was collected together with a series of ten females and a male that I believe are conspecific with the holotype. These specimens were identified by T.D.A. Cockerell as *Te. trichardti,* which may be conspecific with *cinctula.* If *cinctula* and *trichardti* do prove to be conspecific, *trichardti* will become the valid name of this species (see p. 21).

DESCRIPTION

Female. Lengths: head 1,8–2,4 mm; scutum 1,8–2,3 mm; fore wing 6,5–7,4 mm; body 7,6–10,2 mm.

Colour. Integument with ventral surface of antennal flagellum orange, material from Palapye with distal region of T1–T4 orangish and semi-transparent. Vestiture on head white, except vertex which has a pale yellowish-orange tinge and distal end of labrum which is orange; scutum pale yellowish-orange and scutellum yellowish-orange to orange; mesopleuron pale yellowish to yellowish-orange dorsally, becoming paler ventrally so that ventral region of pleuron and mesosomal venter are white; propodeum whitish; fore leg with basal three segments white, dorsal surface of tibia yellowish, except distal end which is orange, and tarsus pale orangish dorsally and distinctly orange below; middle leg similar to fore leg, except ventral surfaces of trochanter and femur have a little orange and distal end of dorsal surface of tibia brownish-orange; hind leg with basal three segments mostly white; scopa and pencillus pale yellowish-orange to black; ventral surface of hind basitarsus orange or black and orange; T1 clothed with long white hair proximally, distal region naked except for a few short, fine, black hairs; T2–T4 each with a broad whitish basal tomentum and with distal regions as in T1 (distal regions becoming relatively narrower towards distal end of metasoma); T5 clothed with white tomentum, except distal fringe which is white laterally and blackish-orange mesally; T6 orange; metasomal venter mostly pale orange proximally and distinctly orange distally with lateral regions of S3–S5 whitish.

Structure. Similar to that of *Te. nigropilosa* except maxillary palpus 4-segmented.

Male. Lengths: head 2,3 mm; scutum 2,2 mm; fore wing 6,9 mm; body 9,5 mm.

Colour. Integument similar to female. Pubescence on head white, except upper region of face and vertex have a pale yellow tinge; mesosoma largely pale yellow, propodeum, ventral region of pleuron and venter whitish; legs largely whitish, with ventral surfaces of tarsi orange (distal ends of dorsal surfaces of fore and middle tibiae orange or brownish); T1–T4 similar to female; T5 similar to T4, but with distal margin very short; T6 completely whitish; T7 ranges from blackish-orange to pale orangish-white; metasomal venter whitish, except S5 which has long whitish pubescence laterally and short orange pubescence mesally, giving a concave appearance.

Structure. Similar to *Te. nigropilosa* except as follows: flagellar segment I short, about 0,27× as long as scape and segment II, which are subequal in length; flagellum a little longer than in *Te nigropilosa*, in relation to length of scape and eye, it is 7,4 × as long as scape and 2,6× as long as eye. Metasoma: S6 with posterolateral region curved strongly downwards, but not carinate as in other species in this genus, this region densely pubescent as illustrated in Fig. 42; S7–S8 as in Fig. 43–44; gonostylus of genitalia simple (cf. Fig. 41).

DISTRIBUTION (Fig. 50)

Tetralonia cinctula is only known from a few widely separated localities in Botswana, northern South West Africa and Kenya. Its distribution, however, probably extends throughout the greater part of sub-saharan Africa, as do the other species in this genus.

DISCUSSION

As with the rest of this genus there are no structural characters by which the females of this species can be identified, and they closely resemble *Te. fraterna* and *Te. obscuriceps* in colour. They can, therefore, only be reliably identified when collected in association with males. The latter, on the other hand, can be easily identified by the structure of the sixth and seventh metasomal sterna.

MATERIAL EXAMINED

♀ holotype: 'AFRICA: Palapye [BOTSWANA], 4.iii.1934, J. Ogilvie, det T. D. A. Cockerell', B.M. TYPE HYM 17B 814, BMNH.

ADDITIONAL MATERIAL: 16 ♀ 3 ♂: KENYA: Tsavo River, 24–25.iii.1911, S. Neave, 1 ♂ BMNH. BOTSWANA: Palapye, 4–6.iii.1934, J. Ogilvie, *Te. trichardti* det. T.D.A. Cockerell, 9 ♀ 1 ♂ BMNH. SOUTH WEST AFRICA: Zessfontein, ii.1925, 1 ♀ 1 ♂ SAM; 45 km S.E. Otjiwarongo, 23.iii.1976, J. G. & B. L. Rozen, 5 ♀ AMNH; Vicinity of Outjo, 23.ii.1977, J. G. & B. L. Rozen, 1 ♀ AMNH.

***Tetralonia obscuriceps* Friese,** Fig. 45–50

Tetralonia obscuriceps Friese, 1916: 443 (♂ holotype, MHU).

Tetralonia nudicauda Cockerell, 1936c: 557. syn. nov. (♂ holotype, BMNH).

Tetralonia obscuriceps closely resembles *Te. nudicauda* in both the colour of the pubescence and the structure of the sixth, seventh and eighth metasomal sterna and the genitalia. I am, therefore, of the opinion that they are synonymous.

DESCRIPTION

Female. Similar to *Te. nigropilosa* except as follows: length of head 2,1–2,2 mm, scutum 1,8–1,9 mm, fore wing 6,4–6,6 mm, body 8,2–8,6 mm; integument with ventral surface of antennal flagellum distinctly orange; pubescence on head mostly white, vertex with a tinge of pale yellow or brown; mesosomal dorsum mostly pale yellow to brown, especially scutellum; remainder of mesosoma white; all legs with coxae, trochanters and femura whitish; fore tibia mostly white, with a little reddish-orange on distal region of dorsal surface; fore tarsus pale brownish dorsally and orange ventrally; middle leg with dorsal surface of tibia mostly browish-orange and dorsal surface of tarsus pale brownish, ventral surface of tarsus orange; hind leg with dorsal surface of tibia whitish to orangish, hind basitarsus orange or black dorsally, pencillus black, and ventral surface of basitarsus black and orange; T5 white with a little blackish near middle of posterior margin; T6 black; metasomal venter black with an orange tinge to orange, and with a little white on sides of S2–S5; maxillary palpus 4-segmented.

Male. Lengths: head 2,0–2,6 mm; scutum 1,7–2,3 mm; fore wing 6,1–8,2 mm; body 8,8–10,0 mm.

Colour. Integument similar to female. Vestiture on head largely white, vertex with a very pale brownish-yellow tinge and distal region of mandible sometimes pale yellowish-orange; mesosomal dorsum mostly pale yellowish, central region of scutum with a few brownish hairs and scutellum mostly brown, lateral and posterior regions of dorsum pale yellowish; mesosomal pleuron, venter and propodeum pale yellowish-white to yellowish; fore and middle legs mostly pale yellowish sometimes with an orange tinge, especially on tarsi; hind leg with basal three segments yellowish-orange, tibia black with a reddish-orange tinge to whitish; tarsus black to reddish-orange; T1 concolorous with propodeum, except for relatively long black distal region; T2–T3 each with a pale yellowish-white tomentum basally, and distal regions black; T4–T7 mostly black, except T6 in which posterior region is whitish or mostly whitish; metasomal venter black to orangish-black with lateral regions of S2–S5 brownish-white, S5 with a distinct tuft of black to blackish-orange hair on each side.

Structure. Similar to *Te. nigropilosa,* except as follows: S6 with posterolateral carina and mediolongitudinal depression as illustrated (Fig. 45); S7–S8 as in Fig. 46–47; gonostylus of genitalia branched, in dorsal view (Fig. 48) and with laterial view as illustrated (Fig. 49).

DISTRIBUTION (Fig. 50)

Tetralonia obscuriceps is known from west, east and southern Africa.

DISCUSSION

As is the case with the rest of this genus, with the possible exception of *Te. nigropilosa,* the female of *Te. obscuriceps* can only be accurately identified when collected in association with the male or when they closely resemble and occur in the same general region as other females that were collected together with males. The male can be easily recognized by the structure of the sixth and seventh metasomal sterna.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ holotype of *Te. obscuriceps:* 'D.O.-Africa, Madibira [TANZANIA], 1905, 1914 H. Friese det.' in MHU: ♂ holotype of *Te. nudicauda:* 'S.W. AFRICA, Otavi, 3.i.1934, J. Ogilvie, det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 818, in BMNH.

ADDITIONAL MATERIAL: 7♀ 8 ♂: BURKINA FASO: Soumousso, near Kéleso (= Bobo Dioulasso), 11.x.1979, A. Pauly, on *Hibiscus esculenthus* 2 ♀ 2 ♂ PC; Mare-aux-Caimans, near Sabou, 20.x.1979, A. Pauly, on *Hibiscus esculentus* 3 ♀ PC; Boromo, 18.x.1979, A. Pauly, on *Hibiscus esculentus* 2 ♂ PC. MALI: Kayes, 22.ix.1979, A. Pauly, 1 ♂ PC. NIGER: 25 km N. W. Niamey, 2.xi.1979, A. Pauly, on *Ipomoea* sp., 2 ♀ PC. TANZANIA: Morogoro, i.1925, A. H. Ritchie, 1 ♂ BMNH. ZIMBABWE: Bulawayo, 8.i.1924, R. H. R. Stevenson, 1 ♂ (AcX 3684) NCI. SOUTH WEST AFRICA: Otavi, 3.i.1934, J. Ogilvie, 1 ♂ paratype BMNN.

SPECIES OF UNCERTAIN IDENTITY

***Tetralonia trichardti* Cockerell**

Tetralonia trichardti Cockerell, 1933a: 134–135; 1936c: 556–557 (♀ lectotype, BMNH).

I have studied three of the syntypes (in BMNH), one of which is here designated as the lectotype of this species. As discussed above, the identity of the species that comprise this genus is based on the males and I am unable to associate the sexes of this species with certainty. I have, therefore, left this species in abeyance until sufficient material is available for this genus to be thoroughly revised. Should *trichardti* be found to be synonymous with either *cinctula* or *obscuriceps* it will become the valid name of the species with which it is synonymous.

Lectotype: 'Transvaal, Louis Trichardt, 4–10.iv. 1932, J. Ogilvie, det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 815.

***Tetralonia obscuripes* Friese**

Tetralonia obscuripes Friese, 1905a: 22 (part) (♀ holotype, MHU).

Friese (1905a) described this species from a female and this description was accompanied by a description of a male, whose association with the female was clearla indicated as being questionable. I have studied both specimens and the male is not conspecific with the female. The female holotype clearly belongs to this genus and as I am unable to separate the females of this genus, with the exception of *Te. nigropilosa,* I cannot clearly determine the identity of this species. I have, therefore, left it in abeyance until sufficient information becomes available to enable the identification of the females of this genus. Should this species be found to be conspecific with any of the species discussed above, *obscuripes* will become the valid name of that species. The male paratype is synonymous with *T. abessinica.*

Holotype: 'Chinchoxo [TANZANIA], Falkstein, 1904 Friese det.'

VII. THE GENUS *TETRALONIELLA* ASHMEAD

***Tetraloniella* Ashmead**

Tetraloniella Ashmead, 1899: 61.

Type species: *Macrocera graga* Eversmann, by monotypy (Sandhouse, 1943).

This genus contains 28 distinct species and five species of which I am unsure of their identity. The distinct species are: *T. junodi, T. karooensis, T. minuta, T. nanula, T. brevikeraia, T. whiteheadi, T. watmoughi, T. abrochia, T. nubilis, T. minuticornis, T. vansoni, T. alboscopacea, T. aurantiflava, T. sierranila, T. ottiliensis, T. braunsiana, T. abessinica, T. pulverosa, T. simpsoni, T. brooksi, T. ogilviae, T. apicalis, T. katagensis, T. inermis, T. ataxia, T. friesei, T. michaelseni* and *T. elsei.* The five species of uncertain identity are: *T. capensis, T. pachysoma, T. nyassana, T. nigricans* and *T. nostra.* The females of this genus are structurally very similar and can be separated only by the colour of their pubescence and/or their size, except for a few species that differ in the structure of the scopa. I have, therefore, only described the structure of the female for *T. junodi* in detail. The males, on the other hand, can usually be identified most accurately by the structure of the sixth and seventh metasomal sterna and the gonostylus of the genitalia. A few species, however, can only be identified by the colour of their pubescence. These species can usually be easily recognized in the female sex.

Unlike *Eucara* and *Tetralonia,* the scopae of this genus is densely pubescent. The hairs are generally very fine with very fine branches, often on more than one side, except in *T. braunsiana, T. brooksi* and *T. apicalis* the scopa comprises relatively thick, unbranched, hairs and in *T. abessinica* it contains a few branched hairs. These bees collect pollen with relatively small grains that are not particularly spiky and apparently visit plants in a variety of different families (see below). The pollen of this genus was not studied in detail, as with *Eucara* and *Tetralonia.* But those specimens from which pollen was taken nearly all had Asteraceae pollen of the *Senecio-, Gnaphalium-, Taraxacum-* and *Helianthus*-types. One specimen of *T. nubilis* had small grained Malvaceae pollen with small spines and one specimen of *T. minuticornis* had Pedaliaceae pollen of the *Pterodiscus*-type.

DIAGNOSIS

Clypeus moderately protuberant, protuberance about 0,5× as wide as eye, and gently rounded; lateral margins curved gently backwards in ventral view; ventral margin of the clypeus gently and evenly concave (see Fig. 51); maxillary palpus four- to six-segmented; antennal flagellum of male variable in length, 1,8–4,0× as long as eye; scopa completely densely pubescent (anterior region contains over 200 hairs), comprising many fine hairs with many very fine branches which often occur on more than one side, except *T. ogilviae* and *T. abessinica* which have relatively few branched hairs, and *T. braunsiana, T. brooksi* and *T. apicalis* which have thick, unbranched, hairs; posterior tibial spur and basitarsus of male hind leg never modified.

KEY TO THE SPECIES OF *TETRALONIELLA*

1. Antennal flagellum 10-segmented (female) 2
– Antennal flagellum 11-segmented (male) 26
2. Integument of face completely black 3
– Face with yellow maculations on clypeus and/or mandible 16
3. Maxillary palpus 4-segmented; distal margins of T1–T4 with integument translucent and pale yellowish ..... *T. michaelseni*
– Maxillary palpus 5- or 6-segmented; distal margins of T1–T4 with integument either black or mostly black with transparent or brownish translucent distal margins..... 4
4. Proximal and distal regions of T3 clothed with a white tomentum, these two areas separated by a relatively broad black subapical cross-band 5
– Distal region of T3 always black 7
5. Pubescence on T5 mostly white, a little brownish-orange pubescence occurs on posteromesal region..... *T. minuta*
– Pubescence on T5 mostly black with a little pallid pubescence posterolaterally 6
6. Scopa whitish; known only from Ethiopia and Tanzania ..... *T. abessinica*
– Scopa yellowish-orange; known only from South Africa and the Transkei ..... *T. apicalis*
7. Scopa white anteriorly and brownish-orange posteriorly (a small species, never exceeding 9,8 mm in length)..... *T. nanula*
– Scopa completely pale yellowish to yellowish-orange (the identification of these species generally require males or both sexes) 8
8. Metasomal T4 completely clothed with dense white tomentum (T5 always black with a little white posterolaterally) ..... *T. braunsiana*
– Pubescence on T4 white proximally, distal region completely black, black with a little sparse white tomentum laterally or completely clothed with sparse white tomentum (T5 either mostly black or mostly white)..... 9
9. Pubescence on T5 mostly white, posteromesal region blackish or orange (T4 with distal region black) 10
– Pubescence on T5 mostly black with a little pallid pubescence posterolaterally and occasionally with a little white intermixed with black in middle of tergum (distal region of T4 variable) 13
10. Posteromesal region of T5 orangish, orange region poorly demarcated, integrading with white both anteriorly and laterally..... *T. minuticornis*
– Posteromesal region of T5 black and this region usually clearly demarcated 11
11. Scopa orange; black region of T5 generally triangular in shape (mesosomal dorsum usually orange or orangish) ..... *T. karooensis*
– Scopa pale yellowish to white; black region of T5 more rounded proximally than above species (mesosomal dorsum usually brown) 12
12. Scopa generally whitish anteriorly and yellowish posteriorly ..... *T. willowmorensis*
– Scopa completely pale yellowish (part) ..... *T. junodi*
13. Distal region of T4 black..... 14
– Distal region of T4 with at least a little white tomentum laterally..... 15
14. Known to occur near Grahamstown and Willowmore in the eastern Cape and numerous localities in the western and south-western Cape..... *T. nubilis*
– Known from the Transvaal, Natal and Lesotho (part)..... *T. junodi*
15. Known from the eastern Transvaal and Natal ..... *T. alboscopacea*
– Known from the western and south-western Cape (part) ..... *T. junodi*
16. Known from Madagascar only ..... *T. brooksi*
– Occurring in sub-saharan Africa 17
17. Pubescence on T5 completely white or mostly white with a little blackish or orangish posteromesally..... 18
– Pubescence on T5 black with a little pallid pubescence posterolaterally 22
18. Metasomal T3–T4 with proximal and distal regions clothed with orangish-yellow tomentum, this tomentum separated by short black cross-bands ..... *T. aurantiflava*
– Metasoma with T3 white proximally and black distally and T4 either completely white or mostly white, with a little black distally..... 19
19. Mandible usually with a little yellow near base; integument of T1–T5 with relatively broad, yellowish, translucent, distal margins; T4–T5 completely clothed with white tomentum, except distal region of T5 may have a yellowish or orange tinge ..... *T. abrochia*
– Mandible black; integument on T1–T4 completely black or black with narrow, transparent, distal margins; T4 clothed with white tomentum and usually with a little black pubescence near distal margin, and T5

always white with dense black or orange pubescence posteromesally (the identification of these species require males) 20

20. Metasoma with T4 virtually completely clothed with white pubescence ..... *T. ottiliensis*
- Metasomal T4 white proximally and black distally 21

21. Relatively large species, 11,0–12,2 mm long ..... *T. inermis, T. ataxia*
- Relatively small species, 8,5–9,5 mm ..... *T. watmoughi, T. sierranila*

22. Metasomal T2 with pallid tomentum proximally and black distally (the identification of these species requires either males or both sexes together) 23
- Metasomal T2 completely clothed with orangish tomentum ..... *T. pulverosa*

23. Mandible black ..... *T. vansoni*
- Mandible with proximal region yellow 24

24. Clypeus usually completely black, occasionally with a little yellow near middle of apical margin ..... *T. ogilviae*
- Clypeus with at least basal half yellow..... 25

25. Hind tibia with scopa either white or black, never black anteriorly and white posteriorly; T5 black with at least a little white posterolaterally ..... *T. katagensis*
- Scopa on hind tibia white with anterior region black; T5 completely black..... ..... *T. whiteheadi*

26. Middle tibia with distal region strongly swollen (Fig. 81)..... *T. ogilviae*
- Middle tibia not modified as described above..... 27

27. Fore femur with two small, distinct, spines on ventral surface ..... *T. karooensis*
- Fore femur not modified as described above 28

28. Metasomal S5 with a dense tuft of black and orange setae on each side near distal margin; S6–S8 and gonostylus of genitalia as in Fig. 87–91 ..... *T. apicalis*
- Metasomal S5 often more pubescent laterally, but without distinct tuft of setae as described above; S6–S8 and gonostylus of genitalia otherwise 29

29. Maxillary palpus 4-segmented; integument of T1–T4 with distal margins relatively wide, translucent and pale yellowish .... *T. michaelseni*
- Maxillary palpus 5- or 6-segmented; integument of T1–T4 either completely black or mostly black with narrow transparent or brownish translucent distal margins..... 30

30. Antennal flagellum 1,8–2,0× as long as eye 31
- Antennal flagellum 2,9–4,0× as long as eye 32

31. Metasoma with T2–T5 completely clothed with a whitish tomentum; S7 with strongly sclerotized apicolateral process narrow and lightly sclerotized sub-apicolateral process wide (Fig. 53)..... *T. willowmorensis*
- Metasomal T2–T5 pallid anteriorly and black posteriorly; S7 with apicolateral process wide and sub-apicolateral process narrow (Fig. 60) ..... *T. minuticornis*

32. Antennal flagellum about 2,9× as long as eye ..... *T. nanula*
- Antennal flagellum about 3,4–4,0× as long as eye 33

33. Genitalia with gonostylus distinctly branched or elbowed 34
- Gonostylus simple..... 36

34. Gonostylus of genitalia branched (Fig. 106–107); antennal flagellum about 3,4× as long as eye ..... *T. elsei*
- Gonostylus of genitalia elbowed (Fig. 69–70); antennal flagellum about 4,0× as long as eye 35

35. Pubescence on T2 pale yellowish proximally and black distally ..... *T. braunsiana*
- Metasomal T2 with anterior region white and distal region black with a little white tomentum sub-apically ..... *T. abessinica*

36. Metasoma with T2 completely clothed with an orange tomentum; posterolateral region of S7 with a distinct ventrally projecting process (Fig. 72, 76) 37
- Metasomal T2 either completely clothed with white, non-tomentose, hair or with anterior region pallid and tomentose and distal region black, S7 otherwise 38

37. Dorsal surface of middle and hind tibiae and tarsi white or pale yellowish..... *T. pulverosa*
- Middle and hind legs largely black..... ..... *T. simpsoni*

38. Metasomal S7 with large flat posterolateral processes (Fig. 94–97) 39
- Metasomal S7 with two posterolateral processes on each side, these generally consist of a well sclerotized apicolateral process and a flat, weakly sclerotized, subapicolateral process (apicolateral and subapicolateral processes often fused but can be identified by degree of sclerotization) 42

39. Metasomal S7 with apicolateral process as in Fig. 96..... *T. ataxia*
- Metasomal S7 with this process different 40

40. Metasomal S7 with apicolateral process as in Fig. 95..... *T. inermis*
- Metasomal S7 with apicolateral process different..... 41

41. Metasomal S7 with apicolateral process pointed distally (Fig. 94)..... *T. katagensis*
- Metasomal S7 with apicolateral process round distally (Fig. 97) ..... *T. friesei*

42. Metasomal S7 with sclerotized apicolateral and subapicolateral flat processes distinctly separate, see Fig. 59–63 & 78, shape of these

process often diagnostic of the species..... 43
- Apicolateral and subapicolateral processes of S7 partly fused and generally do not differ much between species (Fig. 53, 57–58)..... 48

43. Known only from Madagascar; S7 as in Fig. 78..... *T. brooksi*
- Occurring in sub-saharan Africa; S7 otherwise..... 44

44. Metasomal T3 with pallid tomentum both basally and distally, separated by a subapical cross-band of black..... 45
- Metasomal T3 white basally and black distally..... 46

45. Metasomal with apicolateral process of S7 as in Fig. 61..... *T. aurantiflava*
- Metasomal S7 with apicolateral process as in Fig. 60..... *T. vansoni, T. alboscopacea*

46. Metasomal S7 with apicolateral processes as in Fig. 59..... *T. nubilis*
- Metasoma with S7 otherwise 47

47. Metasomal S7 with apicolateral processes as in Fig. 62..... *T. sierranila*
- Metasomal S7 with apicolateral processes as in Fig. 63..... *T. ottiliensis*

48. Mandible usually with basal region partly yellow..... *T. abrochia*
- Mandible black basally..... 49

49. Distal regions of T4–T5 sparsely clothed with white hair (body length 7,5–9,2 mm) 50
- Distal regions of T4–T5 largely black (large and small species) 51

50. Metasomal S7 with apicolateral processes as in Fig. 53 (body length 7,5–8,6 mm) ..... *T. minuta*
- Metasomal S7 with apicolateral processes as in Fig. 57 (body length 8,5–9,2 mm) ..... *T. watmoughi*

51. Ventral surfaces of middle and hind tarsi black (T6–T7 always black)..... *T. whiteheadi*
- Ventral surfaces of middle and hind tarsi orange (T6–T7 usually yellowish-orange, sometimes black)..... *T. junodi*

***Tetraloniella junodi* (Friese), comb. nov.**, Fig. 51–56, 64

Tetralonia junodi Friese, 1909a: 256, 259–260; 1911: 656; Cockerell, 1936c: 556 (♂ lectotype, MHU).

Tetralonia capibia Strand, 1911a: 111–112. syn. nov. (♂ holotype, MHU).

Tetralonia natalica Cockerell, 1933a: 133–134. syn. nov. (♀ lectotype, BMNH).

Tetralonia cinctula Cockerell, 1936c: 558–559 (part, ref. p. 19).

I here designate the specimen from Shilouvane as the lectotype of this species and transfer it to the genus *Tetraloniella*. Cockerell (1936c) synonymized *junodi* and *capensis*, but as I am unable to locate the type material of the latter, I have chosen to treat *T. capensis* as a species of uncertain identity. The synonymy of *T. capensis* and *T. junodi* will result in the former becoming the valid name of this species (see p. 59).

The holotype of *T. capibia* (in MHU) and the lectotype of *T. junodi* were compared and found to be conspecific.

The type locality of *T. natalica*, the National Park in Natal, is now known as the Royal Natal National Park and the type specimen that was collected by A. Mackie is here designated as the lectotype of this species. The type series of *T. natalica*, which consists of three females, closely resembles several series of specimens of *T. junodi* that contain both sexes and can, therefore, be accurately identified. Following the comparison of this material I synonymize *junodi* and *natalica*.

DESCRIPTION

Female. Lengths: head 2,8–3,4 mm; scutum 2,4–3,1 mm; fore wing 8,2–10,5 mm; body 11,5–14,5 mm.

Colour. Integument variable, antennal flagellum either completely black or black and orange, T2–T3 often with narrowly transparent distal margins. Pubescence on head either completely white, pale yellowish or yellowish-orange, or face and gena distinctly paler than vertex with face ranging from white to pale yellowish and vertex from pale yellowish to orange (occasionally upper region of face is concolorous with vertex); mesosomal dorsum generally either brownish or orangish with anterior and lateral regions generally paler than central and posterior regions; remainder of mesosoma white or pale yellowish, except venter which sometimes has an orange tinge; fore and middle legs generally with basal three segments whitish, except ventral surface of middle trochanter and proximal region of ventral surface of middle femur which are orange, tibiae whitish proximally and orange or brown distally, and tarsi orangish or brown; hind leg with basal three segments whitish, tibia and dorsal surface of tarsus completely yellowish-orange, ventral surface of tarsus reddish-orange, pencillus brownish, reddish and/or blackish; T1 with anterior and lateral regions concolorous with propodeum and distal region mostly clothed with short black hairs; T2–T3 generally with anterior and lateral regions clothed with a tomentum of short white pubescence and with distal regions black; T4 either similar to T3 or with a little whitish tomentum on posterior or posterolateral regions; T5 either mostly black, with posterolateral regions white and posteromesal region blackish-orange, or mostly white with posteromesal region of distal fringe orange or blackish-orange, distinction between white and orange regions not as clear as in *T. karooensis* but more distinct than in *T. minuticornis*, and orange area rounded proximally; T6 blackish-orange; metasomal venter orange, except lateral regions which are often white or whitish.

Structure. Head: clypeus less protuberant than previous two genera, protuberance about 0,5× as

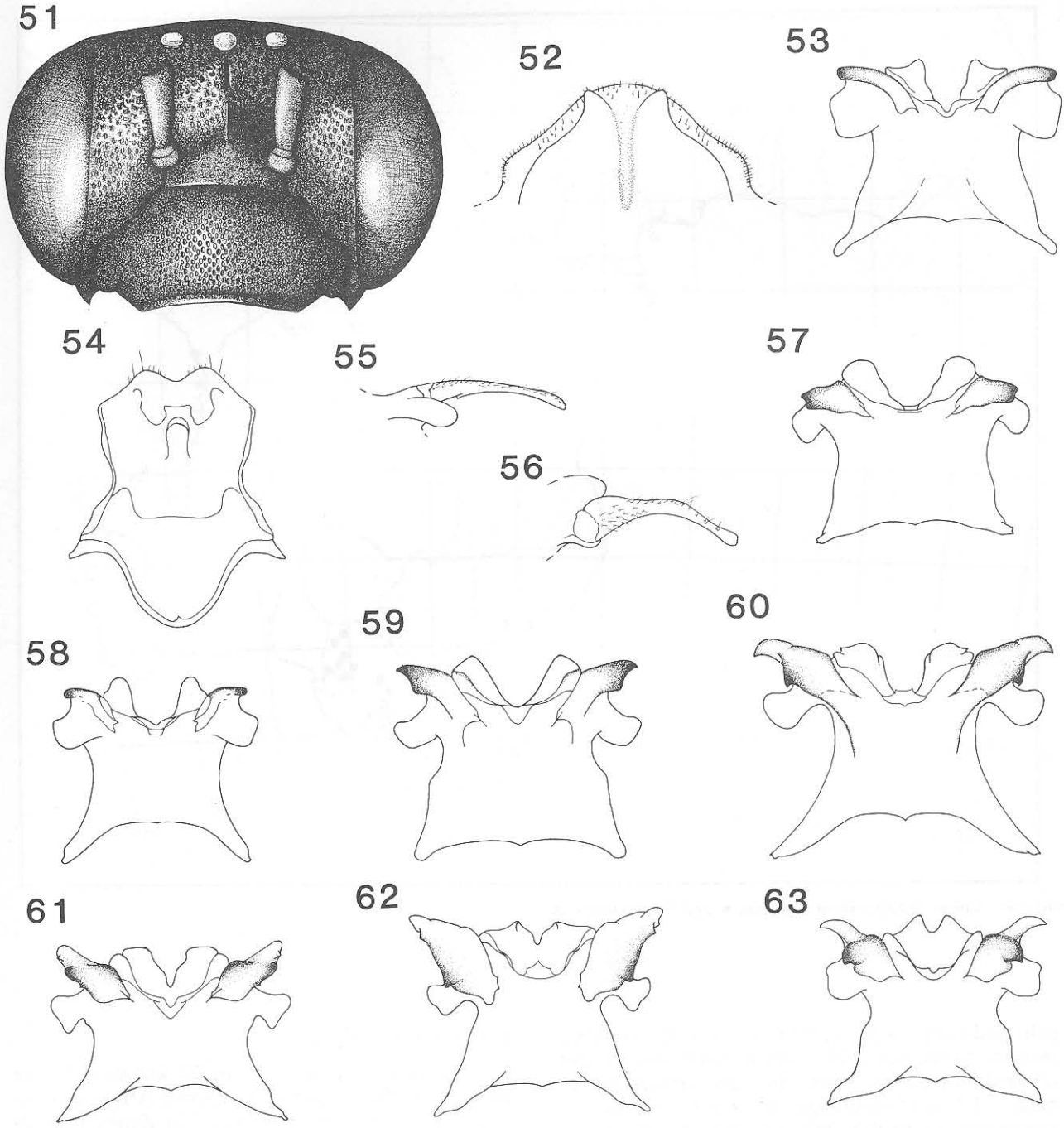

FIG. 51–63 *Tetraloniella* spp. 51–56. *T. junodi.* 51. Head of female, frontal view. 52–54. Ventral views of male S6–S8, respectively. 55–56. Dorsal and lateral views of gonostylus of male genitalia, respectively. 57. *T. watmoughi,* ventral view of male S7. 58. *T. abrochia,* ventral view of male S7. 59. *T. nubilis,* ventral view of male S7. 60. *T. minuticornis,* ventral view of male S7. 61. *T. aurantiflava,* ventral view of male S7. 62. *T. sierranila,* ventral view of male S7. 63. *T. ottiliensis,* ventral view of male S7

wide as eye, and gently rounded (Fig. 51); in ventral view, clypeus curved gently backwards laterally; entire ventral clypeal margin gently concave; maxillary palpus 6-segmented. Mesosoma: scopa densely clothed with many fine hairs with very fine branches.

Male. Lengths: head 2,8–3,3 mm; scutum 2,4–3,4 mm; fore wing 8,4–9,9 mm; body 9,5–14,1 mm.

Colour. Integument with clypeus completely yellow, partly yellow or completely black; antennal flagellum completely black or black dorsally and orange ventrally; distal margins on T1–T4 often narrowly transparent. Vestiture on head generally with face and gena white, pale yellowish or yellowish-orange (sometimes lower region of face paler than upper region); vertex usually a little darker than face and ranges from pale yellowish to orange or brownish, occasionally head almost completely white; mesosomal dorsum pale brownish-yellow, yellowish-orange or orange; remainder of mesosoma usually distinctly paler than dorsum; legs mostly concolorous with mesopleuron, except ventral surfaces of tarsi which are orange; T1 mostly concolorous with propodeum; T2–T4 with proximal regions clothed with a tomentum of white or pale yellowish hairs and with distal regions black; T5 ranges from whitish or

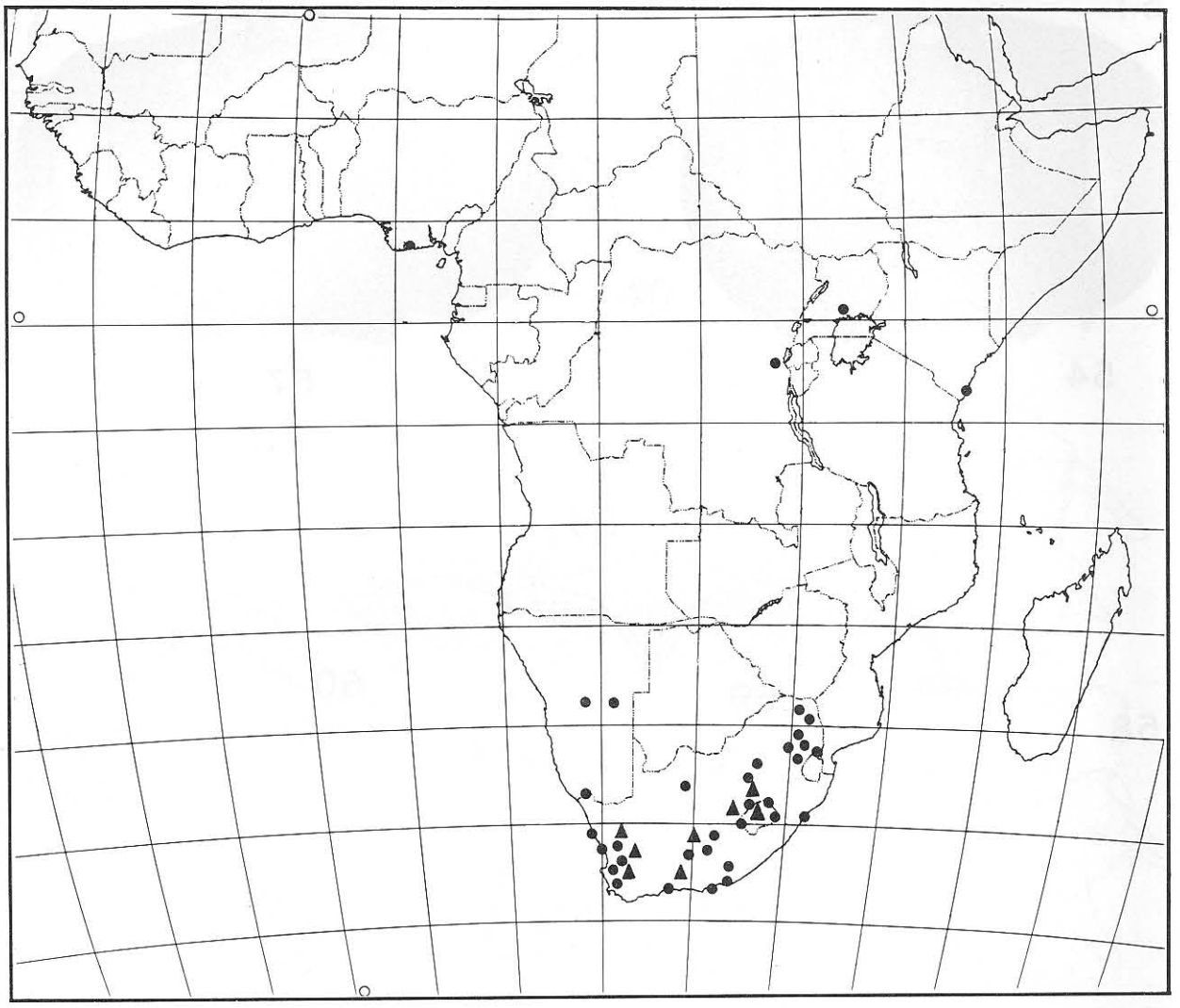

FIG. 64 Known distribution of *T. junodi*, ●, and *T. karooensis*, ▲

pale yellowish, with a pallid tomentum on distal margin, to whitish with a black distal margin and seldomly completely black; T6 white, orange and/or black; T7 reddish-orange or black; metasomal venter mostly whitish, mesal region sparsely pubescent and usually with a pale yellowish tinge.

Structure. Head: clypeus similar to that of female (cf. Fig. 51); antennal scape short, about 0,25× as long as eye, and distinctly swollen, 1,4× as long as maximum width of scape; antennal flagellum very long, segment I is the shortest segment, about 0,3× as long as scape and 0,15× as long as segment II; the latter is the longest segment; segments III–XI are subequal in length and each segment is a little shorter than segment II; combined length of flagellar segments I–XI is 15× as long as scape and about 4,0× as long as eye. Mesosoma: fore, middle and hind legs unmodified, except ventral surface of hind femur which contains a small tubercle or a small obtuse-angled spine which is fringed with yellowish or orange hairs. Metasoma: S6–S8 as illustrated (Fig. 52–54); genitalia with gonostylus simple (Fig. 55–56).

DISTRIBUTION (Fig. 64)

Tetraloniella junodi is generally known to occur throughout the greater part of South Africa and Lesotho. It has also been collected in Zaire, Uganda and Kenya. Although it has been collected in Mombasa on the coast of Kenya, it has not been recorded from the east or south coasts of southern Africa.

DISCUSSION

The most important separating characters of the female of T. junodi are the absence of yellow facial markings together with the colour of the hind leg and the colour of the metasomal dorsum. The male, on the other hand, can be identified by a combination of several characters. They are: its size; the length of the antennal flagellum; the absence of any structural modification of the legs, except for a small spine on the ventral surface of the hind femur; the colour of the metasomal dorsum; the structure of the seventh metasomal sternum and the gonostylus of the genitalia. Because of the similarity between both sexes of this species and several other species, series

that contain both sexes are generally required for accurate identifications.

This species is widely distributed and very variable in size and colour. The different colour varieties of the female are often limited to certain geographical areas, or they are at least more common in these areas, and this geographic limitation can assist in the identification of the species. The colour variety in which the distal region of the forth metasomal tergum is partly or completely clothed with white tomentum and the fifth tergum is mostly white, generally occurs in the western Cape. Although this variety is similar to *T. alboscopacea,* the latter occurs in the eastern Transvaal and Natal. The variety in which the forth tergum is black distally and the fifth tergum is mostly white occurs sporadically throughout the Cape and can be confused with *T. minuticornis,* but the colour of the fifth tergum in these two species is different (see descriptions). The variety in which the fifth tergum is black with a little white posterolaterally occurs throughout its range, and in this respect resembles *T. nubilis.* In the Cape, where this species is sympatric with *T. nubilis* the distal region of the forth tergum is usually white, this never occurs in *T. nubilis.* North of the Cape the distal region of the forth tergum is usually black, as in *T. nubilis,* but the latter is not known to occur in this region.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ lectotype of *T. junodi:* 'Shilouvane, N. Transvaal [SOUTH AFRICA], (Junod), 1907 H. Friese det.', in MHU; ♂ holotype of *T. capibia;* 'Capland [SOUTH AFRICA: CAPE PROVINCE], Berg S, det. E. Strand', in MHU; ♀ lectotype of *T. natalica:* 'Natal: National Park [SOUTH AFRICA], 3–15.iii.1932, A. Mackie, det. T. D. A. Cockerell', B. M. TYPE HYM 17B 823, BMNH, & 1 ♀ paralectotype, same data except, J. Ogilvie, BMNH. 2 ♂ paratypes of *Te. cinctula:* 'AFRICA: Belmont [SOUTH AFRICA: CAPE PROVINCE], J. Ogilvie, 23.ii.1934, *T. cinctula* det. T. D. A. Cockerell', BMNH.

ADDITIONAL MATERIAL: 104 ♀ 102 ♂ : UGANDA: Kampala, 19–28.xii.1915, C. C. Gowdey, 2 ♂ BMNH; Buamba Pass, i.1928, G. D. H. Carpenter, det, *T. nyassana* det. ? T. D. A. Cockerell, 2 ♂ BMNH. ZAIRE: Bukavu, viii.1931, T. D. A. Cockerell, det. T. D. A. Cockerell, 1 ♂ BMNH. KENYA: Mombasa, 1906, A. J. Cholmley, 1 ♀ 1 ♂ BMNH. SOUTH AFRICA: TRANSVAAL: Entabeni Forest Reserve, Soutpansberg, 23.00S 30.16E, i.1987, C. D. Eardley, 14 ♀ 3 ♂ NCI; Wolkberg, 21 Km E Tzaneen, 12.iii.1976, R. H. Watmough, 4 ♀ 5 ♂ (2 ♀ on Compositae & 2 ♂ on Labeate) NCI; Shilouvane, xii.1905–iii.1906, Rev. Junod, 2 ♂ TM; Great Letaba, 30.xii.1902, Dr Breyer, 1 ♂ NCI; Lisbon Falls, near Graskop, 17.i.1963, A. L. Capener, 1 ♂ NCI; Long Tom Pass, 25.07S 30.35E i.1977, E. F. Whiteside, 1 ♀ NCI; Barberton, xii.1978, G. L. Prinsloo, 1 ♂ NCI; Kaapschehoop, 13.ii.1968, D. J. Brothers, 1 ♂ AM; Johannesburg, ii–iii.1906, G. Kobrow, 9 ♀ 4 ♂ (1 ♀ 1 ♂ det. H. Friese 1910) TM, 3 ♀ 1 ♂ BMNH; Sterkfontein, 24.i.1966, C. K. Brain, 1 ♂ TM; NATAL: Kloof, ix.1926, R. E. Turner, 1 ♀ BMNH; 'Natal: National Park' (= Royal Natal National Park), 3–15.iii.1932, J. Ogilvie, 1 ♀ BMNH; same data except, A. Mackie, 1 ♀ BMNH; ORANGE FREE STATE: Norvals Pont, north bank halt, 12–16.iv.1934, J. Ogilvie, 5 7 ♂ BMNH; Ficksburg, 26.ii–1.iii.1932, J. Ogilvie, 4 ♀ 2 ♂ BMNH, 3 ♀ MRAC; CAPE PROVINCE: Middelburg, xi.1935, museum staff, 1 ♀ 10 ♂ SAM; Adelaide, 3226 CB, 16.xi.1983, V. B. Whitehead, 1 ♂ SAM; Coldsprings, 33.20S 26.29E, 25.i.2975 & 2.ii.1975, C. F. Jacot-Guillarmod, on *Senecio longifolia,* 2 ♂ AM; Strowan, near Grahamstown, ii–iv.1967, C. F. Jacot-Guillarmod, 2 ♀ 2 ♂ AM; Algoa Bay, different dates, H. Brauns, 3 ♀ 1 ♂ (1 ♀ *T. minuticornis* det H. Friese 1905) TM; George district, 1901, Leipoldt, *'Tetralonia bei braunsiana'* det. H. Friese 1910, 1 ♂ SAM; 15 km S.E. Oudtshoorn, 3322 CB, 9.xi.1986, J. G. H. Lond & C. Quickelberg, 1 ♀ NCI; Lady Grey, 6.i.1925, R. I. Nel, 1 ♂ TM; Murrayburg district, iii.1931, museum staff, 1 ♀ 5 ♂ SAM; Richmond district, iii.1931, museum staff, 2 ♂ SAM; Stellenbosch, different dates, H. Brauns, 6 ♀ 6 ♂ TM; Stellenbosch, 26.iii.1927, C. Nel, 1 ♀ 2 ♂ NCI; Rondebosch, det. H. Friese 1910, 1 ♀ SAM; Cape Town, 1874, det. H. Friese 1910, 1 ♂ SAM; 25 km S.E. Hopefield, 15.x.1972, J. G. Rozen, R. McGinley & C. Thompson, on *Berkheya rigida,* 11 ♀ AMNH; 20 km N. Silverstroom, 33.24S 18.16E, 14.xi.1984, C. D. Eardley, 1 ♂ NCI; 5 km N. Nieuwoudtville, 3119 AC, 16.xi.1986, J. G. H. Londt & C. Quickelberge, 1 ♂ NCI; Van Rhynsdorp, vii–viii.1927. G. van Son, 3 ♀ 9 ♂ TM; same locality & date, H. Brauns, 5 ♂ TM; Papendorp, Olifants River, x.1950, museum expedition, 2 ♂ SAM; Wallekraal, x.1950, museum expedition, 5 ♀ SAM; Clanwilliam, 3218 BB, 21.viii.1984, V. B. Whitehead & M. Macpherson, 4 ♀ 1 ♂ SAM; Biedouw Valley, District of Clanwilliam, 32.08S 19.14E, 5–7.ix.1987, C. D. Eardley, 1 ♀ 4 ♂ NCI; Die Koei River, Richtersveld, 11.x.1974, R. H. Watmough, 1 ♀ NCI. SOUTH WEST AFRICA: Windhoek, 2217 CA, 19–30.viii.1974, 1 ♂ (H 18672) SM; Gobabis, Owingi 246, 18.iv.1981, V. B. Whitehead, 1 ♂ SAM. LESOTHO: Bokong Post Office, 26.xii.1946, L. Bevis, 4 ♂ DM & 6 ♀ 1 ♂ AM. Mamathes, different dates, C. F. Jacot-Guillarmod, 1 ♀ 4 ♂ AM; Sebalabala, near Mamathes, 12.iii.1951 & 20.ii.1956, C. F. Jacot-Guillarmod, 1 ♀ 2 ♂ AM; Makhapung Dip, 23.i.1955, L. Bevis 1 ♂ AM; same data except C. F. Jacot-Guillarmod, 1 ♀ AM.

***Tetraloniella karooensis* (Brauns), comb. nov.,** Fig. 64

Tetralonia karooensis Brauns, 1926: 200–201 (♂ holotype, TM).

I here transfer this species to the genus *Tetraloniella.*

DESCRIPTION

Female. Similar to *T. junodi* except as follows: T1–T4 with distal black regions generally more gla-

orous; T5 white and largely tomentose (a few black hairs may be intermixed with tomentum), except posteromesal region which is black and forms a clearly demarcated triangle.

Male. Lengths: head 2,7–3,0 mm; scutum 2,3–2,8 mm; fore wing 7,8–8,7 mm; body 9,9–10,5 mm.

Integument with face and antennal flagellum completely black. Vestiture on head white, except supraantennal area and anterior region of vertex which are yellowish-orange; mesosoma usually white with posterior region of scutum and scutellum yellowish-orange, sometimes scutum mostly yellowish-orange (anterior region very pale), upper region of pleuron and pronotal lobe pale yellowish-orange; fore leg white, except distal end of tibia and dorsal surface of tarsus yellowish-orange; middle and hind legs with basal three segments white, dorsal surface of tibiae and tarsi yellowish-orange; ventral surfaces of all tarsi orange to reddish-orange; T1–T4 largely clothed with long whitish hair, distal margins of T2–T4 with a few long black hairs; T5–T6 mostly black; T7 blackish-orange; metasomal venter white (lateral hair longer than mesal hair), except S5 which is mostly orange.

Structure. Similar to *T. junodi* except as follows: relative length of flagellar segment I about 0,6x as long as scape and 0,26x as long as segment II; fore femur with two small spines on ventral surface, one near proximal end of femur, the other about one third of femur length from proximal end.

DISTRIBUTION (Fig. 64)

Tetraloniella karooensis is known from the Cape and the Orange Free State, in South Africa and Lesotho.

DISCUSSION

The similarity between this species and *T. junodi* is remarkable, the female can only be identified by the more shiny metasoma (this can only be detected by direct comparison with *T. junodi*) and the colour of the fifth, and sometimes the forth metasomal terga (some specimens of *T. junodi* have the forth tergum clothed with white tomentum). The males of *T. karooensis* and *T. junodi* can easily be separated by the two spines on the ventral surface of the fore femur. They also differ a little in colour and the structure of the seventh metsomal sternum.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ holotype: 'Willowmore [SOUTH AFRICA: CAPE PROVINCE], Capland, 1.ix.1903, Dr Brauns', TM (No. 678).

ADDITIONAL MATERIAL: 29 ♀ 10 ♂: SOUTH AFRICA: ORANGE FREE STATE: Ficksburg, ii–iii.1932, J. Ogilvie, 1 ♀ MRAC, CAPE PROVINCE: Willowmore, different dates, 1 ♀ paratype, 10 ♀ 7 ♂TM, 1 ♂ SAM; Stellenbosch, 26.iii.1927, C. Nel, 1 ♂ TM; Biedouw Valley, near Clanwilliam, 32.08S 19.14E, 5–7.ix.1987, C. D. Eardley, 1 ♀ NCI; Loeriesfontein, 30.57S 19.27E, 9.ix.1987, C. D. Eardley, 2 ♀ NCI; Cedarberg, 15–30 km S. E. Clanwilliam, 24.x.1982, T. L. & R. T. Griswold, 8 ♀ BBSL; Nieuwoudtville, flower reserve, 3119 AC, 7.iii.1986, V. B. Whitehead, 1 ♂ SAM; same data except, 10.ix.1984, V. B. Whitehead & M. Macpherson, 1 ♂ SAM; Calvinia reserve, 3119 BD, 25.viii.1985, V.B. Whitehead & M. Macpherson, 1 ♀ SAM; Bulhoek Klaver, near Calvinia, x.1950, museum expedition, 3 ♀ SAM. LESOTHO: Mamathes, 9.iii.1947, C. Jacot-Guillarmod, 1 ♀ TM.

***Tetraloniella minuta* (Friese), comb. nov.,** Fig 65

Tetralonia minuta Friese, 1905a: 21–22; Rozen, 1969: 102–106; Gess, 1981: 17 (♂ lectotype, MHU).

Tetralonia rupicola Cockerell, 1914: 282-283; 1916: 210 (♀ lectotype, AMNH).

Tetralonia recisa Brauns *(nomen nudum)*. Anonymous, 1958: 33.

Friese (1905a) described this species form a female and a male and I here designate the male as the lectotype and transfer this species to the genus *Tetraloniella*. Although I have not seen the type material (in MHU), I have studied material that was identified by J. G. Rozen who had examined the holotype (Rozen, 1969).

I was only able to locate one syntype of *rupicola*, which I here designate as the lectotype (in AMNH). This specimen is very similar to the material of *minuta* that I have studied. I, therefore, synonymize *rupicola* and *minuta*.

Brauns labelled several specimens of *T. minuta* in his collection (in TM) as *T. recisa*, two of which he labelled as types. Dr Brauns, however, did not described this species. *Tetralonia recisa*, therefore, has no status in zoological nomenclature.

DESCRIPTION

Female. Lenghts: head 2,0–2,3 mm; scutum 1,8–2,0 mm; fore wing 5,9–6,6 mm; body 7,5–8,1 mm.

Colour. Integument with ventral surface of antennal flagellum orange in some specimens and black in others; distal margins of T1–T4 transparent. Pubescence of face and gena white, vertex pale yellowish; mesosomal dorsum similar to vertex in front and orange or brownish-orange towards scutellum; remainder of mesosoma mostly white; fore leg mostly white, with a yellowish tinge on dorsal surfaces of tibia and basitarsus and with ventral surface of tarsus orange; middle leg similar to fore leg, except for a little orange on trochanter and near base of ventral surface of femur; hind leg white, except for scopa which has a yellowish tinge and ventral surfaces of tibia and tarsus which are distinctly orange; pencillus mostly orange, distal end reddish-orange or black; T1 sparsely clothed with long white hairs and distal region black and largely naked; T2 with basal and lateral regions densely clothed with a tomentum of

short white pubescence, central region sparsely clothed with short black hairs; T3 similar to T2, except black region is shorter; T4 either similar to T3 or completely white (black regions on T2, T3 and sometimes T4 becomes progressively shorter towards distal end of metasoma); T5 white, with posteromesal region orangish; T6 white laterally and orange mesally; mesosomal venter mostly pale orange with a little white laterally.

Structure. Similar to *T. junodi.*

Male. Lengths: head 1,9–2,1 mm; scutum 1,6–2,0 mm; fore wing 5,8–6,3 mm; body 7,5–8,6 mm.

Colour. Integument with clypeus and labrum completely or partly yellow; antennal flagellum either completely black or black with ventral surface orange; distal region of T1–T4 brownish and each tergum with a narrow transparent distal margin. Vestiture on head ranges from completely white with a slight tinge of yellow on vertex to largely pale orangish, with gena white and clypeus pale yellowish-white; mesosoma with dorsum more or less concolorous with vertex and pleuron and propodeum distinctly paler in colour, similar to lower region of face; mesosomal venter white; legs range from almost completely white in pale specimens to yellowish-orange in more intensely coloured specimens, with ventral surfaces of all trasi orange; metasomal dorsum with T1 sparsely clothed with long white or yellowish-white hairs, except posterior region which contains a little black; T2 mostly similar to T1, except lateral regions have a little white tomentum and posterior region a little black pubescence (sometimes distal margin with a little white); T3 either completely white or with a weakly developed white tomentum basally and distal region with a mixture of long whitish and short black hairs; T4–T6 generally completely clothed with weakly developed white tometum which is intermixed with long white or pale yellowish hairs; T7 white or pale yellowish; metasomal venter white or pale yellowish-white.

Structure. Similar to *T. junodi* except as follows: ventral surface of hind femur with a tubercle or small obtuse angled spine and region between spine and proximal end of tibia with a fringe of orangish hairs.

DISTRIBUTION (Fig. 65)

Tetraloniella minuta is apparently most common in the eastern Cape. It has, however, been collected in the Transvaal, Natal, the western and south western Cape and South West Africa.

DISCUSSION

Tetraloniella minuta is a small species of which the female can be easily identified by the presence of white distal fringes on the second, third and forth metasomal terga. The male of *T. minuta* closely resembles that of *T. junodi* in colour and structure, including the structure of the seventh metasomal sternum. The males of these two species can, however, be separated by their size. The male of *T. nanula,* which is also a relatively small species, differs from *T. minuta* in the relative lengths of the antennal flagellar segments and in *T. nanula* the forth and fifth metasomal terga have a dense white basal tomentum which sharply contrasts with the black region of these two terga. In *T. minuta* these two terga are almost completely clothed with a yellowish tomentum.

MATERIAL EXAMINED

TYPE MATERIAL: ♀ lectotype of *T. rupicola:* On flowers, Rosebank [SOUTH AFRICA: CAPE PROVINCE], det. T. D. A. Cockerell', AMNH.

5♀ ♀ 60 ♂: SOUTH AFRICA: TRANSVAAL: De la Rey, i.1919, H Brauns, 3 ♀ 1 ♂ TM; Florida Hills, 23.xii.1966, H. Empey, 1 ♀ NCI; NATAL: Mfongosi, xii.1914, W. E. Jones, 2 ♀ SAM; Nagle Dam district, 16.i.1966, F. Herbst, 1 ♂ AMNH; CAPE PROVINCE: Hendrik Verwoerd Dam, 12.iii.1969, L. C. Starke, 1 ♀ (AcP 5762) NCI; Storwan, near Grahamstown, 27.xi.1966 & 24.xii.1967, C. F. Jacot-Guillarmod, 4 ♀ 1 ♂ AM; Boskey Dell, near Grahamstown, 20.xi.1966, C. F. Jacot-Guillarmod, 3 ♀ 1 ♂ AM; Grahamstown, 29.xi.1964, D. J. Brothers, det. J. G. Rozen 1968, 1 ♂ AM; Resolution, near Grahamstown, i–iv.1928, Walton, 2 ♀ AM; 4,8 km W. Grahamstown, 27.xi.1966, J. G. Rozen & D. J. Brothers, 17 ♀ 14 ♂ AMNH; 16 km N. Grahamstown, 20.xi.1966, J. G. Rozen & D. J. Brothers, 7 ♀ 1 ♂ AMNH; 17,7 km N. W. Grahamstown, 26.xi.1966, D. J. Brothers, 3 ♀ 1 ♂ AMNH; Fort Brown, iii.1928, Walton, 3 ♂ AM; Queenstown, ii.1905, G. Kobrow, 1 ♀ TM; Prieska, 1.i.1978, H. Empey, 1 ♀ NCI; Wilowmore, different dates, H. Brauns, 13 ♀ 13 ♂ TM; Waterford, 13.i.1965, H. Empey, 1 ♂ NCI; Oudtshoorn, xii.1911, H. Brauns, 1 ♂ TM; Oudtshoorn, 29.xii.1978, V. B. Whitehead, 1 ♀ SAM; Murrysburg district, iii.1931, museum staff, 1 ♀ SAM; 41 'miles' E. Barrydale, 13.ix.1966, J. G. Rozen, 3 ♂ AMNH; Bot River estuary, Delport, 20.x.1982, V. B. Whitehead, 2 ♀ 1 ♂ SAM; Stellenbosch, 12.iv.1927, L. S. McFarlane, 1 ♂ TM; Worcester, ix.1933, R. E. Turner, 2 ♀ 1 ♂ BMNH; 86 km S.E. Port Nolloth, 30.ix.1974, J. G. & B. L. Rozen, 3 ♀ AMNH. SOUTH WEST AFRICA: Mariental, 18.xii.1974, H. Empey, 3 ♂ NCI; 37–47 km W. Maltahöhe, 29.iii.1979, J. G. Rozen, 1 ♀ 10 ♂ AMNH; 4 km E.S.E. Seeis, 16.ii.1977, J. G. & B. L. Rozen, 1 ♀ 1 ♂ AMNH; Kaoko Otai, iii.1926, museum expedition, 1 ♀ 1 ♂ SAM.

***Tetraloniella nanula* (Cockerell), comb. nov.,** Fig. 65

Tetralonia nanula Cockerell, 1932: 168–169; 1936a: 3 (♀ holotype, BMNH).

I here transfer this species to the genus *Tetraloniella.*

DESCRIPTION

Female. Lengths: head 2,3–2,5 mm; scutum 1,8–2,0 mm; fore wing 6,7–6,9 mm; body 9,5–9,8 mm.

Colour. Integument with ventral surface of antennal flagellum orange; T1–T4 have very narrow semi-transparent distal margins. Vestiture on head white, except vertex which has a brownish tinge; mesosoma white, except scutum and scutellum which are pale brownish; basal three segments of all legs white, except ventral surfaces of middle trochanter and femur which have a little orange pubescence; fore and middle tibiae with dorsal surfaces white proximally and orangish-brown distally; fore and middle tarsi with dorsal surfaces concolorous with distal region of tibia and with ventral surfaces orange; hind leg with scopa brownish-orange, anterior region paler in colour than posterior region and ventral surface of hind basitarsus black; pencillus black with an orange tinge; T1 sparsely clothed with long white hair, except for distal region which contains short black hair; T2–T4 with white tomentum proximally and with distal regions clothed with short black hairs, distal margins sparsely clothed with black hair; T5 similar to T4, except distal region densely clothed with a fringe of long black pubescence, this fringe is relatively broad posteromesally; T6 black; metasomal venter generally whitish laterally and pale brownish-orange mesally.

Structure. Similar to *T. junodi.*

Male. Lengths: head 2,0–2,1 mm; scutum 1,5–1,6 mm; fore wing 5,4–6,3 mm; body 7,9–8,2 mm.

Colour. Integument with clypeus yellow, except for a little black near tentorial pit and ventral margin orange; labrum yellow; ventral surface of antennal flagellum orange; T1–T4 with narrow translucent distal margins. Vestiture on head mostly white with a yellowish-orange tinge on vertex; mesosoma white, except most of scutum and scutellum pale yellowish-orange; legs mostly white, distal end of dorsal surface of fore tibia, ventral surface of middle trochanter, proximal region of vertral surface of middle femur, dorsal surface of middle and hind tibiae partly pale yellowish; ventral surfaces of all tarsi orange; T1 clothed with long white hair, except distal margin which is black proximally and naked distally; T2–T5 with a basal tomentum intermixed with a few long white hairs, especially on T2, and with posterior regions black; T6 white laterally and pale orangish mesally; T7 pale orangish; metasomal venter mostly white, lateral regions with relatively long hair and mesal regions with short, sparse, pubescence.

Structure. Head: antennal scape short, 0,3× as long as eye, but not distinctly swollen, 2,4× as long as maximum width of scape; antennal flagellum fairly long, segment I is the shortest, 0,9× as long as scape and 0,5× as long as segment II; the latter is the longest segment; segments II–XI are subequal in length and each is a little shorter than II; combined length of flagellar segments I–XI is 6,9× as long as scape and 2,9× as long as eye. Mesosoma: legs unmodified. Metasoma: S6-S8 as in *T. junodi* (cf. Fig. 52–54); genitalia with gonostylus simple, as in *T. junodi* (cf. Fig. 55–56).

DISTRIBUTION (Fig. 65)

This species is known from the Cape Province.

DISCUSSION

The female of *T. nanula* can be easily identified by its size in combination with the brownish scopa and the colour of the metasomal dorsum, especially the forth and fifth terga (the metasomal dorsum resembles that of *T. karooensis*, but this species is much larger). In the male the overall size, colour (especially the metasomal dorsum) and the structure of the antenna are diagnostic.

MATERIAL EXAMINED

TYPE MATERIAL: ♀ holotype: 'Oudtshoorn [SOUTH AFRICA, CAPE PROVINCE], C.P., Nov. 2, J.O., det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 820, BMNH.

ADDITIONAL MATERIAL: 18 ♀ 13 ♂: SOUTH AFRICA: CAPE PROVINCE: Uitenhage, 30.x.1931, J. Ogilvie, 1♀ 4 ♂ BMNH; Oudtshoorn, 31.x–2.xi.1931, J. Ogilvie, 2 ♀ paralectotypes BMNH, 2 ♀ BMNH, 2 ♀ 1 ♂ MRAC: Tankwa Karoo Waterval, xi.1952, museum expedition, 3 ♀ SAM: Touwsrivier, 8.xi.1968, J. G. Rozen, 1 ♀ 7 ♂ AMNH: 66 km E. Barrydale, 13.xi.1966, J. G. Rozen, 1 ♂ AMNH: 28 km E. Velddrif, 15.x.1972, J. G. Rozem, R. McGinley & C. Thompson, 1 ♀ AMNH: Nieuwoudtville, 18.x.1972, J. G. Rozen, R. McGinley & C. Thompson, 1 ♀ AMNH; Ouplaas, 20 km S.W. Malgas, 34.21S 20.23E, 15.xi.1982, C. D. Eardley, 1 ♀ NCI; Bot River Lagoon, 12.xi.1982, on *Berkheya* sp., 2 ♀ SAM: Ceres, 12–18.ii.1932, J. Ogilvie, 1 ♀ BMNH.

***Tetraloniella brevikeraia* spec. nov.,** Fig. 65

Tetralonia willowmorensis Brauns (*nomen nudum*); Anonymous, 1958: 33.

This species was until now known only from a catalogue of type material in east and southern African museums. It is, therefore, a *nomen nudum* and the material in the TM which H. Brauns labelled as type material of *T. willowmorensis* has no status. I here provide the original description of this species and name it *brevikeraia* because of the short antennal flagellum of the male.

DESCRIPTION

Female. Lengths: head 2,7–2,9 mm; scutum 2,4–2,7 mm; body length 8,0–8,4 mm; body 10,4–12,5 mm.

Colour. Integument with ventral surface of antennal flagellum partly reddish-orange, T1–T4 with brownish translucent distal margins. Vestiture on head white, except for upper region of face and anterior region of vertex which are orangish-brown (posterior region of vertex white); mesosomal dorsum with anterior and lateral regions white, remainder of dorsum brown; mesopleuron and propodeum mostly

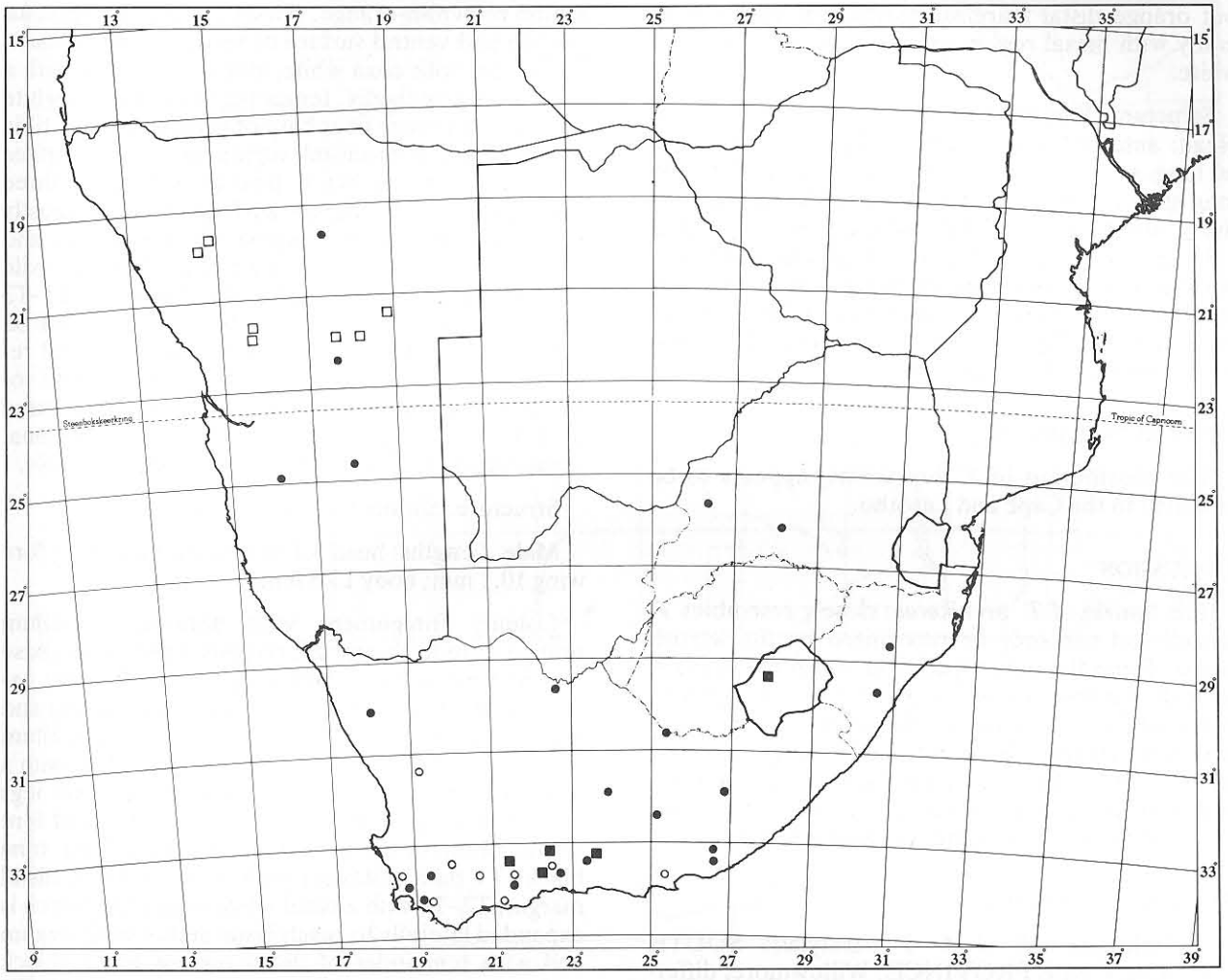

FIG. 65 Known distribution of *T. minuta*, ●, *T. nanula*, ○, *T. brevikeraia*, ■, and *T. whiteheadi*, □

whitish and venter partly whitish and partly orange; basal three segments of fore, middle and hind legs partly whitish and partly orange; fore and middle tibiae with proximal regions whitish and distal regions of dorsal surfaces brownish-orange and with ventral surfaces orange; fore and middle tarsi orange; scopa whitish with an orange tinge posteriorly; ventral surfaces of hind tibia and basitarsus orange, pencillus orange with a blackish tinge near distal end; T1 sparsely clothed with relatively long white or pale yellowish-white hairs; T2–T4 almost completely clothed with a tomentum of white or pale yellowish-white pubescence, narrow distal margins black; T5 white, with a relatively broad, dense, black fringe near middle of posterior margin; T6 whitish laterally and brown or brownish-orange near pygidial plate; metasomal venter orange, except for sides of S2–S4 which are whitish.

Structure. Similar to *T. junodi.*

Male. Lengths: head 2,5–2,6 mm; scutum 2,1–2,5 mm; fore wing 4,3–5,0 mm; body 9,9–10,1 mm.

Colour. Integument with clypeus mostly yellow; ventral surface of antennal flagellum partly orange; distal margins of T1–T5 brownish or orange and semi-transparent. Pubescence on head white, except for upper region of face and anterior region of vertex which are pale brownish-orange (posterior region of vertex white); mesosomal dorsum pale orangish, except for anterior and lateral margins which are white; remainder of mesosoma white; fore leg mostly white or whitish, ventral surfaces of tibia and tarsus orange; middle leg with basal segments whitish, except for a distinct area of short dense orange setae on ventral surfaces of trochanter and femur; dorsal surface of middle tibia ranges from yellowish-orange to brownish-orange, posteroventral region of tibia contains several long whitish hairs; middle basitarsus with a few long whitish hairs on dorsal surface and ventral surface orange; hind leg with basal three segments mostly whitish, except for a little orange on ventral surface of femur, tibia sparsely clothed with long white hairs, except posterior region of dorsal surface has relatively dense orange pubescence; hind basitarsus with long white hairs on dorsal surface and orange on ventral surface; T1 of metasoma completely clothed with long white hair; T2–T5 clothed with short white, tomentose, pubescence which is intermixed with relatively long orange setae, and with narrow orange distal margins; T6–T7 similar to previous four terga, but with-

out orange distal margins; mesosomal venter generally with mesal region orange and lateral regions white.

Structure. Similar to *T. junodi* except as follows: Head: antennal scape relatively long, about 0,32× as long as eye, and not distinctly thick, 2,1× as long as its maximum width; antennal flagellum relatively short, about 5,8× as long as scape and 1,8× as long as eye; flagellar segments I–XI subequal in length and each segments is about 0,6× as long as scape. Mesosoma: fore and middle legs unmodified; hind leg with a small obtuse angled spine on ventral surface of hind femur.

DISTRIBUTION (Fig. 65)

The distribution of *T. brevikeraia* appears to be confined to the Cape and Lesotho.

DISCUSSION

The female of *T. brevikeraia* closely resembles *T. junodi* and can only be recognized by the whitish scopa. From the other species in which the scopa is whitish, it differs in size, in that its face is completely black and in the colour of the metasomal dorsum. The male, on the other hand, can be easily identified by the length of the antennal flagellum in combination with the colour of the metasomal dorsum and the structure of the seventh metasomal sternum.

MATERIAL EXAMINED

♂ holotype, 19 ♀ 4 ♂ paratypes: SOUTH AFRICA: CAPE PROVINCE: Willowmore, different dates in September and October, H. Brauns, ♂ holotype (No. 678), 6 ♂ TM, 1 ♂ BMNH; Ladismith, 10–12.ix.1946, C. F. Jacot-Guillarmod, 3 ♀ AM; Oudtshoorn, 14.ix.1976, T. G. Laubscher, 9 ♀ 1 ♂ SAM; Matjiesfontein, Purieh, 1 ♂ SAM. LESOTHO: Matela, 19.ix.1954, C. F. Jacot-Guillarmod, 3 ♀ AM.

***Tetraloniella whiteheadi* spec. nov.**, Fig. 65

This new species is named for the collector of the holotype, Dr V. B. Whitehead of the SAM.

DESCRIPTION

Female. Lengths: head 3,1 mm; scutum 3,0 mm; fore wing 10,4 mm; body 14,1 mm.

Colour. Integument with antennal flagellum reddish-orange; almost entire clypeus yellow (upper margin of clypeus with a blackish-brown mark in middle of each half and ventral margin of clypeus brownish-orange); labrum and basal region of mandible yellow. Vestiture on head white with vertex pale yellow to orange, sometimes with a yellowish-orange tinge on upper region of face; labrum pale yellowish; mesoscutum, upper region of mesopleuron, pronotal lobe and tegula yellowish-orange to orange; scutellum orange to reddish-orange; remainder of mesopleuron and mesosomal venter white; propodeum pale yellowish; fore leg with basal three segments white, dorsal surface of tibia white with posterodistal region brownish-orange, dorsal surface of basitarsus greyish and ventral surface of tarsus organish-black; middle leg with coxa white, trochanter white with a little orange ventrally, femur pale yellowish to white with a little orange near base of ventral surface, tibia white with posterodistal region of dorsal surface blackish and tarsus black; hind leg with basal three segments whitish, dorsal surface of tibia mostly white, except posterior region which is black, and remainder of tibia and entire tarsus black; T1 pale yellowish with a broad black distal margin; T1–T3 with white basal tomentum which is expanded on sides to reach distal margin, remainder of distal regions black; T4 completely clothed with white tomentum, except base of distal region is demarkated by a few long black hairs; T5–T6 black; metasomal venter blackish with a little white on sides of S2–S4.

Structure. Similar to *T. junodi.*

Male. Lengths: head 3,1 mm; scutum 2,7 mm; fore wing 10,1 mm; body 13,5 mm.

Colour. Integument with antennal flagellum orange to reddish-orange; clypeus, labrum and base of mandible yellow. Pubscence on head white, except vertex which is pale yellowish; mesoscutum and tegula pale yellow to yellowish-orange; scutellum orange to reddish-orange; pronotal lobe white with a tinge of yellow; remainder of mesosoma white; legs white to pale yellowish with ventral surfaces of fore tarsus orangish-black and middle and hind tarsi black; T1 pale yellowish with a broad black distal margin; T2–T4 with a basal white tomentum which is expanded laterally to reach distal end of each tergum and with remainder of distal regions black (black region is widest on T2 and narrowest on T4); T5 completely clothed with white tomentum; T6 black with a little white posterolaterally; T7 black; metasomal venter sparsely clothed with a mixture of short black and white hairs and with lateral regions of S2–S5 densely clothed with long white hair.

Structure. Similar to *T. junodi.*

DISTRIBUTION (Fig. 65)

This species is known from South West Africa.

DISCUSSION

Tetraloniella whiteheadi is structurally similar to *T. junodi* in both sexes. It does, however, differ in the colour of the integument and the vestiture. In the female the most important diagnostic features are the yellow clypeus and basal region of the mandi1905able, the dense white tomentum that clothes the forth metasomal tergum, the white and black scopa and the black ventral surfaces of the middle and hind tarsi. The males can be recognized by the structure of the seventh metasomal sternum, the simple gonostylus of the genitalia, the yellow basal region of the mandible and the black ventral surfaces of the middle and hind tarsi.

MATERIAL EXAMINED

♂ holotype, 2 ♀ 7 ♂ paratypes: SOUTH WEST AFRICA: Steinhausen, Joyce 198, 2118 CC,

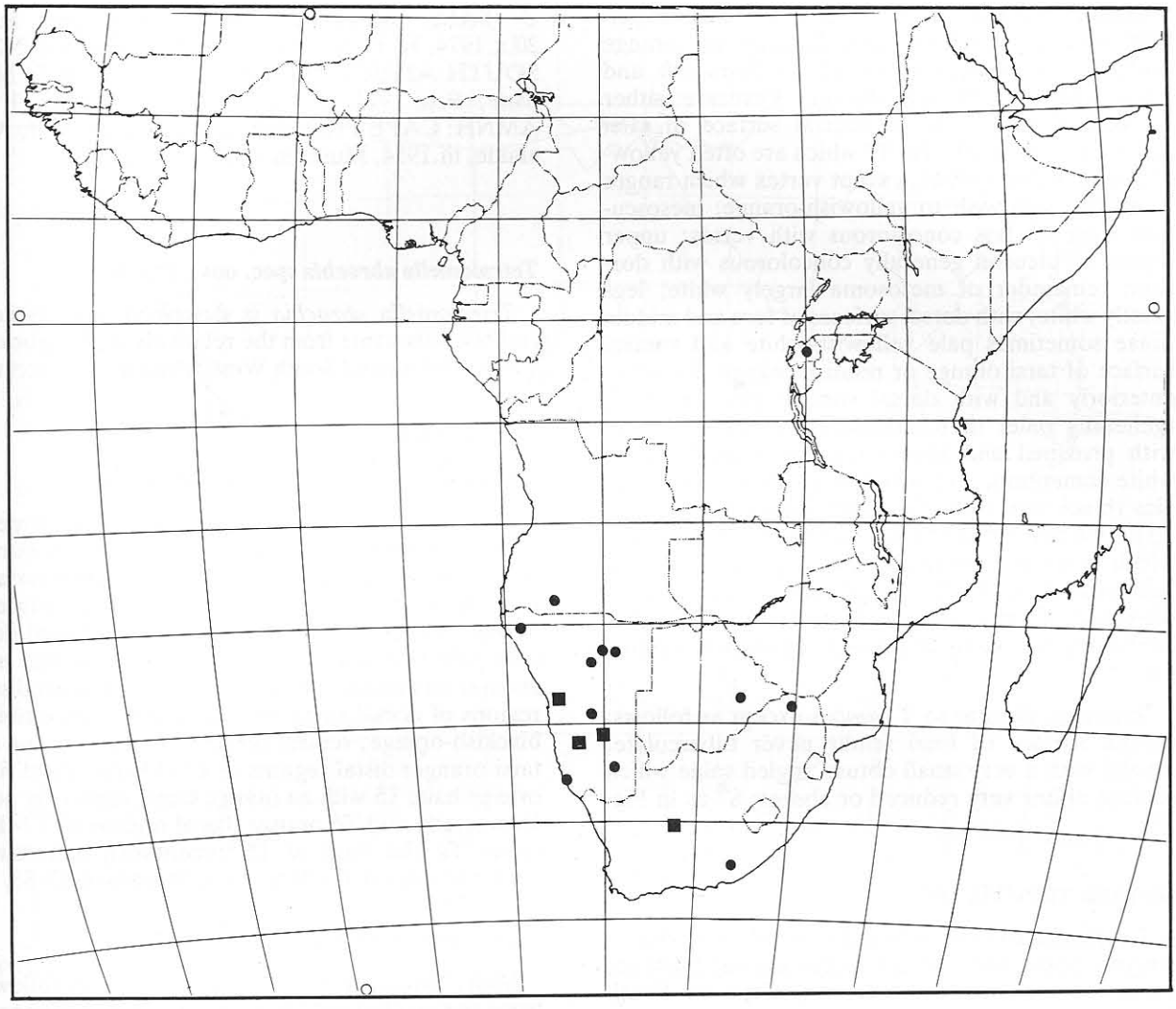

FIG. 66 Known distribution of *T. watmoughi*, ●, and *T. abrochia*, ■

26.ii.1982, V. B. Whitehead, ♂ holotype SAM; Kehoro 183, 2218 BD, 26.ii.1982, V. B. Whitehead, 1 ♂ SAM; Kamanyab, iii.1925, museum expedition, 2 ♂ SAM; 61 km W. Omaruru, 21.iii.1979, J. G. Rozen, 3 ♂ AMNH; 7 km W. Usakos, 19.iii.1976, J. G. & B. L. Rozen, 1 ♂ AMNH; 38 km N. Usakos, 26.iii.1976, J. G. & B. L. Rozen, 1 ♀ AMNH; 68 km S.E. Seeis. 29.iii.1976, J. G. & B. L. Rozen, 1 ♀ AMNH.

***Tetraloniella watmoughi* spec. nov.**, Fig. 57, 66

This species is new and is named for Dr R. H. Watmough of the Plant Protection Research Institute, Pretoria.

DESCRIPTION

Female. Lengths: head 2,3–2,7 mm; scutum 2,0–2,3 mm; fore wing 6,3–7,3 mm; body 8,2–9,5 mm.

Colour. Integument with clypeus mostly yellow; ventral surface of antennal flagellum usually mostly orange; T2–T4 with narrow distal margins transparent. Pubescence on head mostly white, except vertex which is pale yellowish; mesosomal dorsum and dorsal surface of mesopleuron concolorous with vertex, except scutellum which is largely orange; remainder of mesosoma whitish; fore, middle and hind legs white, except distal regions of dorsal surfaces of fore and middle tibiae which have a distinct orange tinge, ventral surface of middle trochanter and femur partly orange, region of scopa near basitibial plate orange, ventral surface of all tarsi reddish-orange, and pencillus orange with a blackish tinge; T1 sparsely clothed with long whitish hairs, except distal region which is black; T2–T4 with white tomentum on anterior and lateral regions, and with remainder of terga black, black region becomes progressively narrower towards distal end of metasoma; T5 completely white, except for posteromesal region which is densely clothed with long orangish hairs; T6 mostly pale orange; metasomal venter mostly pale orange, with a little white laterally.

Structure. Similar to *T. junodi.*

Male. Lengths: head 2,4–2,6 mm; scutum 1,9–2,2 mm; fore wing 6,7–7,2 mm; body 8,5–9,2 mm.

Colour. Integument with clypeus and labrum yellow; antennal flagellum black dorsally and orange ventrally; distal regions of T1–T5 brownish and transparent or semi-transparent. Vestiture either completely white, except ventral surface of tarsi which are orange and T6–T7 which are often yellowish, or with head white, except vertex which ranges from pale yellowish to yellowish-orange; mesoscutum more or less concolorous with vertex; upper region of pleuron generally concolorous with dorsum; remainder of mesosoma largely white; legs mostly white, with dorsal surfaces of fore and middle tibiae sometimes pale yellowish-white and ventral surface of tarsi orange or reddish-orange; T1 white anteriorly and with dorsal surface pale yellowish (generally paler than mesosomal dorsum); T2–T3 with proximal and lateral regions clothed with a white tomentum, and with broad black distal margins (black region on T2 a little longer than that of T3); T4 either similar to T3, except for distal margin which is relatively narrow, or completely white or yellowish-white; T5–T6 completely white or yellowish-white; T7 pale orange; metasomal venter with lateral regions white and mesal region pale yellowish.

Structure. Similar to *T. junodi* except as follows: ventral surface of hind femur never tuberculate, usually with a very small obtuse angled spine which is often either very reduced or absent; S7 as in Fig. 57.

DISTRIBUTION (Fig. 66)

Tetraloniella watmoughi is known from Rwanda, Angola, South West Africa, Botswana and from the Transvaal and the south-eastern Cape in South Africa.

DISCUSSION

In the female of *T. watmoughi,* as in most of the females of this genus, the facial maculation in combination with the colour of the hind leg and the metasomal dorsum are the most important diagnostic features. The male can be identified by the shape of the seventh metasomal sternum.

MATERIAL EXAMINED

♂ holotype, 11 ♀ 28 ♂ paratypes: RWANDA: Gabiro, i–v.1946, R. Verhuist, 1 ♂ MRAC. ANGOLA: Rocadas, near Cunene river, 19–22.ii. 1972, southern African expedition, 1 ♀ BMNH. BOTSWANA: Farmers Brigade area, 6 km S.E. Serowe, 20.iv.1983 & 27.iv–24.v.1984, P. Forchhammer, 5 ♂ NCI; SOUTH WEST AFRICA: Kaoko Otavi, iii.1926, museum expedition, 1 ♂ SAM; Otjikoto-Sud, Omaruru, 2116 AD, 18.xi.1971 & 10–13.ii.1972, 4 ♂ 8 ♂ (H 5341, 6515, 6516) SM; Grootfontein, 27.xii.1974, H. Empey, 1 ♀ NCI; Skeleton Coast Park, Geanias Water hole, 1912 BB, 24.i.1983, Lout, 1 ♂ SAM; Keetmanshoop, 29.xii.1977, H. Empey, 1 ♂ NCI; '9 miles' S. Rehoboth, 24.x.1968, J. G. Rozen & F. Martinez, 2 ♀ AMNH; Klinghardt, 1.x.1982, V. B. Whitehead, 1 ♂ SAM; Klinghardt Hills, Spitzkuppe Sud, 20.x.1974, R. H. Watmough, ♂ holotype, 8 ♂ NCI. SOUTH AFRICA: TRANSVAAL: 14 km E. Mopane, 9.xii.1974, J. G. & B. L. Rozen, 1 ♀ AMNH; CAPE PROVINCE: Gardiner's Drift, Adelaide, iii.1954, Museum Staff, 1 ♀ SAM.

***Tetraloniella abrochia* spec. nov.,** Fig. 58, 66

Tetraloniella abrochia is described here as new and takes its name from the relatively arid regions of South African and South West Africa were it occurs.

DESCRIPTION

Female. Similar to *T. watmoughi* in size.

Colour. Integument with ventral half of clypeus yellow; mandible with basal region usually partly yellow; antennal flagellum black with ventral surface reddish-black; distal regions of T1–T4 translucent orange. Pubescence mostly white; mesosomal dorsum pale yellowish; ventral surface of middle trochanter and femur with a little orange; posterodistal regions of dorsal surfaces of fore and middle tibiae blackish-orange; ventral surface of hind tibia and all tarsi orange; distal regions of T2–T3 with short fine orange hair; T5 with an orange tinge, especially posteromesally and T6 orange (basal regions of T2–T3, entire T4 and most of T5 tomentose); metasomal venter orange with a little white on sides of S2–S3.

Structure. Similar to *T. junodi.*

Male. Similar to *T. watmoughi* except as follows: basal region of mandible usually yellow; pubescence badly damaged and cannot be described; S7 as illustrated (Fig. 58).

DISTRIBUTION (Fig. 66)

This species is known to occur in South West Africa and the central Cape.

DISCUSSION

The female of this species can be easily identified by the colour of the vestiture and the facial maculation in specimens in which the mandible base is yellow. The male is very similar to *T. watmoughi,* except for the colour of the mandible and the structure of the seventh metasomal sternum. The males are similar to the females in that some specimens do not have any yellow maculation on the mandibles.

MATERIAL EXAMINED

♀ holotype, 2 ♀ 4 ♂ paratypes: SOUTH AFRICA: CAPE PROVINCE: Merweville district, 1.ii.1947, H. Zinn, ♀ holotype SAM. SOUTH WEST AFRICA: 37–47 km W, Maltahöhe, 29.iii.1979, J. G. Rozen, 1 ♀ AMNH; Rössing, near Swakopmund, 22.28S 15.02E, 12.iv.1984, J. Irish, 1 ♀ SM; Mariental, 18.xii.1974, H. Empey, 4 ♂ NCI.

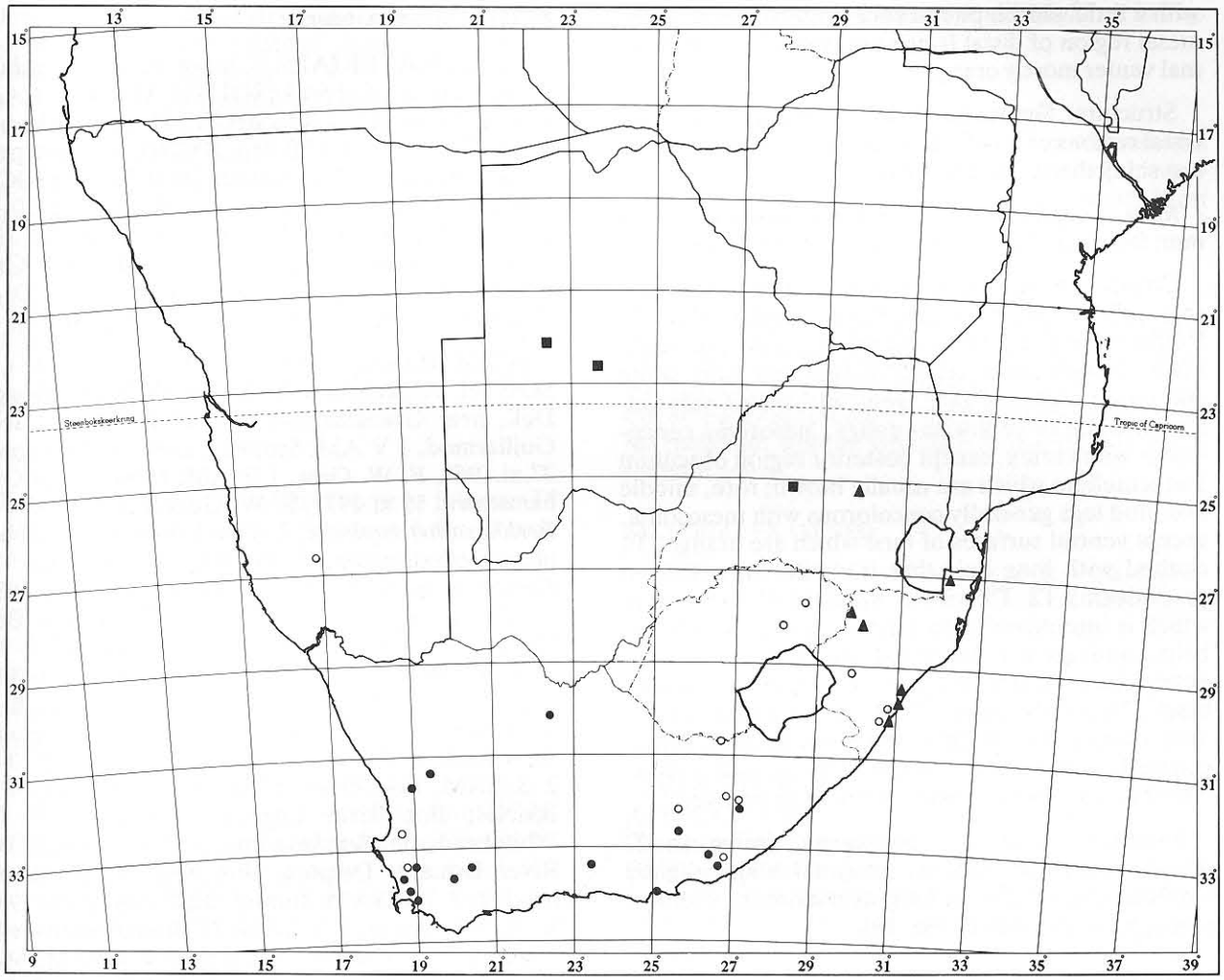

FIG. 67 Known distribution of *T. nubilis*, ●, *T. minuticornis*, ○, *T. vansoni*, ■, and *T. alboscopacea*, ▲

***Tetraloniella nubilis* (Cockerell) comb. nov.**, Fig. 59, 67

Tetralonia nubilis Cockerell, 1932: 167–168; 1933a: 133; 1939: 180 (♀ holotype, BMNH).

Tetralonia tenuifasciata Friese, 1911: 659. syn. nov. (♀ holotype, MHU).

Tetralonia natalica simmondsi Cockerell, 1939: 180. syn. nov. (♀ holotype, BMNH).

Tetraloniella nubilis is here transferred to this genus. The holotype of *T. tenuifasciata* is in MHU and not SAM as indicated in the original description (Friese, 1911a). Following the study of the holotypes of *T. tenuifasciata* and *T. nubilis* I am of the opinion that they are conspecific.

Tetraloniella simmondsi was described as a subspecies of *natalica,* which I have synonymized with *junodi.* Following a careful comparison of the type material of *T. natalica* and *T. natalica simmondsi* and *T. nubilis,* I am of the opinion that *natalica* and *simmondsi* are not conspecific but that the latter is a junior synonym of *T. nubilis.*

DESCRIPTION

Female. Lengths: head 2,7–2,9 mm; scutum 2,1–2,5 mm; fore wing 7,2–7,8 mm; body 9,2–11,5 mm.

Colour. Integument with ventral surface of antennal flagellar segments II–X usually orange or reddish-orange; distal margins of T1–T4 transparent. Vestiture on head white, except labrum which is yellowish-orange and vertex which has a yellowish-orange tinge; mesosomal dorsum mostly pale brown, scutellum dark brown; mesopleuron and propodeum white, sometimes with a tinge of pale brown; mesosomal venter pale orangish; basal three segments of fore, middle and hind legs mostly pale yellowish-orange (ventral surface of middle trochanter and femur partly orange); dorsal surfaces of fore and middle tibiae with proximal regions whitish and distal regions brownish-orange; remainder of fore and middle legs orangish; scopa pale orange or yellowish-orange; ventral surfaces of hind tibia and tarsus orange or reddish-orange and pencillus with a blackish tinge; T1 mostly concolorous with propodeum, except distal margin which is clothed with short, fine, black hair; T2–T4 with basal and lateral regions clothed with a tomentum of whitish pubescence which reaches distal margin on T4 only, distal regions sparsely clothed with short black hair (distal margin of tomentum concave so that black region is widest medially, tapering laterally); T5–T6 black

with a little whitish pubescence posterolaterally, and mesal region of distal fringe orangish-black; metasomal venter mostly orange.

Structure. Similar to *T. junodi* except as follows: distal regions of T1–T4 generally more glaborous but less shiny than in *T. karooensis*.

Male. Lengths: head 2,7–3,1 mm; scutum 2,2–2,4 mm; fore wing 7,3–8,1 mm; body 9,6–11,8 mm.

Colour. Integument with clypeus and labrum largely yellow; antennal flagellum completely black. Vestiture on head either completely pale yellowish-white or with lower region of face and gena white and upper region of face, gena and vertex pale yellowish-white or yellowish-orange; mesosoma concolorous with vertex, except posterior region of scutum and scutellum which are usually brown; fore, middle and hind legs generally concolorous with mesosoma, except ventral surfaces of tarsi which are orange; T1 clothed with long hair that is similar in colour to propodeum; T2–T5 with a white basal tomentum, which is intermixed with a few long pale yellowish-hairs, and greatly expanded laterally to meet or nearly meet distal margin; remainder of T2–T5 black; T6 mostly black; T7 black, sometimes with a little orange near pygidial plate; metasomal venter generally with lateral regions white or pale yellowish-white and mesal region yellowish or orange.

Structure. Head and mesosoma similar to *T. junodi,* except as follows: antennal scape slightly swollen, about 1,6× as long as maximum width of scape; S7 as illustrated (Fig. 59).

DISTRIBUTION (Fig. 67)

Tetraloniella nubilus apparently occurs throughout the Cape. I also have two males that are probably conspecific with *T. nubilis* from South West Africa.

DISCUSSION

The most important diagnostic feature of the female of *T. nubilis* is the colour of the forth and fifth metasomal terga. Other sympatric species in which the fifth metasomal tergum is black with a little white posterolaterally usually have the distal region of the forth tergum partly or completely white. This apparently never occurs in *T. nubilis.* The male can be easily identified by the structure of the seventh metasomal sternum.

I have two specimens from South West Africa (one from Aus the other from 39 km N. Grunau, in SAM) in which the seventh metasomal sternum closely resembles that of *T. nubilis,* but in which the colour is as follows: antennal flagellum mostly orange; pubescence on face largely white; mesosoma and legs concolorous with vertex, except venter of mesosoma which is white and ventral surfaces of tarsi which are orange; T1 largely white; T2–T7 orangish, proximal region tomentose and a little paler than relatively long hair on distal regions; metasomal venter orange. These two specimens are probably conspecific with *T. nubilis,* but more material is need to establish their true identity.

MATERIAL EXAMINED

TYPE MATERIAL: ♀ holotype of *T. nubilis:* 'Blaukrans, nr. Calvinia [SOUTH AFRICA: CAPE PROVINCE], 17, L.O., det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 816, BMNH; ♀ holotype of *T. tenuifasciata:* 'Pt. Nolloth [SOUTH AFRICA: CAPE PROVINCE], Aug' 90, R.M.L., 1910 H. Friese det.', MHU; ♀ holotype of *T. natalica simmondsi:* 'S. Africa, Cape Pen., Cape Town to Cape Point, 6–13.xi.1930, H. W. Simmonds, det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 824, BMNH.

ADDITIONAL MATERIAL: 40 ♀ 26 ♂: SOUTH AFRICA: CAPE PROVINCE: Boskey Dell, near Grahamstown, 20.xi.1966, C. F. Jacot-Guillarmod, 1 ♀ AM; Strowan, near Grahamstown, 27.xi.1968, F. W. Gess, 1 ♀ AM; Hilton, near Grahamstown, 15.xi.1977, F. W. Gess & S. K. Gess, on *Berkheya heterophylla,* 1 ♂ AM; Swartwaterspoort, near Grahamstown, 22.xi.1982, D. W. Gess, on *Berkheya* sp., 1 ♀ AM; Somerset East, 26.xi.1930, R. E. Turner, 2 ♀ 4 ♂ BMNH; St Frances Bay, Humansdorp, 31.xii.1983, V. B. Whitehead, 1 ♀ 1 ♂ SAM; Willowmore, 31.x.1967, C. F. Jacot-Guillarmod, 1 ♂ AM; DeDoorns, 19.x.1982, T. L. & R. T. Griswold, 1 ♀ BBSL; 30 km E. Montagu, 15.xi.1983, V. B. Whitehead, On *Berkheya* sp., 6 ♀ 2 ♂ SAM; Bot River, 10.xi.1933, J. Ogilvie, 2 ♀ BMNH; Bot River Lagoon, 12.xi.1982, V. B. Whitehead, on *Berkheya* sp., 3 ♀ 1 ♂ SAM: Bot River Estuary, Delport, 20.x.1982, V. B. Whitehead, 2 ♀ 1 ♂ SAM; Imrani, 3227 AA, 29.xi.1982, V. B. Whitehead, 1 ♀ SAM; Dikbome, Merweville Koup, x.1952, museum expedition, 1 ♀ SAM; Middleton, 3326 AB, 18.xi.1983, V. B. Whitehead, 1 ♀ SAM; Stellenbosch, 5.xi.1925, H. Brauns, 2 ♀ TM; Jonkershoek, near Stellenbosch, 15.xii.1980, G. A. Giliomee, 1 ♂ SU; Between Nuwerus & Doringbaai, 17.xi.1984, G. L. Prinsloo, 1 ♀ NCI; Matroosberg Strand, xii.1962, 1 ♀ SAM; '18 miles E. Touwsrivier', xii.1962, 1 ♀ 2 ♂ SAM; Nieuwoudtville, 18–22.xi.1931, T. D. A. Cockerell, 1 ♀ 1 ♂ paralectotypes BMNH, 1 ♂ BMNH, 1 ♂ AMNH; Nieuwoudtville, 31.22S 19.08E. 17.xi.1984, C. D. Eardley, on *Berkheya* sp., 11 ♀ 8 ♂ NCI; Philadelphia, 9.xi.1983, V. B. Whitehead, on *Berkheya* sp., 1 ♂ SAM.

***Tetraloniella minuticornis* (Friese) comb. nov.,** Fig 60, 67

Tetralonia minuticornis Friese, 1905a: 22 (♂ lectotype, MHU).

Tetralonia kobrowi Friese, 1911: 656–658; Strand, 1911a: 111, 144. syn. nov. (♀ & ♂ syntypes, MHU).

Tetralonia fulvomarginata Cockerell, 1920b: 303. syn. nov. (♀ holotype, BMNH).

Friese (1905a) did not designate a holotype in the original description of *T. minuticornis,* which included both sexes. I have studied the type material (in MHU) and here designate the male as the lectotype and transfer this species to the genus *Tetraloniella.*

Friese (1911) did not designate a holotype of *T. kobrowi*. The male syntype from Queenstown would, however, apparently be the most suitable specimen to be designated as the lectotype, but I have not been able to locate this material. I have, however, studied a female specimen of *T. minuticornis* from Queenstown that apparently forms part of the same series from which the type series of *T. kobrowi* was taken (this specimen compares favourably with the original description of *T. kobrowi*). I, therefore, synonymize *kobrowi* and *minuticornis*.

I have studied the holotype of *T. fulvomariginata* and *T. minuticornis* and as they are very similar I regard these two species to be conspecific.

DESCRIPTION

Female. Similar to *T. nubilis* except as follows: T5 mostly clothed with white tomentose hairs, except mesal region of distal margin which is orange or blackish-orange (this region is not clearly demarcated from the white tomentum); T6 either mostly blackish-orange or pale orange with lateral regions whitish.

Male. Lengths: head 2,7 mm; scutum 2,4 mm; fore wing 8,1 mm; body 10,2 mm.

Colour. Integument with ventral half of clypeus yellow; ventral surface of antennal flagellum orange or slightly orangish. Pubescence, head clothed with pale yellowish-white hair, except vertex which has an orange tinge; mesosoma with scutum, scutellum, pronotal lobe and tegula orange; mesopleuron, venter and propodeum yellowish-white; fore and middle legs similar to mesopleuron, except posterodistal regions of tibiae which are brownish-orange and ventral surfaces of tarsi which are orange; hind leg similar to mesopleuron, except outer surfaces of tibia and basitarsus sometimes have an orange tinge and ventral surface of tarsus orange; T1 clothed with long pale yellowish-white hair, except distal margin which is clothed with short black hair proximally and naked distally; T2–T4 with basal region clothed with a pale yellowish-white tomentum (tomentum concave posteriorly, but does not reach distal margins of terga laterally) and with long pale yellowish-white hair laterally; distal regions of T2–T4 mostly clothed with short black hair; T5 usually similar to T4, sometimes with a little pale yellowish-white hair intermixed with black posteromesally; T6 clothed with a pale yelowish-white tomentum, except for posteromesal region which is clothed with long orange hair; T7 orange; metasomal venter with long white hair laterally and short orange hair mesally, especially on S5.

Structure. Similar to *T. junodi* except as follows: antennal scape distinctly longer and more slender than in *T. junodi,* about 0,37× as long as eye and 2,2× as long as its maximum width; antennal flagellum relatively short, segment I is shortest, about 0,3× as long as scape and 0,3× as long as segment II; the latter is longest; segments III–XI are subequal in length and each a little shorter than segment II; combined length of flagellar segments I–XI is 5,4× as long as scape and twice as long as eye; fore, middle and hind legs unmodified; S7 as in Fig. 60.

DISTRIBUTION (Fig. 67)

This species has been recorded from the eastern Cape, Natal, the Orange Free State, the south-western Cape in South Africa and Aus in South West Africa.

DISCUSSION

The female of this species can only be identified with difficulty, the most important character being the colour of the fifth metasomal tergum. The male can be easily identified by the relatively short antennal flagellum and the structure of the seventh metasomal sternum.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ lectotype & ♀ paralectotype of *T. minuticornis:* 'Cradock [SOUTH AFRICA: CAPE PROVINCE], Capland, J. Wartmann, 1904 H. Friese det.', MHU; ♀ holotype of *T. fulvomarginata:* 'Krantz K. [SOUTH AFRICA: NATAL], Marley, 2.4.1917, det. T. D. A. Cockerell', B.M. TYPE HYM 17B 822, BMNH.

ADDITIONAL MATERIAL: 16 ♀ 5 ♂: SOUTH AFRICA: NATAL: Vernon Crookes Reserve, Umzinto, 30.17S 30.37E, 25–26.iii.1985, C. D. Eardley, 1 ♀ NCI; Estcourt, 4.iii.1963, H. Empey, 1 ♀ NCI; ORANGE FREE STATE: Tweeling, 27.33S 28.31E, 15.i.1986, C. D. Eardley, 1 ♀ NCI; Bethlehem, 28.15S 28.19E, 25.ii.1980, S. J. van Tonder, 1 ♀NCI; CAPE PROVINCE: 'Pr. C. Sp.', 1 ♀ 5 ♂ RNH; Queenstown, i.1905, G. Kobrow, 1 ♀ TM; Bowkerskop, 31.8.1982, V. B. Whitehead, 1 ♀ SAM; Aliwal-Noord, H. Brauns, 1 ♀ TM; Stowan, near Grahamstown, 8.i.1969, F. W. Gess, 1 ♀ AM; Kei Bridge, Great Whittlesea Road, ii. 1982, V. B. Whitehead, 1 ♀ SAM; Het Kruis, x.1947, museum expedition, 1 ♀ SAM; Stellenbosch, 25.iii.1927, P. van Rensburg, 1 ♀ SU. SOUTH WEST AFRICA: Aus, 14.ix.1983, V. B. Whitehead, 3 ♀ SAM.

***Tetraloniella vansoni* (Cockerell),** Fig. 67

Tetralonia vansoni Cockerell, 1935a: 86–88; 1935b: 559 (♀ holotype, TM).

I have studied the holotype and several paratypes of both sexes from Damara Pan (in TM). This species is here transferred to its current genus.

DESCRIPTION

Female. Lengths: head 3,0–3,4 mm; scutum 2,5–3,1 mm; fore wing 8,7–10,3 mm; body 12,7–14,0 mm.

Colour. Integument with ventral half of clypeus yellow, labrum sometimes partly yellow and ventral surface of antennal flagellar segments III–X sometimes orange. Vestiture on head white, except vertex which has a pale yellowish tinge; mesosoma white, except most of scutum is pale orange (anterior region of scutum whitish) and scutellum orange to red-

dish-orange; legs with basal three segments white, except ventral surfaces of middle trochanter and femur with a little orange; fore and middle tibiae with dorsal surfaces white proximally and black distally; fore and middle tarsi and hind tibia and tarsus black, except ventral surfaces of all tarsi have a reddish tinge (I have studied a specimen, that is apparently conspecific with *T. vansoni,* in which black regions described here are orange and ventral surfaces of tarsi are reddish-orange); T1 with long white hair basally and short black hair distally; T2 with a white tomentum basally and black distally (tomentum curves backwards laterally); T3 almost completely clothed with a white tomentum, a little black occurs along distal margin; T4 completely white and tomentose; T5 black with a narrow white cross-band extending from posterolateral regions behind dense posteromesal black fringe; T6 black; metasomal venter generally pale yellowish mesally and white laterally.

Structure. Similar to that of *T. junodi.*

Male. Lengths: head 2,9 mm; scutum 2,6 mm; fore wing 8,8 mm; body 11,5 mm.

Colour. Integument, entire clypeus and labrum yellow; ventral surface of antennal flagellum blackish-orange. Vestiture on head very pale yellowish-white; mesosoma and legs mostly very pale yellowish-white, except tegula and region of scutum behind anterior margin of tegula pale yellowish, scutellum pale yellowish-orange, and ventral surfaces of tarsi orange; T1 whitish; basal region of T2 clothed with white tomentum, distal region sparsely clothed with long, non-tomentose, pale yellowish-white, hair; T3–T6 completely clothed with white tomentum (T3–T4 sometimes with a subapical black cross-band); T7 pale orangish; metasomal venter pale yellowish-white (mesal region of S2–S5 virtually impubescent).

Structure. Similar to *T. junodi* except S7 which resembles that of *T. minuticornis* (cf. Fig. 60), to a greater or lesser extent (see p. 37).

DISTRIBUTION (Fig. 67)

Tetraloniella vansoni is known from the Transvaal and Botswana.

DISCUSSION

The female of this species can be easily identified by its colour. The male, however, closely resembles *T. alboscopacea* and can only be identified when collected in association with females.

MATERIAL EXAMINED

TYPE MATERIAL: ♀ lectotype with the following data: 'V.-L. Kal. Exp, Gomodima [BOTSWANA], 1–5/4/1930, det. T. D. A. Cockerell', TM.

ADDITIONAL MATERIAL: 5 ♀ 2 ♂: BOTSWANA: Damara Pan, 15–21.iv.1930, 1 ♀ 1 ♂ TM, 1 ♀ BMNH, 1 ♀ AMNH; Kaotwe, 8–12.iv.1930, 1 ♀ BMNH. SOUTH AFRICA: TRANSVAAL: Pienaars River, x–xi.1900, v. Jutrzencka, 1 ♀ 1 ♂ TM.

***Tetraloniella alboscopacea* (Friese) comb. nov.,** Fig. 67

Tetralonia alboscopacea Friese, 1909a: 256, 260 (♂ lectotype, MHU).

Tetralonia brunescence Cockerell, 1920b: 303–304; 1933a; 135; 1935a: 88. syn. nov. (♀ holotype, BMNH).

Friese (1909a) included both sexes in the original description. I have studied both the female and the male syntypes and here designate the male as the lectotype of this species and transfer this species to *Tetraloniella.*

The holotype of *T. brunescence* closely resembles the paralectotype of *T. alboscopacea.* I am, therefore, of the opinion that they are conspecific.

DESCRIPTION

Female. Similar to *T. nubilis* except as follows: mesosomal venter and basal three segments of legs whitish, except for orange on trochanter and basoventral surface of femur; T4 with distal region partly or completely clothed with white tomentum.

Male. Apparently inseparable from *T. vansoni,* S7 is highly variable in these two species but resembles that of *T. minuticornis* most closely.

DISTRIBUTION (Fig. 67)

This species is known from Natal and the Transvaal.

DISCUSSION

Because of the similarity between *T. alboscopacea* and *T. junodi, T. nubilis* and *T. braunsiana* in the female and *T. vansoni* in the male, accurate identifications requires series of specimens that contain both sexes. The female can be identified by the colour of the forth and fifth metasomal terga in combination with its distribution. Specimens of *T. junodi* which resemble *T. alboscopacea* apparently do not occur in Natal and the Transvaal. The male, which can be easily separated from the male of *T. junodi* by the structure of the seventh metasomal sternum, closely resembles the male of *T. vansoni* in all respects. The females of *T. alboscopacea* and *T. vansoni* are distinctly different in colour.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ lectotype & ♀ paralectotype of *T. alboscopacea:* 'Natal, Durban [SOUTH AFRICA], Stückral J., 1907 H. Friese, det.', MHU; ♀ holotype of *T. brunescence:* 'Malvern [SOUTH AFRICA], Natal, Barker, det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 2679, BMNH.

ADDITIONAL MATERIAL: 4 ♀: SOUTH AFRICA: TRANSVAAL: 10 km E. Roossenekal, 27.xi.1978, D. J. Brothers & C. Jacot-Guillarmod, 2 ♀ AM; NATAL: Hattingspruit, 22.i.1954, H. Empey, 1 ♀ NCI: Chelmsford Dam, 20 km from Newcastle, 8.ii.1972, A. Prinsloo, 1 ♀ NCI.

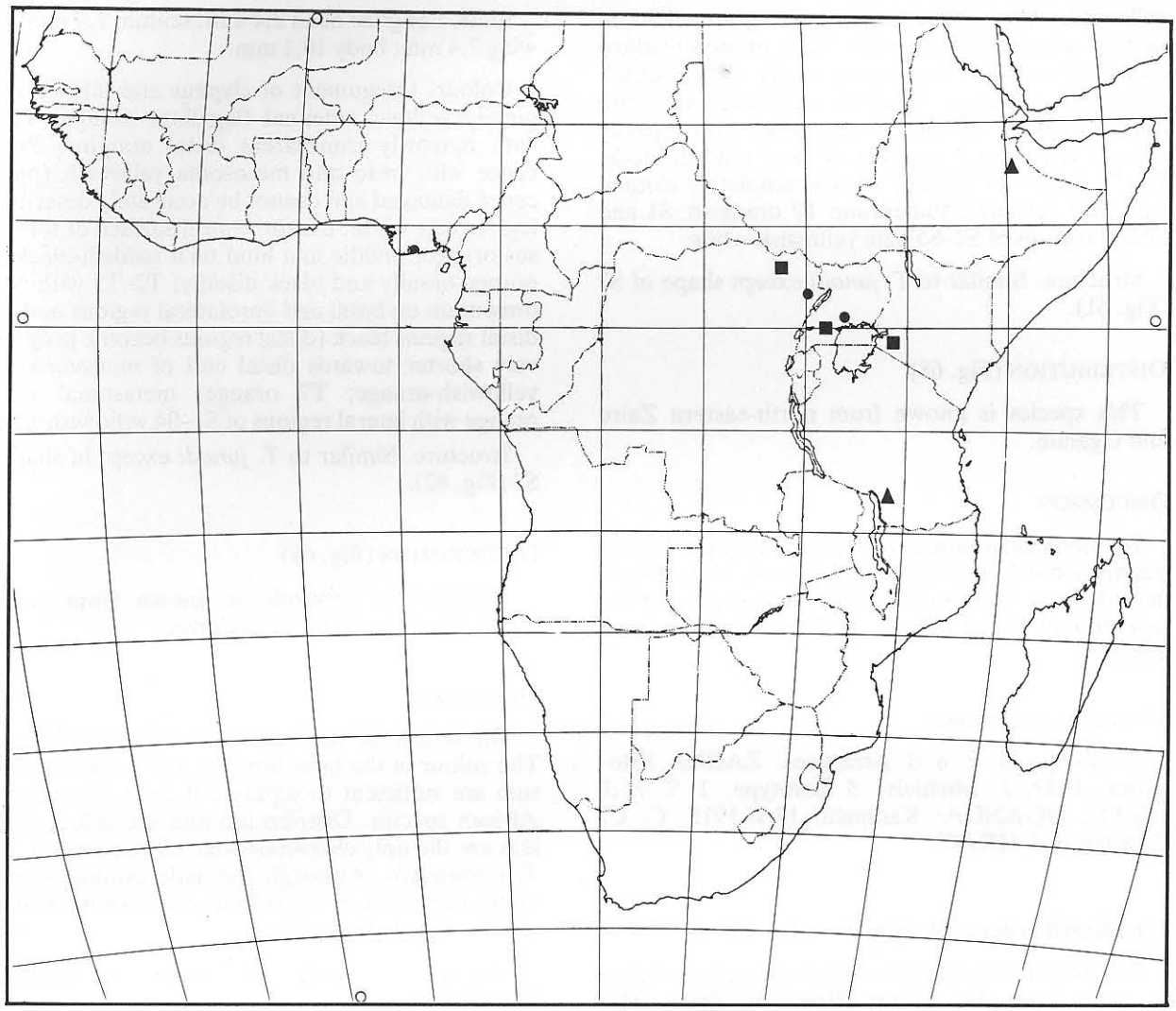

FIG. 68 Known distribution of *T. aurantiflava*, ●, *T. sierranila*, ■, and *T. ottiliensis*, ▲

***Tetraloniella aurantiflava* spec. nov.,** Fig. 61, 68

This new species' name refers to the most important external diagnostic feature of both sexes, the colour of the metasomal dorsum.

DESCRIPTION

Female. Lenghts: head 2,5 mm; scutum 2,1 mm; fore wing 7,0 mm; body 8,8 mm.

Colour. Integument, clypeus with a subapical yellow cross-band (apical margin orangish-black); ventral surface of antennal flagellum orangish; distal margin of T1–T4 translucent orangish. Vestiture on head white, except labrum which is pale yellowish-orange and vertex which is black anteriorly and orange posteriorly; mesoscutum with anterior and lateral regions orange, centre and posterior regions black; scutellum reddish-orange, tegula and pronotal lobe pale yellowish-orange; remainder of mesosoma whitish; basal three segments of all legs white, except for a little orange on middle trochanter and base of middle femur, when viewed from below; fore tibia (dorsal view) pale yellowish to yellowish-orange with a blackish tinge posterodistally and tarsus black with an orange tinge ventrally; middle tibia orange with posterodistal region of dorsal surface black and tarsus black with a little orange anteriorly; hind tibia and basitarsus pale yellowish-orange above and black below, pencillus pale yellowish-orange with a tinge of black distally; T1 pale yellowish-orange with a little black distally; T2–T4 almost completely pale orangish-yellow and tomentose, each tergum with a narrow, subapical, black cross-band; T5 pale yellowish with a tinge of orange, except mediodistal region which is blackish-orange; T6 yellowish laterally and orange mesally; metasomal venter orange with a little pale yellowish laterally on S2–S4.

Structure. Similar to *T. junodi.*

Male. Lengths: head 2,4 mm; scutum 2,0 mm; fore wing 7,2 mm; body 8,9 mm.

Colour. Integument with clypeus mostly yellow, dorsal and dorsolateral regions black; labrum yellow, except lateral and distal regions blackish; ventral surface of antennal flagellum blackish-orange; T1–T4 with relatively wide translucent brownish-orange distal margins. Vestiture on head

yellowish-white with a tinge of orangish-yellow on vertex; mesosoma generally pale orangish-yellow dorsally and yellowish-white ventrally, except scutellum which is orange; legs pale yellowish-white with dorsal surfaces of middle and hind tibiae partly orange and ventral surfaces of tarsi reddish-black; T1–T4 similar to female, T5–T6 completely clothed with pale yellowish tomentum; T7 orangish; S1 and lateral regions of S2–S5 pale yellowish-white.

Structure. Similar to *T. junodi* except shape of S7 (Fig. 61).

DISTRIBUTION (Fig. 68)

This species is known from north-eastern Zaire and Uganda.

DISCUSSION

Tetraloniella aurantiflava is unique in the colour of the metasomal dorsum and can be easily identified, in both sexes, by this character. The structure of the seventh metasomal sternum of the male is also diagnostic.

MATERIAL EXAMINED

♂holotype, 1 ♀ 8 ♂ paratypes: ZAIRE: Kilomines, 1939, J. Michiels, ♂ holotype, 1 ♀ 7 ♂ MRAC. UGANDA: Kampala, 17.xi.1915, C. C. Gowdey, 1 ♂ MRAC.

***Tetraloniella sierranila* spec. nov.**, Fig. 62, 68

Tetraloniella sierranila is a new species and takes its name from the 'Monts Bleus', in Zaire. The mountain range in which the type locality occurs.

DESCRIPTION

Female. Lengths: head 2,5–2,6 mm; scutum 2,0–2,1 mm; fore wing 7,2–7,8 mm; body 9,5–10,9 mm.

Colour. Integument with lower half to three-quaters of clypeus yellow; T1–T4 with distal margins narrowly transparent. Vestiture on head white with a yellow tinge on face and labrum and a tinge of orange on vertex; mesosoma generally orangish above and white or yellowish-white below (one specimen has a little orange infront of middle leg); legs with basal three segments white, except middle trochanter and proximal region of femur orange in ventral view; tibiae and tarsi of fore and middle legs orangish, except ventral surface of middle basitarsus blackish-orange; hind leg with scopa white, ventral surfaces of tibia and tarsus, and pencillus black; T1 whitish proximally and black distally; T2–T4 with basal and basolateral regions white and tomentose, distal regions black; T5 clothed with a white tomentum, which may become orangish distally, and with posteromesal region black and densely pubescent; T6 blackish-orange; metasomal venter with lateral regions of S2–S4 white.

Structure. Similar to *T. junodi.*

Male. Lengths: head 2,4 mm; scutum 1,9 mm; fore wing 7,4 mm; body 10,1 mm.

Colour. Integument of clypeus and labrum completely yellow; antennal flagellum orange; T1–T5 with narrowly transparent distal margins. Pubescence with head and mesosoma yellowish (pubescence damaged and cannot be accurately described); legs mostly white, except ventral surface of fore tarsus orange; middle and hind tarsi reddish-black; T1 orange basally and black distally; T2–T5 with white tomentum on basal and basolateral regions and with distal regions black (distal regions become progressively shorter towards distal end of metasoma); T6 yellowish-orange; T7 orange; metasomal venter orange with lateral regions of S1–S4 yellowish-white.

Structure. Similar to *T. junodi* except in shape of S7 (Fig. 62).

DISTRIBUTION (Fig. 68)

Tetraloniella sierranila is known from eastern Zaire, Uganda and western Kenya.

DISCUSSION

The female of this species is difficult to identify. The colour of the face, hind leg and metasomal dorsum are sufficient to separate it from other central African species. Distribution and the colour of the legs are the only characters that will separate it from *T. watmoughi.* Although the male cannot be accurately identified by its colour, the seventh metasomal sternum is diagnostic.

This species is apparently most closely related to *T. ottiliensis.*

MATERIAL EXAMINED

♂ holotype, 2 ♀ paratypes: ZAIRE: Kibali-Ituri, Geti, 1934, C. Scopa, ♂ holotype, MRAC. UGANDA: Entebbe, 13.iii.1911, C. C. Gowdey, 1 ♀ BMNH. KENYA: Kisumu, Nyanza, 8.xi.1972, R. M. Bohart, 1 ♀ BBSL.

***Tetraloniella ottiliensis* (Friese), comb. nov.**, Fig. 63, 68

Tetralonia ottiliensis Friese, 1905a: 23 (♂ lectotype, MHU).

Tetralonia femorata Friese, 1915: 266, 272, 288. syn. nov. (♂ lectotype, MHU).

I have studied both the female and the male syntypes and here designate the male as the lectotype of this species and transfer this species to the genus *Tetraloniella.*

I have studied one of the two male syntypes of *T. femorata* and here designate the specimen that I have studied as the lectotype of this species. The similarity between the lectotypes of *T. ottiliensis* and *T. femorata,* especially in the structure of the seventh metasomal sternum, strongly suggest that *ottiliensis* and *femorata* are synonymous.

DESCRIPTION

Female. Lengths: head 2,7 mm; scutum 2,6 mm; fore wing 7,3 mm; body 10,4 mm.

Colour. Integument with ventral region of clypeus, excluding distal margin, yellow; ventral surface of antennal flagellum orangish; distal margins of T1–T4 narrowly transparent. Pubescence largely white or whitish, except scutum with anterior and lateral regions yellowish and central region brown or orange; scutellum orange; upper region of mesopleuron, including pronotal lobe, yellowish; middle trochanter and femur with a little orange on ventral surfaces; fore and middle legs with distal regions of dorsal surfaces of tibiae orangish and ventral surfaces of tarsi orange to reddish-orange (middle leg more reddish than fore leg); hind leg with ventral surface of tibia orangish-black, basitarsus black, pencillus orange with a tinge of black distally; basal regions of T2–T3 with white tomentum; distal regions of T1–T3 with short black hair; T4 almost completely white; T5 white with posteromesal region black and densely pubescent; T6 orangish.

Structure. Similar to *T. junodi.*

Male. Lengths: head 2,6–2,7 mm; scutum 1,9–2,4 mm; fore wing 7,0–9,1 mm; body 8,9–10,0 mm.

Colour. Integument with ventral region of clypeus partly or completely yellow; labrum either black or yellow with lateral and distal regions black; ventral surface of antennal flagellum with an orange tinge which is sometimes very slight; distal margin of T1–T5 narrowly transparent. Pubescence on head and mesosoma, including legs, white to yellowish-white, except vertex pale yellowish, mesosomal dorsum pale yellowish-white with brown centre to yellowish-orange with central region distinctly orange; legs with a little orange near base of ventral surface of middle femur and ventral surfaces of tarsi orange to reddish-orange; T1–T5 white to pale yellowish basally, that on T2–T5 tomentose, and black distally (black region becoming progressively shorter towards distal end of metasoma); T6 white or pale yellowish; T7 pale yellowish-white with a black tinge posteromesally; metasomal venter white with hair largely confined to T1 and lateral regions of S2–S5.

Structure. Similar to *T. junodi* except for shape of S7 (Fig. 63).

DISTRIBUTION (Fig. 68)

This species is known from Ethiopia and Tanzania.

DISCUSSION

The colour of the clypeus, the hind leg and the metasomal dorsum are diagnostic of the female. The male can be identified most easily by the structure of the seventh metasomal sternum. *Tetraloniella sierranila* is apparently this species closest relative.

I have a female specimen from Mabarara, in Uganda (in BMNH), in which the clypeal mark is reduced to a yellow triangle, the mesoscutum is devoid of any brown hair (the central region of this sclerite is distinctly orange), the ventral surface of the hind tibia is orange and the distal region of the forth metasomal tergum is black. This specimen is presumably conspecific with *T. ottiliensis*. But before it can be conclusively identified, more material is needed to determine the variation in the colour of the female of this species.

MATERIAL EXAMINED

♂ lectotype & ♀ paralectotype of *T. ottiliensis:* 'D.O.-Africa, Kigonsera, 1904 H. Friese det.', MHU; ♂ lectotype of *T. femorata:* 'N.O.-Afrika, Abessinien, Harrar 11, Kristensen, 1914 H. Friese det.', MHU.

***Tetraloniella braunsiana* (Friese), comb. nov.,** Fig. 69–70, 80

Tetralonia braunsiana Friese, 1905a: 20–21; Strand, 1911b: 152; Cockerell, 1937: 280; 1939: 180 (♀ & ♂ syntypes, MHU).

Tetralonia nuda nomen nudum: Anonymous, 1958: 32.

Friese (1905a) described *T. braunsiana* from an uspecified number of specimens of both sexes that were collected at Willowmore by Dr H. Brauns and a male taken at an uspecified locality in the Cape Province. I have not studied the Willowmore type material (in ? MHU), but I have studied the specimen that was collected at an unspecified locality (in MHU). The pubescence of this specimen is in poor condition. I have also studied Brauns collection of material labelled as *T. braunsiana* (in TM) and this material is not conspecific with the type that I have studied. I, therefore, suspect that the type series of *T. braunsiana* is composite, with the Willowmore material being distinct from the syntype that I have studied. The females that were determined by Dr H. Brauns (in TM) are apparently conspecific with the female syntype, as determined by the description, and the original description of the male is unsuitable for the identification of this species. I have, therefore, based the identification of this species on the description of the female. The syntype that I have studied resembles *T. vansoni.* It cannot be accuratley identified because I am uncertain of the separating characters of *T. vansoni* and *T. alboscopacea.* The TM has two specimens that are labelled as types but these two specimens are from Addo and do not form part of the type series. This species is here transferred to the genus *Tetraloniella.*

Tetralonia nuda is only known from a catalogue of the types in east and southern African museums. This species has not been described and is, therefore, a *nomen nudum.*

DESCRIPTION

Female. Lengths: head: 2,7–3,0 mm; scutum 2,4–3,0 mm; fore wing 8,5–9,5 mm; body 10,3–11,8 mm.

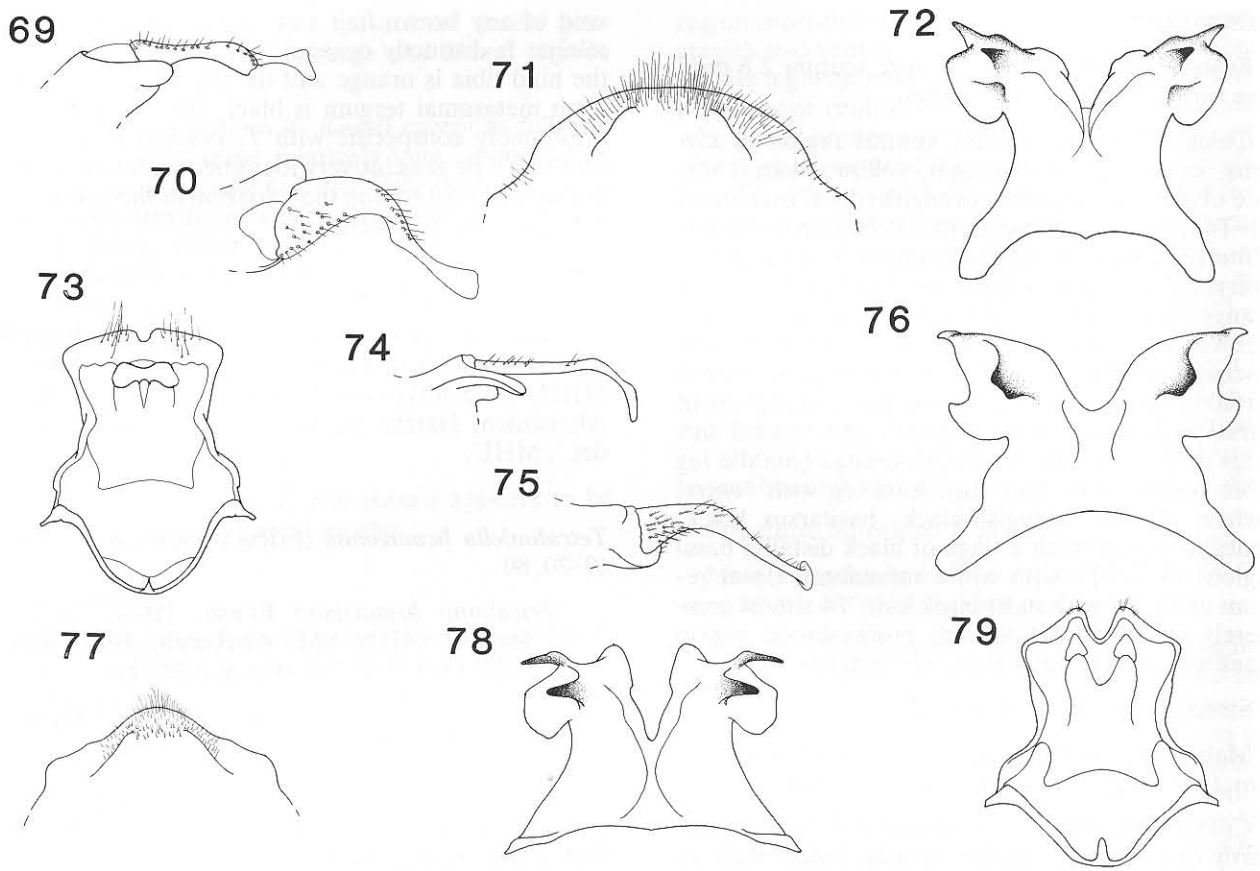

FIG. 69–79 *Tetraloniella* spp. 69–70. *T. braunsiana,* dorsal and lateral views of gonostylus of male genitalia, respectively. 71–75. *T. pulverosa.* 71–73. Ventral views of male S6–S8, respectively. 74–75. Dorsal and lateral views of gonostylus of male genitalia, respectively. 76. *T. simpsoni,* ventral view of male S7. 77–79. *T. brooksi,* ventral views of S6–S8, respectively

Colour. Integument with ventral surface of antennal flagellum not distinctly orange. Vestiture on head either white with vertex white, pale yellowish-white or yellowish-orange, or gena and lower region of face white and upper region of face and vertex brownish; anterior region of mesosomal dorsum concolorous with vertex and scutellum yellowish-orange in specimens with vertex white, orange in specimens with yellowish or yellowish-orange vertex and brown in specimens with pale brown vertex; remainder of mesosoma white, often with a pale yellowish tinge; fore and middle legs generally white with a yellow or yellowish-orange tinge, ventral surfaces of trochanter and femur partly orange and dorsal surface of tibiae and tarsi usually orange; hind leg with basal three segments whitish; hind tibia and tarsus either with scopa white, except for a little orange near distal end of basitibial plate, ventral surface of tibia and tarsus orange and pencillus blackish-red, or as occurs in specimens with a brownish dorsum, hind tibia and tarsus completely orange, except pencillus which has a reddish or brownish tinge; T1 either completely concolorous with propodeum or with anterior region concolorous with propodeum and distal margin black and largely naked; T1–T3 with a dense tomentum of short white pubescence on anterior and lateral regions and with posterior region black (black region on T2 is distinctly wider than that of T3); T4 completely and densely clothed with a white tomentum; T5 generally black or brownish-black and usually with a little white posterolaterally, occasionally posteromesal region is orangish in colour; T6 mostly blackish; metasomal venter pale orange with a little white laterally.

Structure. Similar to *T. junodi,* except as follows: maxillary palpus with 5 or 6 segments; scopa with relatively thick, unbranched, hairs and a little less densely pubescent than in *T. junodi.*

Male. Lengths: head 2,7–3,0 mm; scutum 2,4–2,6 mm; fore wing 8,2–8,7 mm; body 10,2–11,8 mm.

Colour. Integument with ventral surface of antennal flagellum usually black, distinctly orange or reddish-orange in specimens from the eastern Cape only; clypeus and labrum partly or completely pale yellow; mandible with a yellow basal spot. Vestiture on head an mesosoma similar to female (distribution of different colour varieties also similar to female, see below); legs of both colour varieties mostly white, except ventral surfaces of tarsi which are orange; T1–T4 as in female; T5 similar to T4; T6 with anterior region black and distal fringe either completely white or white laterally and pale brownish or yellowish mesally; metasomal venter similar to female.

Structure. Similar to *T. junodi,* except as follows: hind legs unmodified; gnonostylus of genitalia elbowed (Fig. 69–70).

DISTRIBUTION (Fig. 80)

Tetraloniella braunsiana appears to be endemic to southern Africa, occurring most frequently in the semi-arid areas.

DISCUSSION

This species is apparently most closely related to *T. abessinica.* This was determined by the elbowed gonostyli of the genitalia. Both sexes of these two species, however, differ in the distribution of tomentum on the metasomal terga. *Tetraloniella braunsiana* resembles *T. apicalis* and *T. brooksi* in that the scopa consists of relatively thick, unbranched, hairs.

Although specimens with 5-segmented maxillary palpi can be identified by this character, colour is the most useful character for the identification of the female of this species. But care must be taken not to confuse material of *T. junodi* that resembles *T. braunsiana* in the colour of the metasomal dorsum with the latter species. The male resembles several other southern African species in the colour of the vestiture, but can be identified by the structure of the gonostylus (Fig. 69–70). From *T. abessinica* it can be identified by the absence of tomentum on the distal regions of the second, third and forth metasomal terga.

As described above two clearly separable colour varieties of *T. braunsiana* occur in southern Africa. The one, in which the vertex and mesosomal dorsum are brownish and the scopa orange, is confined to the eastern and southern Karoo. The other variety has been collected in South West Africa, the Transvaal, the northern and southern Cape. Both varieties occur in Murrayburg in the southern Karoo. In the brownish eastern and southern Karoo populations the maxillary palpi has five segments and in specimens from the remainder of the country it has six segments. There are also a few slight differences in the male genitalia of these two varieties.

I have studied six female specimens from several widely separated localities in southern Africa that closely resemble *T. braunsiana,* except in the shape of the clypeus. All these specimens are similar to the colour variety in which the vertex and mesosomal dorsum are generally orange and the scopa white, except one specimen from Natal which is intermediate between the two varieties. The clypeus of these six females is strongly protuberant in the middle where it forms a weak horizontal carina. The region below the carina is gently concave. I am of the opinion that this material is conspecific with *T. braunsiana* and I have no explanation for the peculiar shape of the clypeus.

MATERIAL EXAMINED

79 ♀ 73 ♂: SOUTH AFRICA: TRANSVAAL: Bergvliet Forest Reserve, near Sabie, 25.05S 30.54E, 26–28.ii.1986, C.D. Eardley, 1 ♂NCI; Plat River, i–ii.1903, v. Jutrzencka, 1 ♀ 14 ♂ TM; farm Yura, 15 km E. Warmbaths, 24.57S 28.27E, iii.1985, A. P. du Toit, on *Helianthus annuus* 2 ♀ NCI; 10 km E. Settlers on Marble Hall road, 26.ii.1987, C. D. Eardley, 6 ♀ 5 ♂ NCI; De la Rey, i.1917, H. Brauns, 2 ♂ TM; NATAL: Newcaslte, A. E. Hunt, 1 ♀ SAM; ORANGE FREE STATE: Reddersburg, 20.xii.1989, H. Brauns, 1 ♀ TM; Tussen Die Riviere Reserve, near Bethulie, 30.30S 26.12E, 30.iii–3.iv.1987, C. D. Eardley, 8 ♀ 4 ♂ NCI; CAPE PROVINCE: Windsorton, 20.xii.1920, H. Brauns, 2 ♀ TM; Colesberg, 12.iii.1969. L. C. Starke, 1 ♀ (AcP 5838) NCI; Klipplaat, 13.iii.1970, L. C. Starke, 1 ♀ 1 ♂ NCI; Graaf-Reinet, 14.iii.1969, L. C. Starke, 1 ♀ (AcP 5911) NCI; Hilton, near Grahamstown, 1–17.iii.1971 & 6.iv.1987, F. W. Gess, 1 ♀ 2 ♂ (1 ♂ on *Lycium* sp.) AM; same locality, 9.v.1987, F. W. Gess, 1 ♀ AM; Middelburg, 2.xi.1972, H. Empey, 1 ♂ NCI; Dunbrody, 1900, O'Neil, det. H. Friese 1910, 1 ♀ SAM; Addo, 19.iv.1896, H. Brauns, 1 ♂ TM; Willowmore, different dates, H. Brauns, 12 ♀ 12 ♂ TM; Longhope, i–ii.1928, E. Gough, 6 ♀ BMNH; Lady Grey, 12–13.ii.1925, R.I. Nel, 2 ♀ NCI; Murraysburg, iii.1931, museum staff, 6 ♀ 7 ♂ SAM; Beaufort West district, ii.1931, museum staff, 1 ♀ 3 ♂ SAM; Victoria West, iii.1931, museum staff, 1 ♂ SAM; Merweville district, i–ii.1947, H. Zinn, 7 ♀ 6 ♂ SAM; Danielskuil, 21.ii.1940, V. B. Whitehead, 1 ♀ 2 ♂ SAM. SOUTH WEST AFRICA: 12 km W. Asab, 15.iv.1980, V. B. Whitehead, 1 ♂ SAM; Spitzkoppen, 2115 DC, 3.iii.1979, V. B. Whitehead, 1 ♀ SAM; Excelsior 285, Windhoek, 26.i–28.ii.1975, 1 ♀ SM; Gobob Mine Game Reserve No.3, 22.iv.1967, J. H. Potgieter, 1 ♀ TM; Ghaub, 1917 BD, 10.iii.1979, V. B. Whitehead, 1 ♀ SAM; 61 km. W. Omaruru, 6.iii.1979. J. G. Rozen, 10 ♀ 3 ♂ AMNH; 11 km W. Usakos, 6.iii.1977, J. G. Rozen, 1 ♀ 6 ♂; 28 km W. Seeis, 12.iii.1976, J. G. & B. L. Rozen, 1 ♂ AMNH; 38 km W. Usakos, 6.iii.1977, J. G. Rozen, 1 ♀ AMNH; Kambele, iii.1923, museum expedition, 1 ♀ SAM.

***Tetraloniella abessinica* (Friese), comb. nov.,** Fig. 80

Tetralonia abessinica Friese, 1915: 272, 287–288 (♂ lectotype, MHU).

Tetralonia obscuripes Friese, 1905a: 22 (part, ref. p. 21).

I have studied both the female and the male syntypes (in MHU) and here designate the male as the lectotype and transfer this species to *Tetraloniella.* The male paratype of *Te. obscuripes* is not conspecific with the holotype, but is conspecific with the lectotype of *T. absessinica.*

DESCRIPTION

Female. Lengths: head 2,7 mm; scutum 2,5 mm; fore wing 7,9 mm; body 11,5 mm.

Colour. Integument with antennal flagellum reddish-orange. Vestiture on head white with a tinge of yellow on face and vertex; labrum pale yellowish to yellowish-orange; mesosomal dorsum brown in centre, circumscribed with pale yellowish-brown; pronotal lobe pale yellowish-brown; remainder of mesosoma white; fore and middle legs generally whitish, ventral surfaces of middle trochanter and

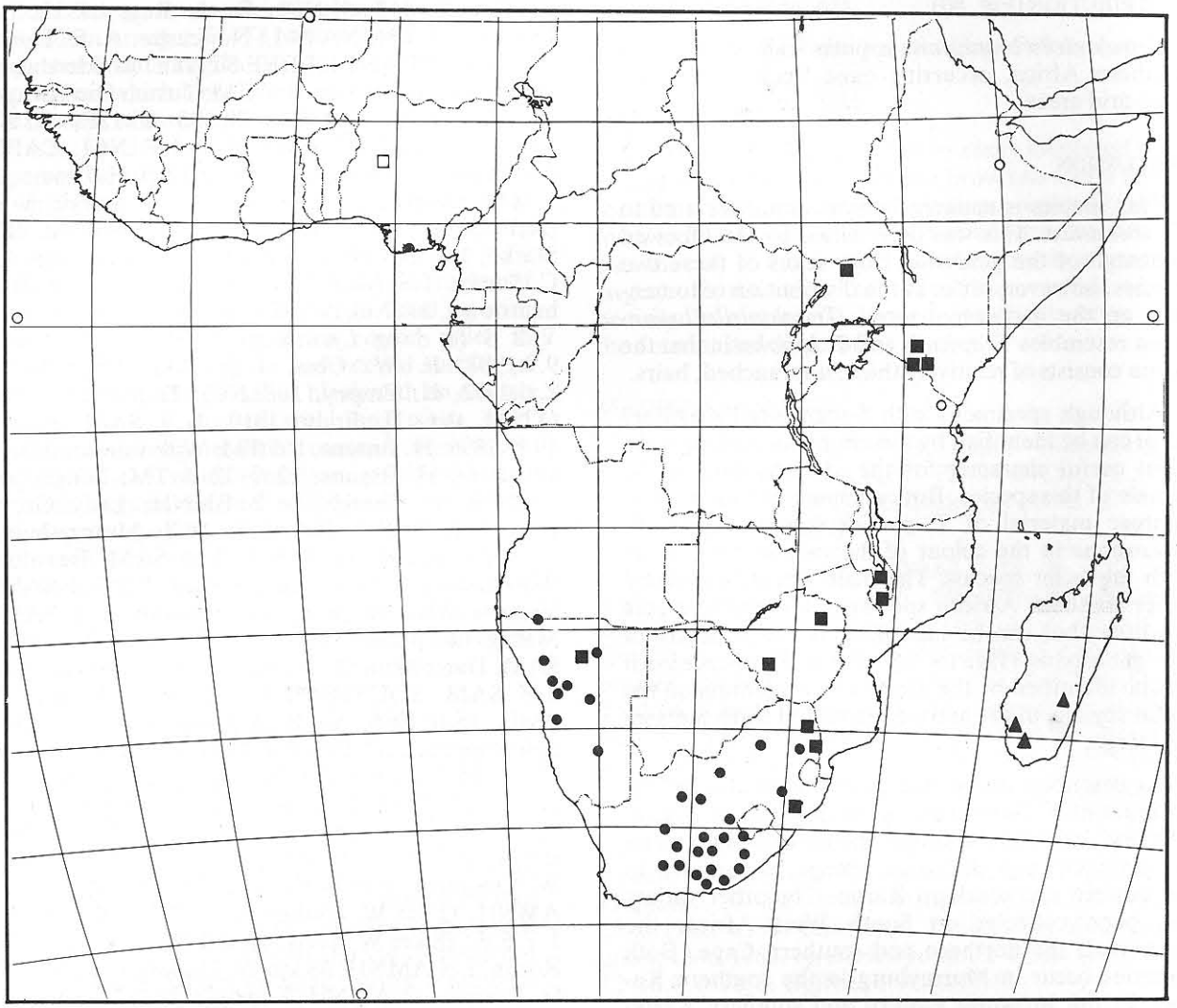

FIG. 80 Known distribution of *T. braunsiana*, ●, *T. abessinica*, ○, *T. pulverosa*, ■, *T. simpsoni*, □, *T. brooksi*, ▲

femur partly orange; distal ends of dorsal surfaces of tibiae with a brownish-orange tinge and ventral surfaces of tarsi orange; hind leg white, including scopa, except for a little brownish-orange near base of basitibial plate, pencillus and ventral surfaces of tibia and tarsus orange; T1 with long yellowish-white hair, except distal region which is apparently naked; T2 with a dense basal tomentum which is expanded posteriorly on sides to join a sparse tomentum, which is interrupted mesally, on distal region; region between proximal and distal tomentose areas black; T3 similar to T2 but with black region distinctly shorter and distal tomentum denser and continuous; T4 with a relatively sparse tomentum on proximal region and a dense tomentum on distal region (these two areas are not separated by a black cross-band); T5 black, with very little white posterolaterally; T6 blackish-orange; metasomal venter orange with a little white posterolaterally on S3–S4.

Structure as in *T. braunsiana* except as follows: maxillary palpus 6-segmented; scopa consists of relatively thick hairs most of which are unbranched, branched hairs occur mainly along anterior margin of scopa.

Male. Lengths: head 2,6 mm; scutum 2,3 mm; fore wing 7,4 mm; body 9,5 mm.

Colour. Integument, antennal flagellum mostly orange, dorsal surface blackish-orange; ventral half of clypeus and most of labrum yellow (lateral region of labrum black). Pubescence on head white, except vertex which has a pale yellow tinge; mesoscutum pale yellowish; scutellum yellowish-orange; pronotal lobe white with a tinge of yellow; remainder of mesosoma white; fore, middle and hind legs white, except ventral surfaces of tarsi orange; T1–T2 as in female; T3 similar to female except posterior half of distal region naked; T4 similar to T3, and T5 with a sparse proximal tomentum and a dense distal tomentum; T6–T7 blackish; metasomal venter sparsely clothed with white.

Structure. Similar to *T. braunsiana*.

DISTRIBUTION (Fig. 80)

This species is known from Ethiopia and Tanzania.

DISCUSSION

Tetraloniella abessinica is most closely related to *T. braunsiana*. Both sexes of *T. abessinica* differ from *T. braunisiana* in the presence of a tomentum on the distal regions of the second, third and fourth metasomal terga. The only other species with pallid tomentum on the distal regions of the second and third metasomal terga are *T. aurantiflava* and *T. apicalis*. The former occurs in central Africa and is much smaller and the latter is confined to South Africa. The males of these species can be identified by the structure of the sixth, seventh and eighth metasomal sterna in combination with the gonostyli of their genitalia.

MATERIAL EXAMINED

♂ lectotype & ♀ paralectotype of *T. abessinica:* 'NO.-Africa, Abessinien, Harrar 11 [ETHIOPIA], Kristensen, 1911 H. Friese, det.', MHU; 1 ♂ paratype of *T. obscuripes:* 'D. Ost-Afrika, Usambara [TANZANIA], Kwai, P. Weise S., 1904 H. Friese det.', MHU.

***Tetraloniella pulverosa* (Friese),** comb. nov., Fig. 71–75, 80

Tetralonia pulverosa Friese, 1911: 658–659; 1916: 419, 442; Cockerell, 1937: 280 (♂ lectotype, MHU).

Tetralonia fulvula Cockerell, 1930: 342 syn. nov.(♀ holotype, MRAC).

Tetralonia pulverosa fulvula Cockerell: Cockerell, 1937: 280.

Tetralonia pulverosa chilwensis Cockerell, 1937: 280. syn. nov. (♀ holotype, BMNH).

Friese (1911) described both sexes of *T. pulverosa*. I have studied the type material (in MHU) and here designate the male syntype as the lectotype of this species, which I here place in the genus *Tetraloniella*.

In 1937 Cockerell mentioned that *fulvula* and *pulverosa* are not specifically distinct, but that *T. pulverosa* varies geographically and that *fulvula* represented the race/subspecies that occurred near Lake Kivu in Zaire and *chilwensis* the race/subspecies that occurs near Lake Chilwa in Malawi. Although *T. pulverosa* is a very variable species, I am of the opinion that the different coloured specimens are not geographically separable and cannot be recognized as separate subspecies.

DESCRIPTION

Female. Lengths: head 2,5–2,7 mm; scutum 2,3–2,7 mm; fore wing 7,4–8,0 mm; body 9,5–10,2 mm.

Colour. Integument with clypeus largely yellow, labrum either black or partly black and partly yellow and basal region of mandible either yellow of black; ventral surface of antennal flagellum orange, except segment I and part of segments II which are blackish; T1–T3 each with a short transparent distal margin. Pubescence on gena white, face white or pale yellowish and vertex orange; mesosoma with dorsum orange, mesopleuron and propodeum generally with upper regions orange and gradually becoming paler towards venter, the latter very pale yellowish-white; fore leg mostly whitish or very pale yellowish, except dorsal surface of tibia and ventral surface of basitarsus which are often orangish; middle leg similar to fore leg, except ventral surfaces of trochanter and femur partly orange and ventral surface of basitarsus black; hind leg with basal three segments mostly white; hind tibia and tarsus range from completely black to white with a little orange near distal end of basitibial plate, ventral surface of tibia white proximally and black distally and ventral surface of basitarsus, including pencillus, black; subvertical surface of T1 pale yellowish and either entire dorsal surface yellowish-orange or anterior and lateral regions of dorsal surface pale yellowish with an orange tinge and distal region black; T2 completely clothed with yellowish-orange tomentum; T3 with basal region clothed with a pale yellowish tomentum and distal region with a very pale yellowish or white tomentum, these two regions often separated by a little black and with a very narrow black fringe on distal margin; T4 similar to T3 but almost completely devoid of any black (tomentum on basal region intermixed with a few long black setae); T5 completely black, except for a little white on lateral region; T6 black; metasomal venter clothed with orange or blackish setae, except lateral regions of S1–S5 which are partly white.

Structure. Similar to *T. junodi.*

Male. Lengths: head 2,6–2,9 mm; scutum 2,3–2,4 mm; fore wing 7,6–8,8 mm; body 10,3–11,8 mm.

Colour. Integument with almost entire clypeus and basal region of mandible yellow; labrum mostly very pale yellow, almost white; antennal flagellum with proximal seven segments orange and distal four blackish; T1–T3 each with a narrow transparent distal margin. Pubescence on head ranges from white with a little pale yellowish-white on vertex to white ventrally on both face and gena, yellowish on remainder of face and gena and orange on vertex; mesosomal dorsum, tegula, pronotal lobe, upper region of pleuron and region behind wings concolorous with vertex; remainder of mesopleuron, venter and propodeum white or pale yellowish-white; fore, middle and hind legs more or less concolorous with lower region of mesopleuron, except ventral surface of tarsi which are usually orange, middle and hind tarsi sometimes black; T1 with subvertical surface concolorous with propodeum and dorsal surface pale yellowish-white in pale coloured specimens and orange in more intensely coloured specimens; T2 clothed with a tomentum of yellowish-orange or orange pubescence (lateral regions occasionally white), except for a narrow fringe of sparse black hair near distal margin; T3 similar to T2, except lateral and posterolateral regions, and occasionally entire posterior region, white; T4–T5 completely clothed with a tomentum of white or orangish pubescence, except basal region of tomentum on each tergum is mixed with relatively long black hairs; T6

black; T7 mostly black, with a little white or yellowish posterolaterally; metasomal venter generally with mesal region pale yellowish and lateral regions white.

Structure. Similar to *T. junodi* except as follows: flagellar segments II–XI are each gently curved giving the flagellum a wavy appearance. Mesosoma: fore and middle legs unmodified; hind femur with a distinct tubercle on ventral surface, hind tibia strongly swollen near base of posterior tibia spur. Metasoma: S6–S8 as illustrated (Fig. 71–73); gonostylus of genitalia simple, but distinctly longer, in relation to penis valve, than in *T. junodi* and with distal end curved inwards (Fig. 74–75).

DISTRIBUTION (Fig. 80)

Tetraloniella pulverosa apparently occurs throughout east Africa from Kenya and Uganda to Natal and has also been recorded from northern South West Africa.

DISCUSSION

This species is most closely related to *T. simpsoni.* This relationship was determined by the colour of the metasomal dorsum, the structure of the sixth, seventh and eighth metasomal sterna and the gonostylus of the genitalia. As the female of *T. simpsoni* is unknown, I am unable to describe the diagnostic features of the females of these two species. The males can be easily identified by the colour of the middle and hind legs and the structure of the seventh metasomal sternum.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ lectotype of *T. pulverosa:* 'Shilouvane [SOUTH AFRICA], N. Transvaal, (Junod), 1907 H. Friese det.', MHU; ♀ holotype of *T. fulvula:* 'Kabare [ZAIRE], 21.viii.1914, Dr J. Bequaert, det. T.D.A. Cockerell', MRAC; ♀ holotype of *T. pulverosa chilwensis:* 'Nyasaland, S.W. of Lake Chilwa [MALAWI], 9. Jan. 1914, S.A. Neave, det. T.D.A. Cockerell', B.M. TYPE 17B 811, BMNH.

ADDITIONAL MATERIAL: 9 ♀ 23 ♂: UGANDA: Bank of Nile near Kakindu, 24–25.viii. 1911, S. A. Neave, 1 ♂ BMNH. KENYA: Nairobi, 7.v.1911, 1 ♀ 2 ♂ BMNH: Nairobi, 23.iv.1916, W. A. Lamborn, 1 ♀ BMNH; around Marsabit, x.1911, S. A. Neave, 1 ♂ BMNH; Magadi Bay, v.1912, F. G. Hamilton, 1 ♂ BMNH; 30 'miles' from Magadi Junction, v.1912, F. G. Hamilton, 1 ♂ BMNH; Masai Reserve, 27.iv. 1913, T. J. Anderson, 3 ♂ BMNH. ZAMBIA: Buyamungama, 14.i.1911, Silverlock, 1 ♂ BMNH. MALAWI: S. W. Lake Shilwa, 9.i.1911, S. A. Neave, 2 ♀ BMNH; Mlanje (= Sapitwa), 2.i.1914, S. A. Neave, 1 ♀ BMNH; Zomba, xii.1913, H. S. Stannus, 1 ♀ BMNH. ZIMBABWE: Mazoe, xii.1905, G.A.K. Marshall, 8 ♂ BMNH; Salisbury (= Harare), ii.1906, G. A. K. Marshall, 1 ♂ BMNH; Bulawayo, 11.i.1924, R. H. R. Stevenson, 1 ♂ TM. SOUTH AFRICA: TRANSVAAL: the following two localities are in the Kruger National Park: Letaba, 2331 DC, 16.xii.1965, A., L. & H. Braack, 2 ♀ KNP; Skukuza, 24.59S 31.33E, 18–21.i.1984, C. D. Eardley, 1 ♂ NCI; Skukuza, 14.xii.1965, A. & H. Braack, 1 ♂ KNP; Plat River, i–ii. 1923, v. Jutrzencka, 3 ♂ TM; NATAL: Mfongosi, i.1917 e ii.1923, W.E. Jones, 1♀ 1 ♂ SAM. South West Africa: SOUTH WEST AFRICA: Kaoko Otavi, iii.1926, museum expedition, det. A. J. Hesse, 1 ♀ 3 ♂ SAM.

***Tetraloniella simpsoni* (Meade-Waldo), comb. nov.,** Fig. 76, 80

Tetralonia simpsoni Meade-Waldo, 1914: 400, 402 (♂ holotype, BMNH).

Tetraloniella simpsoni is here transferred to its current genus.

DESCRIPTION

Female. Unknown.

Male. Similar to *T. pulverosa* in size.

Colour. Integument with clypeus yellow, except ventral margin which is brownish-orange, antennal flagellar segments II–IV black with an orange area in middle of each segment; segments V–IX orange with black ends; T1 yellowish and translucent. Pubescence, head with face pale yellowish; gena pale yellowish anteriorly to white posteriorly; vertex pale yellowish with a tinge of orange; mesosomal dorsum and pronotal lobe similar to vertex; mesopleuron pale yellow, except region behind wings and propodeum black; venter white; fore leg with coxa, trochanter and femur white, tibia pale yellowish to yellowish-orange, tarsus pale yellowish dorsally and orange ventrally; middle and hind legs black, except coxae and trochanters which are pale brownish-white; T1 black; T2–T6 clothed with an orange tomentum; T7 pale orange; venter yellow with lateral regions of S3–S5 clothed with white hair.

Structure. Similar to *T. pulverosa* except disc of S7 (Fig. 76).

DISTRIBUTION (Fig. 80)

This species is only known from the type locality which is in northern Nigeria.

DISCUSSION

This species is apparently most closely related to *T. pulverosa.* It can be easily identified by the completely orange tomentose second metasomal tergum in combination with the colour of the middle and hind legs, the colour of the propodeum and the first metasomal tergum and the structure of the seventh metasomal sternum.

MATERIAL EXAMINED

♂ holotype: 'N. Nigeria, J. J. Simpson, 1912–460, Bokani, 5.9.10.10, det. G. Meade-Waldo', B.M. TYPE HYM. 17B 812, BMNH.

***Tetraloniella brooksi* spec. nov.**, Fig. 77–80

This new species is endemic to Madagascar and is the only known species of the Eucerini that occurs on this island. It is named for the collector of the holotype, Dr R. W. Brooks of the SEM.

DESCRIPTION

Female. Lengths: head 2,4–2,7 mm; scutum 2,2–2,4 mm; fore wing 7,2–7,8 mm; body 9,4–9,9 mm.

Colour. Integument with ventral surface of antennal flagellum orange; lower region of clypeus, excluding ventral margin, yellow; basal region of mandible yellow. Vestiture on gena whitish; face white to yellowish-brown and vertex blackish; mesosoma white with a little black on scutum and scutellum in pale specimens and orangish-white with dorsum brownish-orange and black in dark coloured specimens; fore leg similar to mesopleuron, except dorsal surface of tibia brownish to black and ventral surface of tarsus orange; middle leg similar to fore leg, except for a little orange on ventral surfaces of trochanter and femur and dorsal surfaces of tibia and basitarsus sometimes completely black; hind leg white or whitish, specimens with scopa white have ventral surface of basitarsus orange and specimens in which scopa has a blackish tinge have ventral surface of basitarsus black; T1 concolorous with propodeum, except distal region black; T2 with basal and basolateral regions clothed with a yellowish-white to yellowish-orange tomentum, remainder of T2 black; T3 almost completely clothed with yellowish tomentum, proximal and distal regions sometimes separated by a little black; T4 either similar to T3 or black basally with a little yellow tomentum distally; T5 largely black or blackish, sometimes with a little white posterolaterally, or with sparse white tomentum proximally and black distally; T6 black; metasomal venter black to blackish-orange.

Structure. Similar to *T. junodi,* except scopa consists of relatively thick, unbranched, hairs.

Male. Lengths: head 2,1–2,4 mm; scutum 1,5–2,1 mm; fore wing 6,5–7,9 mm; body 7,2–8,6 mm.

Colour. Integument with almost entire antennal flagellum orange, dorsal surface of flagellum with a blackish tinge; entire clypeus yellow, except ventral margin which is translucent orange; labrum and basal region of mandible yellow. Pubescence on head mostly white, vertex brownish-orange; mesosoma mostly white, scutum, and scutellum partly brownish-black; legs whitish with an orange tinge on ventral surface of middle femur and ventral surfaces of all tarsi orange; T1 with basal region clothed with long pale yellowish hairs and distal region black; T2–T3 with yellowish basal tomentum, which is greatly expanded laterally, and black distally; T4–T5 almost completely clothed with yellowish tomentum, posteromesal region with a little black; T6 completely pale yellowish; T7 orangish-black; metasomal venter pale yellowish-white, except S5 which has an orange tinge posteromesally.

Structure. Similar to *T. junodi* except as follows: proximal region of hind femur with a distinct carina, which ends abruptly about one-third from base on ventral surface; S6–S8 as illustrated (Fig. 77–79); gonostylus of genitalia unbranched, curved downwards near middle and expanded a little distally, similar to that of *T. pulverosa* (cf. Fig. 74–75).

DISTRIBUTION (Fig. 80)

This species is endemic to Madagascar.

DISCUSSION

This species can be identified most easily by the fact that it is the only eucerine bee that occurs in Madagascar. The female can, however, be accurately identified by its colour and the structure of the scopa and the male by the structure of the sixth and seventh metasomal sterna.

The last three metasomal sterna and the gonostylus of the genitalia resemble those of *T. pulverosa* and *T. simpsoni* most closely, suggesting that these two species are its closest relatives. The female of *T. brooksi,* however, is unlike to females of *T. pulverosa* and *T. simpsoni* in that the scopa consists of thick, unbranched, hairs and the second metasomal tergum is not completely clothed with pallid tomentum. The scopa of *T. brooksi* resembles that of *T. braunsiana* and *T. apicalis* most closely.

MATERIAL EXAMINED

♂ holotype, 13 ♀ 18 ♂ paratypes: MADAGASCAR: 'N.E. Madagascar', Ambodivoangy, x.1961, J. Vadon, 6 ♀ MRAC: Beza Mahafaly Reserve, 23.42S 44.42E, 18 & 21.xi.1984, R. W. Brooks, ♂ holotype, 6 ♀ 16 ♂ SEM (1 ♀ on Tiliaceae, 3 ♀ on *Grewia* sp.); 30 km S.E. Toliera, Ambohimahavelona, 29.xi.1986, J. W. Wenzel, 1 ♀ 4 ♂ SEM; Bekily, 2 ♂ MNHN.

***Tetraloniella ogilviae* (Cockerell), comb. nov.**, Fig. 81–86, 92

Tetralonia ogilviae Cockerell, 1935b: 557–559 (♂ holotype, BMNH).

Tetralonia ogilviana Cockerell, 1943: 571–572. syn. nov. (♂ holotype, BMNH).

Cockerell's descriptions (1935b, 1943) of *T. ogilviae* and *T. ogilviana* do not indicate any clear differences between these two species. However, in 1943 he did mention that the abdomens of these two species differ, but failed to describe the differences. I have studied the holotypes of both *T. ogilviae* and *T. ogilviana* and was unable to find any clear differences between these two specimens. I, therefore, synonymize *ogilviae* and *ogilviana* and place this species in the genus *Tetraloniella.*

DESCRIPTION

Female. Lengths: head 2,8–3,1 mm; scutum 2,7–2,9 mm; fore wing 8,6–9,2 mm; body 11,2–12,1 mm.

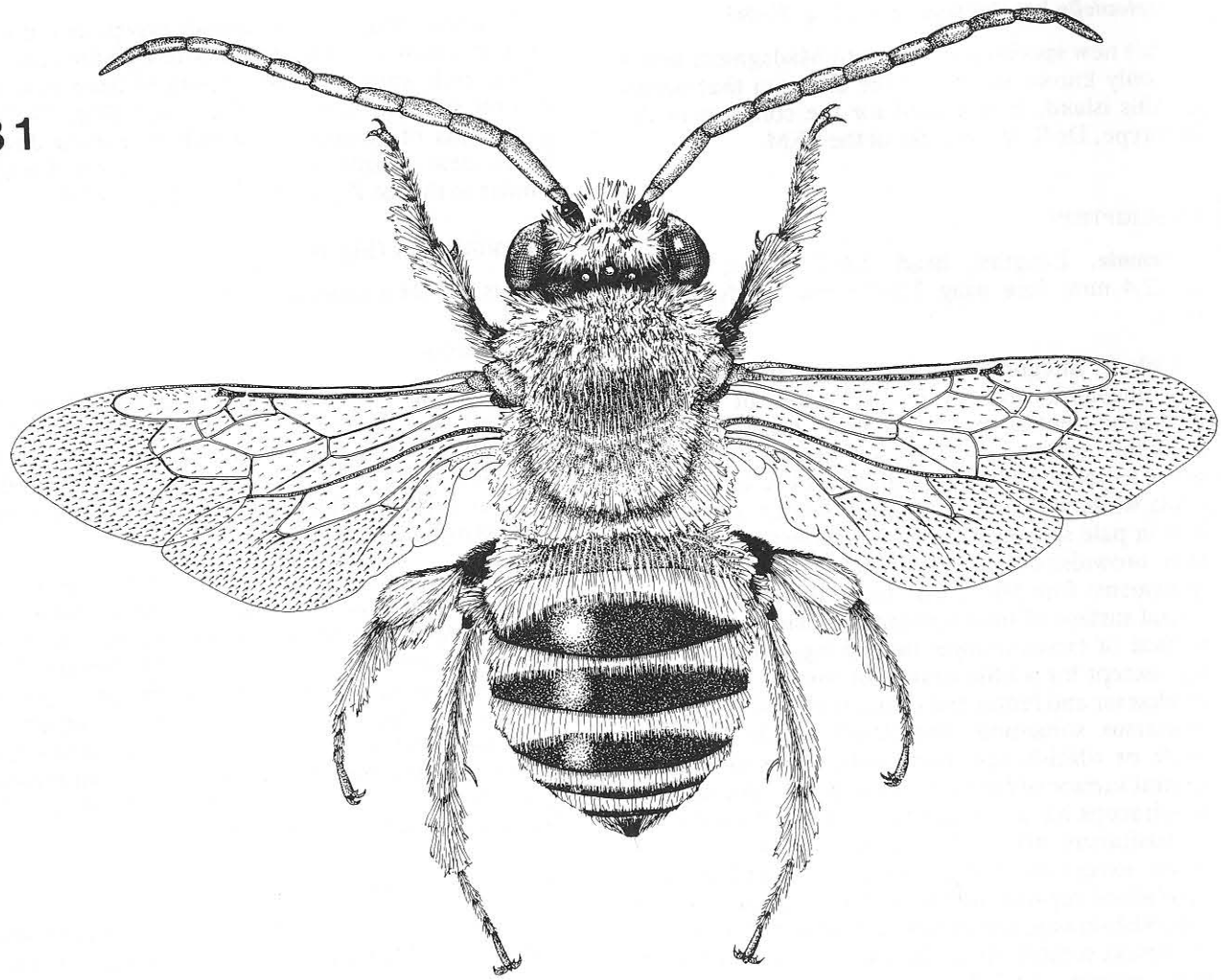

FIG. 81 Habitus of male *T. ogilviae*

Colour. Integument with clypeus usually completely black, sometimes with a little yellow ventrally; basal region of mandible usually mostly yellow, occasionally black; ventral surface of antennal flagellum partly or completely orange. Pubescence on head white and usually with a tinge of yellow on vertex; mesoscutum ranges from pale yellowish to orange; scutellum ranges from orange, in paler specimens, to reddish-orange in more intensely coloured specimens; remainder of mesosoma mostly white, except upper region of mesopleuron which sometimes has a yellowish tinge; fore and middle legs usually mostly white or very pale yellowish, except ventral surface of middle trochanter and basoventral region of middle femur orange, distal ends of dorsal surfaces of tibiae which are usually brownish-orange and occasionally black, and tarsi mostly orangish, dorsal surface yellowish-orange and ventral surface reddish-orange; hind leg with basal three segments white; hind tibia and basitarsus with scopa white, except for a little orange or brownish-orange near distal end of basitibial plate, and with ventral surfaces orange, pencillus brownish-orange; T1 with subvertical and anterior region of horizontal surface white; remainder of T1 black, except narrow distal margin which is naked; T2 with a dense white tomentum basally and laterally, distal region clothed with short black hair; T3 largely clothed with short white pubescent hair, except for a narrow black cross-band near middle of tergite and distal margin with a narrow fringe of short black hairs; T4 with a narrow band of black pubescence basally and with remainder of tergite densely clothed with a short white pubescence; T5 mostly black, distal fringe white laterally and sometimes brownish-orange mesally; T6 similar to T5; metasomal venter generally yellowish-orange or blackish mesally and white laterally, except S6 which is clothed with short brownish-orange or black hairs.

Structure. Similar to *T. junodi,* except scopal hairs with relatively few branches that are confined to their distal ends.

Male. Lengths: head 2,5–2,9 mm; scutum 2,5–2,9 mm; fore wing 8,9–9,5 mm; body 10,5–12,6 mm.

Colour. Integument with clypeus and labrum completely pale yellow; basal region of mandible yellow; ventral surface of antennal flagellum orange; T1–T5 with narrow greyish semi-transparent distal margins. Pubescence on head white or pale yellowish, sometimes with an orange tinge, and vertex usually a little more yellowish or orange than remainder of head; mesosoma generally concolorous with vertex, except

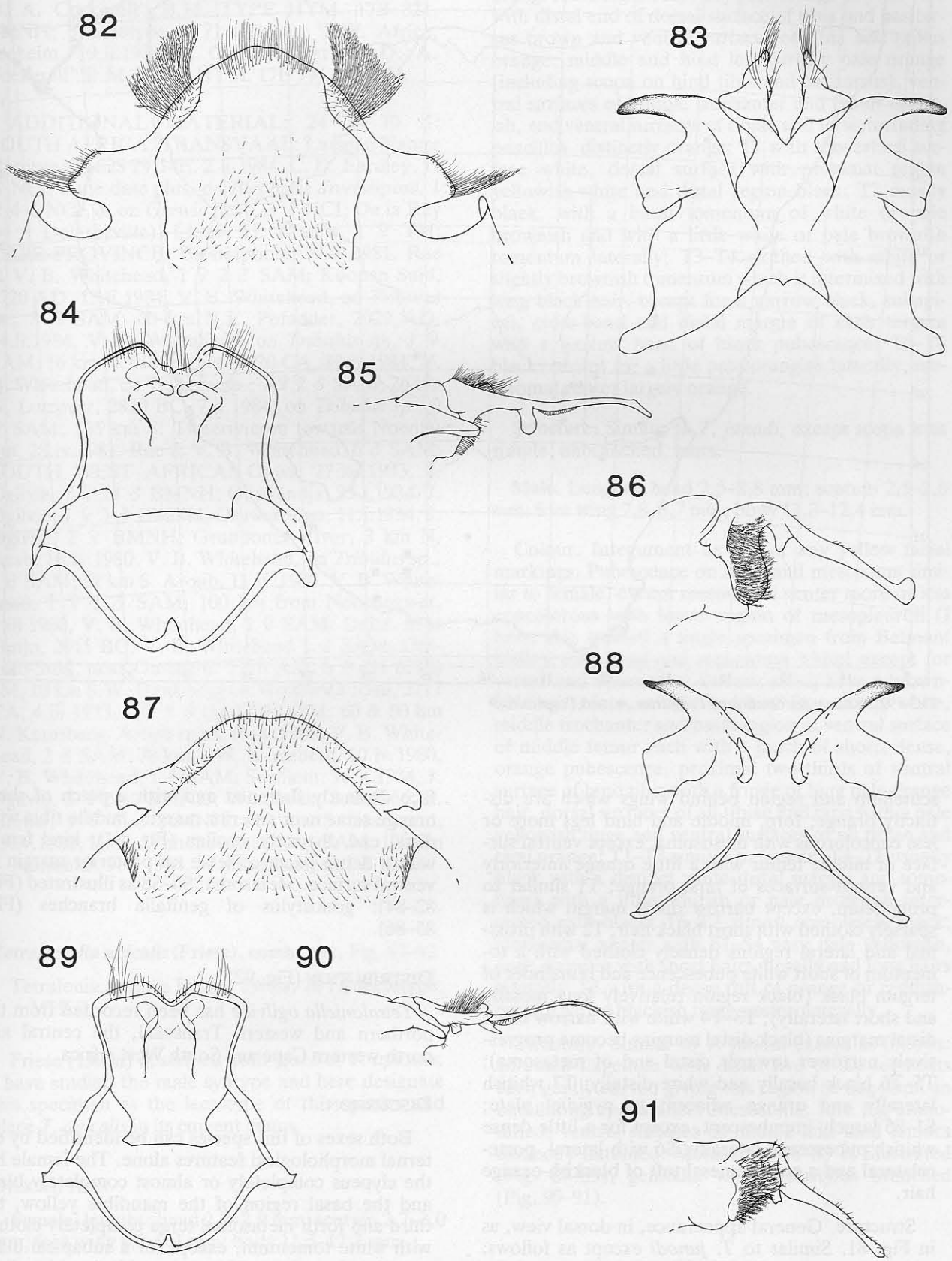

FIG. 82–91 *Tetraloniella* spp. 82–86. *T. ogilviae*. 82–84. Ventral views of male S6–S8, respectively. 85–86. Dorsal and lateral views of gonostylus of male genitalia, respectively. 87–91. *T. apicalis*. 87–89. Ventral views of male S6–S8, respectively. 90–91. Dorsal and lateral views of male gonostylus, respectively

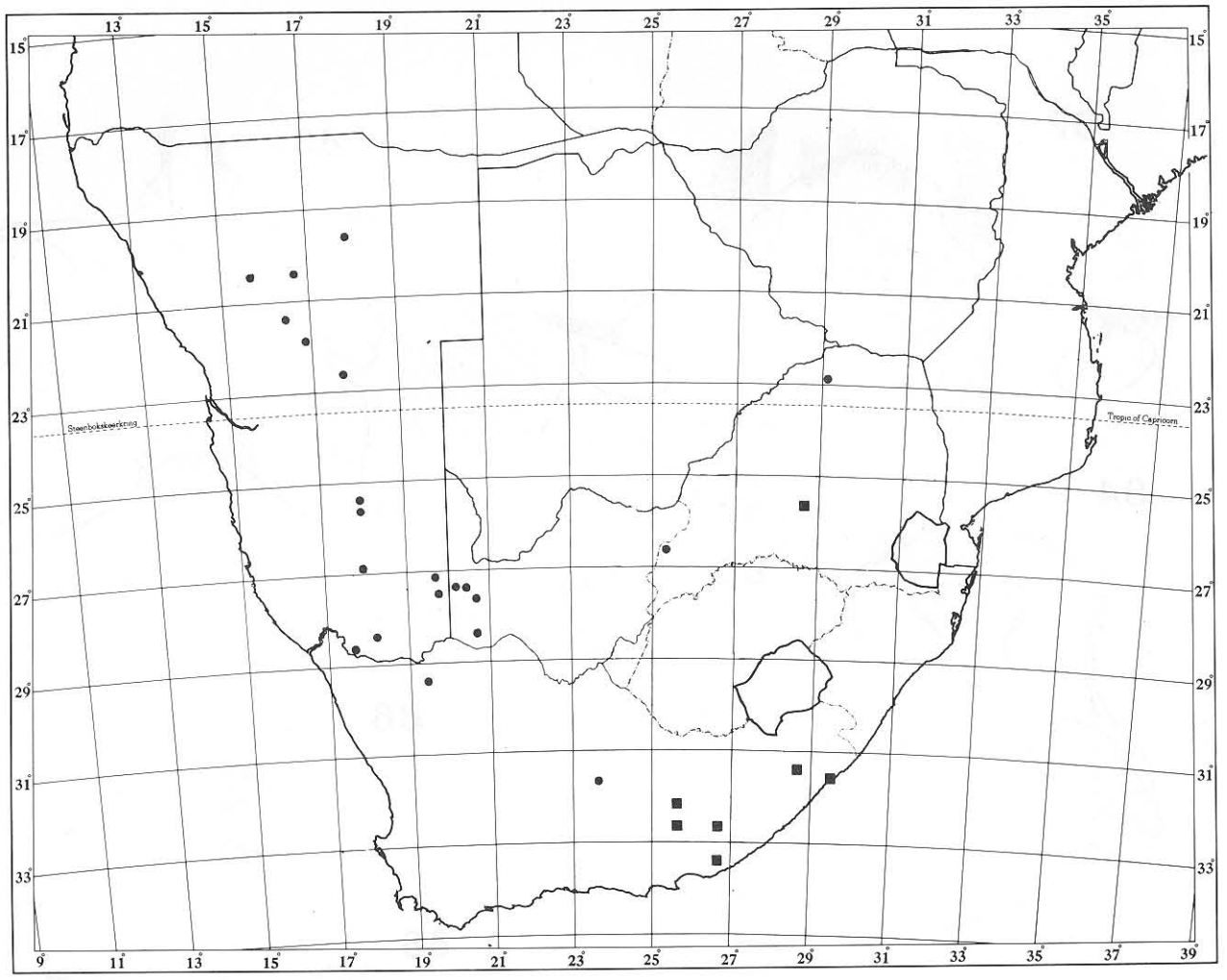

FIG. 92 Known distribution of *T. ogilviae*, ●, and *T. apicalis*, ■

scutellum and region behind wings which are distinctly orange; fore, middle and hind legs more or less concolorous with mesosoma, except ventral surface of middle femur with a little orange anteriorly and ventral surfaces of tarsi orange; T1 similar to propodeum, except narrow distal margin which is sparsely clothed with short black hair; T2 with proximal and lateral regions densely clothed with a tomentum of short white pubescence and remainder of tergum black (black region relatively long mesally and short laterally); T3–T4 white with narrow black distal margins (black distal margins become progressively narrower towards distal end of metasoma); T5–T6 black basally and white distally; T7 whitish laterally and orange adjacent to pygidial plate; S1–S5 largely impubescent, except for a little dense whitish pubescence laterally; S6 with lateral, posterolateral and a posteromesal tuft of blackish-orange hair.

Structure. General appearance, in dorsal view, as in Fig. 81. Similar to *T. junodi* except as follows: antennal segments III–XI each gently curved giving the flagellum a wavy appearance. Mesosoma: fore leg with a broad fringe of pale yellowish hair on posterodistal region of tibia and posterior margin of basitarsus (Fig. 81); middle femur with ventral surface distinctly flattened and with a patch of short orange setae near anterior margin, middle tibia with distal end distinctly swollen (Fig. 81); hind femur with a dense patch of setae on posterior margin of ventral surface. Metasoma: S6–S8 as illustrated (Fig. 82–84); gonostylus of genitalia branches (Fig. 85–86).

DISTRIBUTION (Fig. 92)

Tetraloniella ogilviae has been recorded from the northern and western Transvaal, the central and north-western Cape and South West Africa.

DISCUSSION

Both sexes of this species can be identified by external morphological features alone. The female has the clypeus completely or almost completely black and the basal region of the mandible yellow, the third and forth metasomal terga completely clothed with white tomentum, except for a subapical black cross-band, and the fifth tergum black with a little white posterolaterally. The male of *T. ogilviae* can be easily identified by the swollen middle tibia. The last three metasomal sterna and the gonostylus of the genitalia are also distinct.

MATERIAL EXAMINED

TYPE MATERIAL: ♀ holotype of *T. ogilviae:* 'S.W. Africa, Otavi, 27.xii.1933, L. Ogilviae, det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 821, BMNH; ♂ holotype of *T. ogilvana:* 'S.W. Africa, Seeheim, 19.ii.1934, J. Ogilviae, det. T. D. A. Cockerell', B.M. TYPE HYM. 17B 794, BMNH.

ADDITIONAL MATERIAL: 24 ♀ 70 ♂: SOUTH AFRICA: TRANSVAAL: Langjan Nature Reserve, 22.52S 29.14E, 2.ii.1984, C. D. Eardley, 11 ♂ NCI; same date plus, on *Blepharis diversispina,* 1 ♀ 4 ♂ NCI, & on *Grewia flava,* 1 ♂ NCI; De la Rey (= ? Delareyville), i.1919, H. Brauns, 1 ♀ TM; CAPE PROVINCE: Biesiespoort, 29.iv.1981, Rae & V. B. Whitehead, 1 ♀ 2 ♂ SAM; Koopan Suid, 2720 AD, 13.ii.1984, V. B. Whitehead, on *Tribulus sp.,* 3 ♂ SAM; 60 km N.E. Pofadder, 2929 AD, 14.ii.1984, V. B. Whitehead, on *Tribulus sp.,* 1 ♀ SAM; 16 km N. Noenieput, 2720 CA, 13.ii.1984, V. B. Whitehead, on *Tribulus sp.,* 1 ♀ 2 ♂ SAM; 26 km N. Lutzputz, 2820 BC, 7.ii.1984, on *Tribulus sp.,* 2 ♀ SAM; 135 km S. Tweerivieren towards Noenieput, 28.iv.1981, Rae & V. B. Whitehead, 6 ♂ SAM. SOUTH WEST AFRICA: Otavi, 27.xii.1933, J. Ogilvie, 7 ♀ 14 ♂ BMNH; Okahandja, 25.i.1934, J. Ogilvie, 1 ♀ 3 ♂ BMNH; Otjiwarongo, 11.i.1934, J. Ogivlie, 2 ♀ BMNH; Grundoner River, 3 km N. Asab, 16.iv.1980, V. B. Whitehead, on *Tribulus sp.,* 1 ♂ SAM; 51 km S. Aroab, 11.iv.1980, V. B. Whitehead, 1 ♀ 1 ♂ SAM; 100 km from Noordoewer, 7.iii.1980, V. B. Whitehead, 1 ♀ SAM; Delhi, near Outjo, 2015 BC, V. B. Whitehead 1 ♂ SAM; Otjikoto-Suid, near Omaruru, 2116 AD, 6 ♂ (H 6515) SM; 10 km S.W. Gamsberg on Windhoek road, 2217 CA, 4.iii.1973, 1 ♀ 3 ♂ (H 12019) SM; 60 & 80 km N. Karasberg, Aroab road, 10.iv.1980, V. B. Whitehead, 2 ♂ SAM; 78 km S.W. Karasberg, 10.iv.1980, V. B. Whitehead, 1 ♂ SAM; Seehiem, 16.ii.1934, J. Ogilvie, 2 ♀ 5 ♂ BMNH; Windhoek, 8.iii.1966, F. Herbst, 1 ♀ 1 ♂ AMNH; 100 km S. Mariental, 15.iv.1980, V. B. Whitehead, 1 ♀ 1 ♂ SAM; 120 km S. Mariental, 9.v. 1984, M. Macpherson, 2 ♂ SAM.

***Tetraloniella apicalis* (Friese), comb. nov.** Fig. 87–92

Tetralonia apicalis Friese, 1905a: 20 (♂ lectotype, MHU).

Friese (1905a) described both sexes of *T. apicalis.* I have studied the male syntype and here designate this specimen as the lectotype of this species and place *T. apicalis* in its current genus.

DESCRIPTION

Female. lengths: head 2,7–2,9 mm; scutum 2,7–3,0 mm; fore wing 8,8–9,1 mm; body 11,5–12,2 mm.

Colour. Integument without any diagnostic markings. Vestiture on head white, except upper region of face and vertex which are pale brownish; scutum mostly pale brown and scutellum mostly dark brown; pronotal lobe; tegula, upper region of pleuron and region behind wings pale brownish, lower region of mesopleuron almost white; venter pale orange; fore leg mostly very pale orange or yellowish with distal end of dorsal surface of tibia and basitarsus brown and ventral surfaces of tibia and tarsus orange; middle and hind legs largely pale orange (including scopa on hind tibia and basitarsus), ventral surfaces of middle trochanter and femur orangish, and ventral surfaces of tibiae and tarsi, including pencillus, distinctly orange; T1 with subvertical surface white, dorsal surface with proximal region yellowish-white and distal region black; T2 mostly black, with a basal tomentum of white or pale brownish and with a little white or pale brownish tomentum laterally; T3–T4 clothed with white or slightly brownish tomentum which is intermixed with long black hair, except for a narrow black, subapical, cross-band and distal margin of each tergum with a narrow band of black pubescence; T5–T6 black, except for a little pale orangish laterally; metasomal venter largely orange.

Structure. Similar to *T. junodi,* except scopa with simple, unbranched, hairs.

Male. Lengths: head 2,5–2,8 mm; scutum 2,5–2,8 mm; fore wing 7,8–8,7 mm; body 11,3–12,4 mm.

Colour. Integument devoid of any yellow facial markings. Pubescence on head and mesosoma similar to female, except mesosomal venter more or less concolorous with lower region of mesopleuron (I have also studied a single specimen from Belmont Valley with head and mesosoma white, except for vertex and mesosomal dorsum which have a brownish tinge); fore, middle and hind legs mostly white, middle trochanter and basal region of ventral surface of middle femur each with a patch of short, dense, orange pubescence, proximal two-thirds of ventral surface of hind tibia with a fringe of long pale orange hair, dorsal surfaces of all tibiae and tarsi with a pale yellowish tinge and ventral surfaces of all tibiae and tarsi orange; T1–T3 similar to female; T4–T5 usually black with a distinct white distal margin and sometimes with a little whitish or pale brownish intermixed with black; T6–T7 almost completely black; metasomal venter with S1–S4 very pale yellowish, each sternum with short hairs mesally and long hairs laterally; S5 with a dense tuft of orange or reddish-orange with a blackish tinge posterolaterally.

Structure. Similar to *T. junodi* except as follows: antennal flagellum with distal five to six segments each gently curved giving this region of flagellum an undulating appearance. Mesosoma: fore leg unmodified; ventral surfaces of middle and hind femura distinctly flattened. Metasoma: S6–S8 as illustrated (Fig. 87–89); genitalia with gonostylus branched (Fig. 90–91).

DISTRIBUTION (Fig. 92)

This species is known from the south-eastern region of southern Africa and from one male that was collected in the Transvaal.

DISCUSSION

The structure of the sixth, seventh and eighth metasomal sterna and the gonostylus of the genitalia suggests that this species is most closely related to *T. ogilviae*. But the scopa of *T. apicalis* consists of thick, unbranched, hairs, a character more similar to that of *T. braunsiana* and *T. brooksi*.

Tetraloniella apicalis can be accurately identified by the colour of the pubescence and the absence of yellow facial markings in both sexes. The males can also be identified by the structure of the middle and hind legs, the last four metasomal sterna and the gonostylus of the genitalia.

MATERIAL EXAMINED

TYPE MATERIAL: ♂ lectotype; 'Cradock, Capland. J. Wartmann, 1904 H. Friese det.', MHU.

ADDITIONAL MATERIAL: 4 ♀ 9 ♂: SOUTH AFRICA: TRANSVAAL: Pretoria, Fairy Glen, 30.xii.1943. H. K. Munro, 1 ♂ NCI: CAPE PROVINCE: Hilton, near Grahamstown, 19.× i.1967, D. J. Brothers, 1 ♀ AM; Belmont Valley, 6.xii.1966, C. F. Jacot-Guillarmod, 2 ♂ AM; Somerset East, 23.i.1986, V. B. Whitehead, 1 ♂ SAM; Katberg Mountains, 32.31S 26.38E, 2. xii.1983, G. L. Prinsloo & N. C. Grobbelaar, 1 ♂ NCI. TRANSKEI: Port St. Johns, ix. 1916 & x. 1916, H. H. Swinny, 2 ♀ 4 ♂ TM; Umtata, Ngadufor, 3128 BC, 7. xii.1986, V. B. Whitehead, 1 ♀ SAM.

***Tetraloniella katagensis* (Cockerell), comb. nov.**, Fig. 93–94, 108

Tetralonia katagensis Cockerell, 1930: 342–343 (♀ holotype, MRAC).

Tetralonia perclara Cockerell, 1935a: 87–88. syn. nov. (♀ holotype, TM).

Tetralonia bechuanica Cockerell, 1936c: 559–560. syn. nov. (♀ lectotype, BMNH).

Cockerell (1935a) described *T. perclara* from Gomodimo and the following year he (Cockerell, 1936) described *T. bechuanica* from Palapye, both of which are in Botswana. I have studied the holotype of *T. perclara* and several type specimens of *T. bechuanica*, one of which is here designated as the lectotype, and there are few differences between the types of these two species. I am, therefore, of the opinion that they are conspecific and synonymous with *katagensis* a species which I here transfer to the genus *Tetraloniella*.

DESCRIPTION

Female. Lengths: head 2,4–2,9 mm; scutum 2,5–2,7 mm; fore wing 7,6–8,8 mm; body 11,5–12,0 mm.

Colour. Integument with ventral one-half to three-quaters of clypeus and basal region of mandible yellow, labrum sometimes partly yellow, ventral surface of antennal flagellum mostly orange; narrow distal margin of T1–T3 usually transparent. Vestiture similar to *T. ogilviae* except as follows: face sometimes partly or completely pale orange; mesosomal pleuron usually with a yellowish tinge; dorsal surface of middle tibia mostly brownish-orange; middle basitarsus with dorsal surface black or with a mixture of black and white hairs, giving a greyish appearance, and ventral surface black with a reddish-orange tinge; scopa either completely black or completely white; ventral surface of hind tibia black; hind tarsus either completely black or mostly black with proximal region of dorsal surface white; proximal region of T1 sometimes yellowish; T2–T3 often with tomentum pale yellowish.

Male. Lengths: head 2,1–2,9 mm; scutum 1,6–2,6 mm; fore wing 6,3–9,9 mm; body 8,6–12,2 mm.

Colour. Integument with clypeus, labrum and basal region of mandible yellow; antennal flagellum mostly orange, dorsal surface of distal region of segment XI has a blackish tinge. Pubescence on face white to pale yellowish, vertex pale yellowish to orangish-yellow; gena largely white; mesosomal dorsum similar to vertex; mesopleuron with dorsal region similar to dorsum, becoming paler ventrally so that middle is pale yellowish and lower region and venter very pale yellowish to white; propodeum pale yellowish with a tinge of orange above; all legs pale yellowish to white, except ventral surfaces of tarsi which are blackish-orange; T1 with long yellowish-orange hair, except narrow distal margin which is black; T2 with anterior and lateral regions clothed with white, pale yellowish to yellowish-orange tomentum (posterior margin of tomentum distinctly concave); remainder of T2 black and not tomentose; T3–T4 almost completely clothed with white to pale yellowish tomentum, except for a weakly developed subapical black cross-band, and distal margin, which is narrow mesally and very narrow laterally, black; T5 with a relatively sparse white to pale yellowish basal tomentum and a dense white distal tomentum; T6 black proximally, distal region completely white, mostly white with a little black medially to mostly black with a little white posterolaterally; T7 black; metasomal venter mostly white.

Structure. Similar to *T. junodi* except as follows: antennal flagellar segments II–XI each gently curved, especially segments VII–XI, giving flagellum a wavy appearance; hind femur devoid of a small tubercle on ventral surface; S6–S7 as in Fig. 93–94.

DISTRIBUTION (Fig. 108)

Tetraloniella katagensis is known from numerous localities throughout sub-saharan Africa.

DISCUSSION

This species is apparently most closely related to *T. inermis, T. ataxia* and *T. friesei*. This relationship was determined by the similarity in the structure of the seventh metasomal sternum. The females of these four species are similar in the colour of the facial maculation, but *T. katagensis* differs

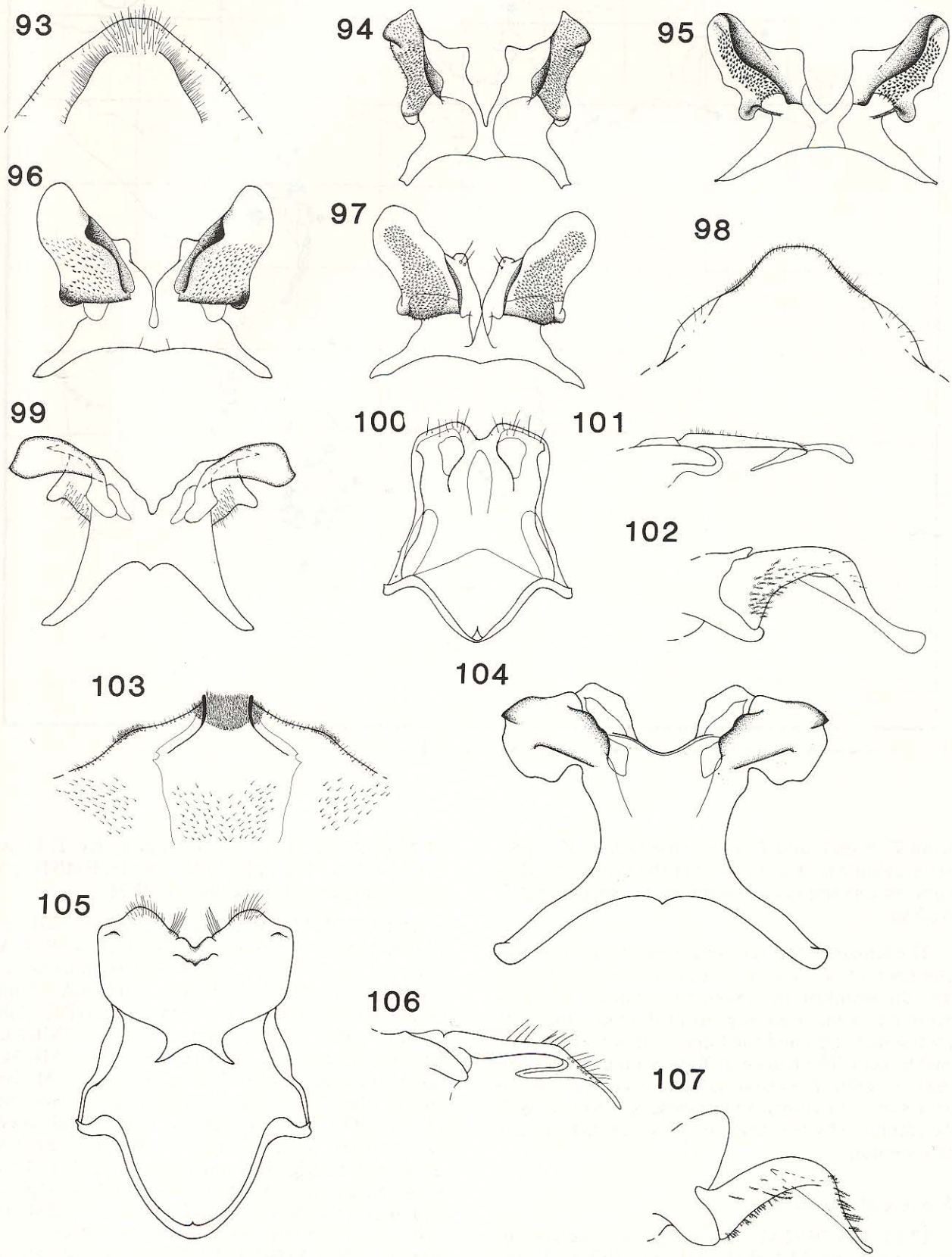

FIG. 93–107 *Tetraloniella* spp. 93–94. *T. katagensis,* ventral views of male S6–S7, respectively. 95. *T. inermis,* ventral view of male S7. 96. *T. ataxia,* ventral view of male S7. 97. *T. friesei,* ventral view of male S7. 98–102. *T. michaelseni.* 98–100. Ventral views of male S6–S8, respectively. 101–102. Dorsal and lateral views of gonostylus of male genitalia, respectively. 103–107. *T. elsei.* 103–105. Ventral views of male S6–S8, respectively. 106–107. Dorsal and lateral views of gonostylus of male genitalia, respectively

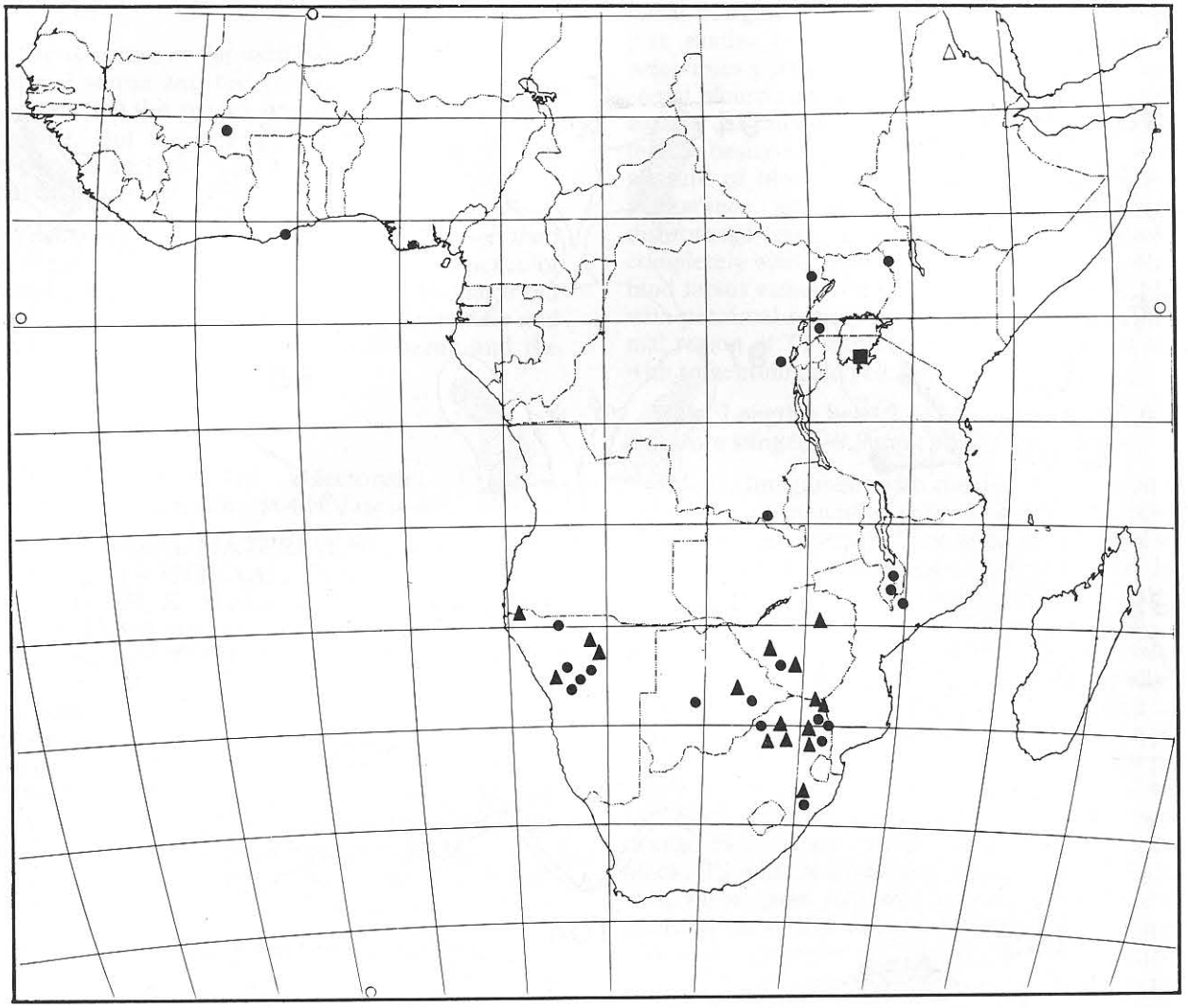

FIG. 108 Known distribution of *T. katagensis*, ●, *T. inermis*, ■, *T. ataxia*, ▲, and *T. friesei*, △

from *T. inermis* and *T. ataxia* (the female of *T. friesei* is unknown) in the colour of the metasomal dorsum. In this respect it resembles *T. vansoni* and *T. ogilviae*.

The female of this species can be identified by the presence of the yellow maculation on the clypeus and the mandible in combination with the white tomentum on the distal regions of the third and forth metasomal terga and the largely black fifth metasomal tergum. The female of *T. friesei* is unknown and may resemble *T. katagensis* in these characters. The males of *T. katagensis* and its close relatives can only be identified by the structure of the seventh metasomal sternum.

MATERIAL EXAMINED

TYPE MATERIAL: ♀ holotype of *T. katagensis:* 'Lumbumbashi [ZAIRE], Katanga BCgo, 11.45S 27.40E, 18.iii.1921, Mich Bequaert, det. T. D. A. Cockerell', MRAC; ♀ holotype of *T. perclara:* 'V.-L. Kal. Exp., Gomodima [BOTSWANA], 1–5/4/1930, det. T. D. A. Cockerell', TM (No. 1236); ♀ lectotype of *T. bechuanica:* 'AFRICA, Palapye [BOTSWANA], 4.iii.1934, J. Ogilvie, det. T. D. A. Cockerell', B.M. TYPE HYM 17B 813, BMNH, 2 ♀ paralectotypes with same data, BMNH.

ADDITIONAL MATERIAL: 34 ♀ 231 ♂: BURKINA FASO: Bobo-Dioulasso, 26.ix.1979, A. Pauly, 1 ♀ 18 ♂ PC; Mare-aux-Hippopotames, 3.x.1979, A. Pauly, 2 ♀ PC. GHANA: Yapi, xii.1916, J. J. Simpson, 1 ♂ BMNH. ZAIRE: Kandoi, iii–v.1931, G. F. de Witte, 2 ♀ 196 ♂ MRAC; Kabare, 31.viii.1914, J. Bequaert, 8 ♂ MRAC; Lumbumbashi, 11.45S 27.40E, 18.iii.1921, M. Bequaert, det. T. D. A. Cockerell, 1 ♀ paratype, MCZ. UGANDA: Mbarara, Fort Portal road, 22–24.x.1911, S. A. Neave, 3 ♀ BMNH; KENYA: Yala road, S. edge Kakumga Forest, 21–28.iv.1911, S. A. Neave, 1 ♀ BMNH. MALAWI: Mlanje (= Sapitwa), 14.v.1914, S. A. Neave, 3 ♀ 3 ♂ BMNH; S.W. Lake Chilwa, 9.i.1914, S. A. Neave, 7 ♀ BMNH. MOZAMBIQUE: Valley of Kola River, near E. Mt. Chiperone, 1.v.1913, S. A. Neave, 1 ♀ BMNH. ZIMBABWE: Hillside (near Bulawayo), 20.i.1925, Swinburne & Stevenson, 1 ♀ TM. SOUTH AFRICA: TRANSVAAL: following four localities in Kruger National Park: Shipandani

Picket, 2331 CB, 17.xii.1965, A., L. & H. Braack, 1 ♀ (AcX 3703) KNP; Rami Pan, 2331 DD, 10.iii.1966, H. Braack, 1 ♀ KNP; Letaba, 2331 DC, 16.xii.1965, A., L. & H. Braack, 1 ♀ KNP; Skuskuza, 6.ii.1965, D. J. Brothers, 1 ♀ AM; Afguns, 22 km S. Ellisras, 23.50S 27.40E, 19.i.1983, M. W. Mansell, 1 ♀ NCI; NATAL: Mfongozi, iii.1916, W. E. Jones, 1 ♀ SAM. SOUTH WEST AFRICA: Okosongomingo, 2017 CA, 6.iii.1979, V. B. Whitehead, 3 ♀ 2 ♂ SAM; Delhi, 2015 BC, Outjo, 15.iii.1979, V. B. Whitehead, 1 ♂ SAM; 8–20 km N. N. E. Omaruru, 24.iii.1977, J. G. & B. L. Rozen, 1 ♀ 1 ♂ AMNH; 9–19 km N.N.E. Omaruru, 4.iii.1977, J. G. & B. L. Rozen, 1 ♀ AMNH; Otjikoko Sud, 53 km E.N.E. Omaruru, 10–13.ii.1972, southern African expedition, 1 ♀ BMNH; Ongandjera, iii.1923, museum expedition, 1 ♂ SAM.

***Tetraloniella inermis* (Friese), comb. nov.,** Fig. 95, 108

Tetralonia inermis Friese, 1911: 655–656 (♂ lectotype, MHU).

This species was described by Friese (1911) from one specimen of each sex and the male syntype is here designated as the lectotype of this species. *Tetraloniella inermis* is here transferred to its current genus.

DESCRIPTION

Female. Similar to *T. katagensis* in size.

Colour. Integument, pale yellow facial maculation confined to lower region of clypeus (clypeal mark raised to a point in middle and gently convex near sides), antennal flagellar segments each with a little orange near distal end, distal margins of T1–T4 narrowly transparent. Vestiture on head white, except vertex which has a pale yellow tinge; mesosomal dorsum and pronotal lobe pale yellowish; remainder of mesosoma whitish; legs whitish with ventral surfaces of middle trochanter and femur partly orange, dorsal surfaces of fore and middle tibiae pale yellowish, especially posterodistal regions which have a brownish-orange tinge, ventral surface of hind tibia orange, ventral surface of fore tarsus blackish-orange and ventral surfaces of middle and hind tarsi black; TI pale yellowish proximally and black distally; T2–T4 with anterior and anterolateral regions clothed with a white tomentum and with distal regions black (black region relatively long mesally and short laterally) and with black region becoming progressively shorter towards distal end of metasoma; T5 mostly white and tomentose, distal region with a narrow pale orange band which forms a distal fringe posterolaterally and curves foreward (behind densely pubescent posteromesal region) medially, posteromesal region black and densely pubescent; T6 blackish-orange; metasomal venter pale yellowish to white.

Structure. Similar to *T. junodi.*

Male. Similar to *T. katagensis* except shape of posterolateral region of S7 (Fig. 95).

DISTRIBUTION (Fig. 108)

This species is only known from Ukerewe in Tanzania.

DISCUSSION

Of the three species that are most closely related to *T. inermis* the male resembles *T. katagensis* more closely than *T. ataxia* and *T. friesei,* and the female resembles *T. ataxia* more closely, the two species being almost indistinguishable in this sex. The male can only be recognized by the structure of the seventh metasomal sternum.

MATERIAL EXAMINED

♂ lectotype: 'D.O.-Afrika, Marienhof, Ukerewe [TANZANIA], 1911, Conrads, 1910, H. Friese det.', MHU; ♀ paralectotype with similar labels to male plus a separate 'type' label, MHU.

***Tetraloniella ataxia* spec. nov.,** Fig. 96, 108

The male of this new species resembles the males of *T. katagensis, T. inermis* and *T. friesei,* differing only in the shape of the seventh metasomal sternum. The female, however, can be easily separated from the female of *T. katagensis* by the colour of the fifth metasomal tergum but is virtually inseparable from the female of *T. inermis* (see discussion above). The female of *T. friesei* is unknown. Because of the difficulty in determining the identity of this species I have named it *T. ataxia.*

DESCRIPTION

Female. Lengths: head 2,9–3,4 mm; scutum 2,6–2,9 mm; fore wing 8,9–9,2 mm; body 11,0–12,2 mm.

Colour. Integument with ventral half of clypeus yellow (labrum and mandible black) and ventral surface of antennal flagellum with a tinge of orange or reddish-orange; distal margins of T1–T4 semitransparent. Vestiture on gena white, face very pale yellowish-white and vertex orange or reddish-orange; mesosomal dorsum, tegula and upper region of mesopleuron concolorous with vertex; scutellum often a little more reddish than remainder of dorsum; remainder of mesosoma very pale yellowish-white; fore leg with basal three segments pale yellowish-white (these regions have an orange tinge in more intensely coloured specimens); dorsal surfaces of tibiae and basitarsi yellowish-orange, except posterodistal region of dorsal surface of tibia which is brownish-orange; ventral surfaces of tibia and tarsus reddish-orange; middle leg similar to fore leg, except ventral surfaces of trochanter and femur partly orange, and ventral surface of tarsus generally black with a reddish tinge; hind leg with basal three segments similar to fore and middle legs, scopa white, sometimes with either a yellowish or yellowish-orange tinge; ventral surface of tibia orange; basitarsus black, except for a little orange on posterior margin; pencillus black with an orange or reddish-orange tinge; T1 pale yellowish-white with a tinge of

orange dorsolaterally and with distal region relatively broad, black and largely impubescent; T2–T4 with basal and lateral regions clothed with a white or pale yellowish tomentum, distal regions black; T5 white, except for mesal region of distal fringe which is orange to blackish-orange and relatively densely pubescent; 6 black or blackish-orange; S1–S5 each with a fringe of orange setae which generally become pale yellowish laterally and S6 reddish-orange.

Structure. Similar to *T. junodi.*

Male. Similar to *T. katagensis* except in the shape of the posterolateral region of S7 (Fig. 96).

DISTRIBUTION (Fig. 108)

Tetraloniella ataxia is apparently endemic to southern Africa and has been recorded from Zimbabwe, Botwana, the northern region of South West Africa and the Transvaal and northern Natal in South Africa.

DISCUSSION

The females of *T. ataxia* and *T. inermis* are difficult to separate and they can only be conclusively identified when collected in association with males. The male closely resembles the males of *T. katagensis, T. inermis* and *T. friesei* and can only be identified by the structure of the seventh metasomal sternum.

MATERIAL EXAMINED

♂ holotype, 4 ♀ 26 ♂ paratypes: ZIMBABWE: Salisbury (now Harare), G. K. Marchall, 1 ♀ TM; same locality & collector, i.1900, *'T. minuticornis'* det. H. Friese 1910, 1 ♀ BMNH; Springvale, 24.xii.1911, G. Arnold, *Tetralonia inermis* det. H. Brauns 1912, 1 ♂ SAM; Sawmills. 31.xii.1921, Rhodesia Museum, *'Tetralonia fulvicornis'* det. H. Friese 1912, 1 ♂ SAM; New Brighton, Balla Balla, 2039 AC, 30.xi.1979, R. Toms, 1 ♂ TM. BOTSWANA: Shashane Dam, 25.v.1984, 1 ♂ NCI. SOUTH AFRICA: TRANSVAAL: Langjan Nature Reserve, 22.52S 29.14E, C. D. Eardley, on *Justicia flava,* ♂ holotype 7 ♂ NCI; the following five localities are in the Kruger National Park: Pafuri, 22.26S 31.12E, 264m, 20–24.i.1985, N. C. Pienaar, 2 ♂ NCI; near Mashipange, 22.35S 31.01E, 26.i.1984, C. D. Eardley, 1 ♂ NCI; Nyandu Sandveld, 2231 CB, 10.i.1966, A. Braack, 1 ♂ KNP; Satara, 15–18.xii.1985, S. Peck, 1 ♂ BBSL; Skukuza, 2431 DC, 20.iii.1966, A. Braack, 1 ♂ KNP; Ben Alberts Nature Reserve, Thabazimbi, 24.37S 27.23E, 24–28.xi.1980, C. D. Eardley, 1 ♂NCI; Nylstroom, 16–31.xii.1921, G. P. F. van Dam, 1 ♂ TM; Plat River, 1–2.ii.1903, v. Jutrzencka, 1 ♂ TM; NATAL: Mfongosi, iii– iv.1935, W. E. Jones, 1 ♂ SAM; Weenen, i–ii.1926, H. P. Thomasset, 2 ♂ BMNH. SOUTH WEST AFRICA: Otavifontein 25.xii.1933, J. Ogilvie, 1 ♂ BMNH; Ondonga, ii.1921, K. H. Barnard, 1 ♂ SAM; 12 km W. Usakos, 19.v.1984, M. Macpherson, 1 ♂ SAM; Namukunde, ii.1923, museum expedition, 1 ♂ SAM; Kalkfontein, iv.1923, J. S. Brown, 1 ♂ SAM.

Tetraloniella friesei **(Meade-Waldo), comb. nov.,** Fig. 97, 108

Tetralonia fulvicornis Friese, 1909a: 256, 259 (nec *T. fulvicornis* Morawitz, 1895) (♂ holotype, MHU).

Tetralonia friesei Meade-Waldo, 1914: 400–401 (replacement name for *T. fulvicornis* Friese); Cockerell, 1930: 341; 1933d: 8.

Tetraloniella friesei is here transferred to its current genus.

DESCRIPTION

Female. Unknown.

Male. Similar to *T. katagensis* except, colour resembles pale variety of *T. katagensis* and shape of posterolateral process of S7 as in Fig. 97.

DISTRIBUTION (Fig. 108)

When Cockerell (1930, 1933d) recorded this species from Zaire, his determinations were apparently based only on colour. As this species cannot be identified on colour alone, these distribution records should be treated as doubtful. The only positively identified specimen of this species known to the author is the holotype of *T. fulvicornis.*

DISCUSSION

Tetraloniella friesei is closely related to *T. katagensis, T. inermis* and *T. ataxia* from which the male, the only known sex, can be separated by the structure of the seventh metasomal sternum.

MATERIAL EXAMINED

♂ holotype with the following data: 'Gheleb [ETHIOPIA], Eritrea IX, det. H. Friese, 1907', MHU.

Tetraloniella michaelseni **(Friese), comb. nov.,** Fig. 98–102, 109

Tetralonia michaelseni Friese, 1916: 442–443 (♂ holotype, lost).

Tetralonia orycina Cockerell, 1935a: 88; 1936c: 556–557. syn. nov. (♀ holotype, TM).

The holotype of *T. michaelseni* was collected by Michaelsen and deposited in the Zoologische Museum der Universität in Hamburg, West Germany. The bee collection in this Museum was destroyed during the second World War. My interpretation of this species is, therefore, based on a careful comparison of the original description with the material studied.

The holotype of *T. orycina* is clearly conspecific with the material I identified as *T. michaelseni.*

Although the shape of the clypeus and the last three metasomal sterna resemble those of *Tetralonia* fairly closely, the scopa is clearly characteristic of

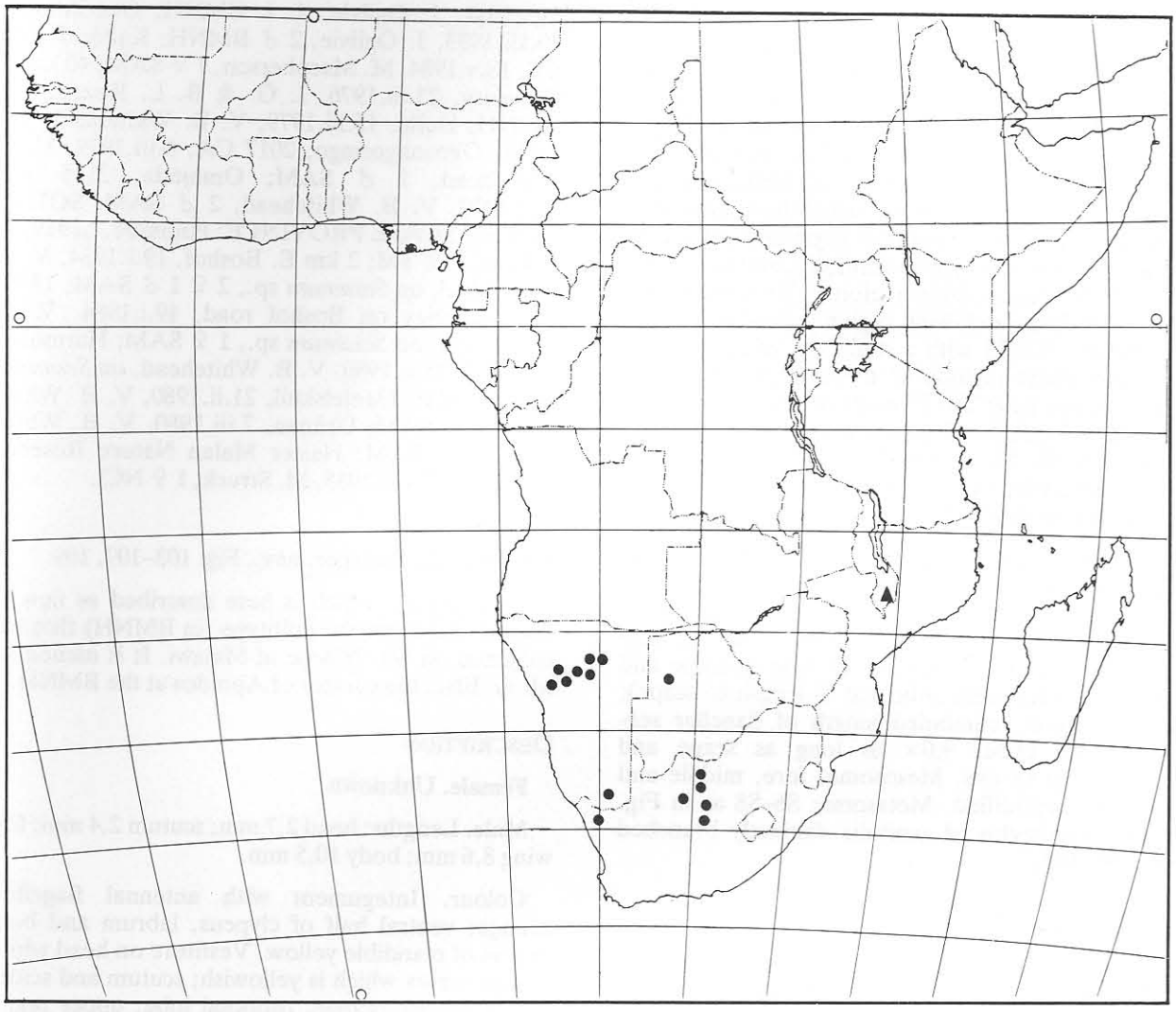

FIG. 109 Known distribution of *T. michaelseni*, ●, and *T. elsei*, △

Tetraloniella. I, therefore, transfer this species to the latter genus.

DESCRIPTION

Female. Lengths: head 2,4–2,8 mm; scutum 2,3–2,7 mm; fore wing 7,1–8,6 mm; body 9,3–11,0 mm.

Colour. Integument, ventral surface of antennal flagellum either mostly orange or reddish-orange or mostly black; distal regions of T1–T4 with broad yellowish translucent margins. Vestiture on head white, except vertex which has a pale yellowish tinge; scutum, scutellum and pronotal lobe more or less concolorous with vertex; remainder of mesosoma white; fore leg white, except distal region of tibia and tarsus which are brownish-orange; basal three segments of middle leg mostly white, ventral surfaces of trochanter and femur with a little orange; middle tibia mostly pale yellowish, with distal region of dorsal surface brownish-orange; middle tarsus orange or brownish-orange; hind leg with basal three segments mostly white, scopa pale yellowish, ventral surfaces of tibia and tarsus orange or reddish-orange, pencillus and tarsal segments II–V brownish-orange; T1 sparsely clothed with relatively long white hair, distal region yellowish and largely naked; T2–T4 with basal regions clothed with a fine white tomentum which in a few specimens has a pale yellow tinge; distal regions of T2–T4 with very short, fine white or yellowish-orange hairs; T5 yellowish-white with a dense brownish-orange distal fringe which is distinctly wider medially; T6 brownish-orange; S2–S5 each with a fringe of long orange or yellowish-orange setae; S6 orange.

Structure. Head: clypeus strongly protuberant, protuberance about 0,8× as wide as eye, and with lateral regions curved strongly backwards (ventral view); ventral clypeal margin evenly and gently concave in frontal view (clypeus similar to that of *Tetralonia*, cf. Fig. 37); maxillary palpus 4- or 5-segmented. Mesosoma: hind tibia with scopa similar to that of *T. junodi*.

Male. Lengths: head 2,4 mm; scutum 2,3 mm; fore wing 7,6 mm; body 10,0 mm.

Colour. Integument with distal regions of T1–T5 with broad yellowish translucent margins. Vestiture

on head white, except vertex which is yellowish; mesoscutum mostly yellowish-orange, anterior region paler in colour, ranging from white to pale yellow; scutellum orange, yellowish or white; ventral region of mesopleuron and mesosomal venter white; propodeum yellowish; fore, middle and hind legs generally with basal three segments white; all tibiae pale yellowish, except dorsal surfaces which have an orangish tinge; tarsi with basitarsal segments yellowish-orange dorsally and orange ventrally, and tarsal segments II–V orange; basal region of T1 concolorous with propodeum and distal region yellowish and largely naked; T2–T5 with a dull pale yellow tomentum, and distal regions of these terga with short bright orange hair; T6–T7 more or less concolorous with basal regions of proximal terga; metasomal venter with S1–S4 each with a yellowish fringe, S5 with a dense fringe of orange setae on each side and S6 largely impubescent.

Structure. Head: shape of clypeus similar to female; antennal scape relatively long, about 0,3× as long as eye, and not distinctly swollen, about 2,0× as long as its maximum width; flagellar segments I relatively short, 0,3× as long as scape and segment II (the latter subequal in length to scape); flagellum short, combined length of flagellar segments I–XI about 9,0× as long as scape and 2,5× as long as eye. Mesosoma: fore, middle and hind legs unmodified. Metasoma: S6–S8 as in Fig. 98–100; gonostylus of genitalia distinctly branched (Fig. 101–102).

DISTRIBUTION (Fig. 109)

This species is known from Botswana, South West Africa and the northern and north-western Cape in South Africa.

DISCUSSION

This species can be identified in both sexes by the broad, yellow, translucent, distal margins of the metasomal terga and, in the male, by the structure of the sixth and seventh metasomal sternum and the gonostylus of the genitalia. The colour of the metasoma resembles that of several of the species in the genus *Eucara* and, to a lesser extent, *T. brevikeraia*. But *T. michaelseni,* those species of *Eucara* in which the metasomal dorsum is largely yellowish and *T. brevikeraia* are not closely related and can be easily separated by the following combination of characters: the shape of the clypeus, the colour of the legs in both sexes, the structure of the scopa in the female and the structure of the hind leg in the male.

MATERIAL EXAMINED

TYPE MATERIAL: ♀ holotype of *T. orycina:* 'V.-L. Kal. Exp., Gemsbok Pan [BOTSWANA], 23/4–5/30, det. T. D. A. Cockerell', TM (holotype No. 1237).

ADDITIONAL MATERIAL: 12 ♀ 9 ♂: BOTSWANA: Kuke Pan, 20.59S 22.25E, 14–15.iv.1972, southern African expedition, 1 ♀ 1 ♂ BMNH. SOUTH WEST AFRICA: Otjiwarongo, 11.i.1934, J. Ogilvie, 1 ♀ BMNH; Otavifontein, 30.xii.1933, J. Ogilvie, 2 ♂ BMNH; Kaltfeld, 2016 CC, 18.v.1984, M. Macpherson, 1 ♀ SAM; 40 km N. Omaruru, 23.iii.1976, J. G. & B. L. Rozen, 1 ♀ AMNH; Delhi, 15.iii.1979, V. B. Whitehead, 1 ♂ SAM; Okosongoringo, 2017 CA, 6.iii.1979, V. B. Whitehead, 1 ♂ SAM; Omajette, 2115 AB, 5.iii.1979, V. B. Whitehead, 2 ♂ SAM. SOUTH AFRICA: CAPE PROVINCE: Pudimoe, i.1919, H. Brauns, 1 ♀ TM; 2 km E. Boshof, 19.i.1984, V. B. Whitehead, on *Sesamum* sp., 2 ♀ 1 ♂ SAM; 13 km E. Kimberley on Boshof road, 19.i.1984, V. B. Whitehead, on *Sesamum* sp., 1 ♀ SAM; Harmonie, 2624 CD, 25.ii.1980, V. B. Whitehead, on *Sesamum* sp., 1 ♀ AM; Danielskuil, 21.ii.1980, V. B. Whitehead, 1 ♀ SAM; Grünau, 7.iii.1980, V. B. Whitehead, 1 ♀ SAM; Hester Malan Nature Reserve, 2917 DB, 12.viii.1985, M. Struck, 1 ♀ NCI.

***Tetraloniella elsei* spec. nov.,** Fig. 103–107, 109

This speices, which is here described as new, is known only from the holotype (in BMNH) that was collected on Mt. Mlanje in Malawi. It is named for Mr G. Else, the curator of Apoidea at the BMNH.

DESCRIPTION

Female. Unknown.

Male. Lengths: head 2,7 mm; scutum 2,4 mm; fore wing 8,6 mm; body 10,5 mm.

Colour. Integument with antennal flagellum orange; ventral half of clypeus, labrum and basal region of mandible yellow. Vestiture on head white, except vertex which is yellowish; scutum and scutellum yellowish-orange; pronotal lobe, upper region of mesopleuron and propodeum very pale yellowish, remainder of mesosoma white; legs white with dorsal surface of fore and middle tibiae very pale yellowish and ventral surfaces of all tarsi orange; T1 largely concolorous with propodeum, with a narrow black distal margin; T2 with a basal tomentum that is short mesally and long laterally, almost reaching distal margin, and distal region, which is correspondingly longer mesally, black; T3–T4 almost completely clothed with white tomentum, narrow distal margin black; T5 completely clothed with white tomentum; T6 black with posterolateral region white and posteromesal region apparently blackish-orange (colour cannot be accurately determined because pubescence is damaged); T7 yellowish laterally and orangish mesally; S1 and lateral regions of S2–S5 white; remainder of venter virtually impubescent.

Structure. Head: clypeus a little more protuberant than *Te. nigropilosa,* clypeus 0,9× as wide as eye, and with ventral clypeal margin concave, similar to that of *Te. nigropilosa* (Fig. 37); lateral regions of clypeus, in ventral view, curved strongly backwards; antennal scape short, about 0,3× as long as eye, and distinctly swollen, 1,4× as long as maximum width of scape; antennal flagellum long, segment I shortest, 0,3× as long as scape and 0,15× as long as segment II, which is longest; segments III–XI subequal in length and each a little shorter than II;

flagellar segments I–XI together 15× as long as scape and 3,4× as long as eye; maxillary palpus 6-segmented. Mesosoma: fore leg not modified; middle femur with a distinct tubercle on middle of ventral surface and tibia distinctly flattened dorso-ventrally; hind tibia with a distinct swelling in middle of ventral surface. Metasoma: S6–S8 as in Fig. 103–105; gonostylus of genitalia with an anterior projection branch (Fig. 106–107).

DISTRIBUTION (Fig. 109)

This species is known only from Mt. Mlanje in Malawi.

DISCUSSION

As in the previous species, *Tetraloniella elsei* has several features that are more similar to the other sub-saharan eucerine genera. The long antennal flagellum, however, suggests that it belongs to its current genus. But as the structure of the scopa is the most reliable diagnostic feature of this genus, the discovery of the female may result in the generic transfer of this species. The male of *T. elsei* differs from the other species in this genus in the shape of the clypeus, the last two metasomal sterna and the gonostylus of the genitalia. The clypeus resembles that of the *Tetralonia* and the last two metasomal sterna and the genitalia resemble those of *Eucara* more closely. The characters mentioned above together with the structure of the middle and hind legs allow for the easy recognition of this species.

MATERIAL EXAMINED

♂ holotype: 'Nyasaland, Side of Mt Mlanje [MALAWI], 3 000–4 000 ft, 3.xii.1913, S. A. Neave', BMNH.

SPECIES OF UNCERTAIN IDENTITY

***Tetraloniella capensis* (Lepeletier) comb. nov.**

Macrocera capensis Lepeletier, 1841: 95 (♂ holotype, lost).

Tetralonia capensis (Lepeletier): Smith, 1854: 300; Cockerell, 1936c: 556.

Eucera capensis (Lepeletier): Dalla Torre, 1896: 228.

The holotype of this species is in neither the MNHN nor the collections of the Universita di Torino where Lepeletier's collection is housed, and the original description is unsuitable for the identification of the species. Cockerell (1936c), however, synonymised this species with *junodi* and in doing so clearly stated that his interpretation of *capensis* was based on material in the BMNH that was identified by Lepeletier. He did not see the holotype. I have studied the material in the BMNH on which Cockerell (1936c) based his interpretation of *capensis* and it is actually *T. nubilis*. But this material could have been incorrectly identified by Lepeletier, because the male of *T. nubilis* closely resembles several other southern African species of *Tetraloniella* in colour and external morphology and the seventh metasomal sternum was not dissected from this material. I have, therefore, chosen to leave *capensis* in abeyance until the holotype has been carefully studied.

***Tetraloniella pachysoma* (Cockerell) comb. nov.**

Habropoda lata Cameron, 1905: 200 (? ♀ holotype, lost).

Anthophora lata (Cameron): Friese, 1909a: 261, 267.

Tetralonia lata (Cameron): Brauns, 1912: 455 (nec *T. lata* Provancher, 1888).

Tetralonia pachysoma Cockerell, 1920a: 205 (replacement name for *Habropoda lata* Cameron, 1905).

Cameron (1905) gave neither the sex nor the number of type specimens in the original description. Brauns (1912), however, clearly stated that he had studied a female type (in AM). This specimen is not in the AM, nor is it in the BMNH, and must be assumed to have been lost. Brauns (1912) stated that this species is closely related to *T. braunsiana,* but the poor condition of the type made it impossible to ascertain the correct identity of the specimen. *Tetraloniella pachysoma* must, therefore, be treated as a *nomen dubium.*

***Tetraloniella sjostedti* (Friese) comb. nov.**

Tetralonia sjostedti Friese, 1909: 259 (♂ holotype, NRS).

I have not been able to study the holotype of this species and the original description is unsuitable for the identification of this specimen at species level. I am, however, able to determine from this description that *T. sjostedti* belongs to the genus *Tetraloniella* and I here transfer it to this genus. As I am unable to determine the specific identity of this species, I have chosen to leave it in abeyance until the holotype has been studied.

As discussed above, I am unable to separate the males of *T. vansoni* and *T. alboscopacea* and am, therefore, only able to identify males of these two species when they have been collected together with females. The most important factor hindering the separation of the males of these two species is the apparent variation in the structure of the seventh metasomal sternum. More material, especially series that contain both sexes, is needed in order to establish if the differences in the shape of this structure is a result of intraspecific variation or if it is diagnostic of the species. The following three species, *T. nyassana, T. nigricans* and *T. nostra* were described from males that closely resemble *T. vansoni* and *T. alboscopacea* and, therefore, cannot be identified. They are dealt with in detail below.

***Tetraloniella nyassana* (Strand) comb. nov.**

Tetralonia nyassana Strand, 1911a: 112 (♂ holotype, MHU).

I have studied the holotype of this species, of which the pubescence is in very poor condition, and am unable to determine its true identity. The similarity in the structure of the seventh metasomal sternum with that of *T. vansoni,* however, suggests that they are synonymous. This species is here transferred to the genus *Tetraloniella.*

Holotype: 'Nyassa See, Langenburg, 10.v.99, Fullerborn, J., det. E. Strand'.

***Tetraloniella nigricans* (Cockerell) comb. nov.**

Tetralonia nigricans Cockerell, 1932: 168 (♂ holotype, BMNH).

Following the study of the holotype of *nigricans,* I am of the opinion that this species is synonymous with *alboscopacea.* I am, however, unable to identify it with certainty and have, therefore, left it in abeyance. I here transfer this species to its current genus.

Holotype: 'Pretorius Kop gate, Oct. 10 WPC, det. T. D. A. Cockerell', B.M. TYPE HYM 17B 819.

***Tetraloniella nostra* (Cockerell) comb. nov.**

Tetralonia nostra Cockerell, 1933a: 132–133 (♂ holotype, BMNH).

The holotype, which I have studied, is probably synonymous with either *T. vansoni* or *T. alboscopacea* for reasons discussed above. I am unable to ascertain the correct identity of this specimen and have, therefore, left it in abeyance. It is here transferred to the genus *Tetraloniella.*

Holotype: 'S. Rhodesia, Jesse, 13.iv.1932, L. Ogilvie, det. T. D. A. Cockerell', B.M. TYPE HYM 17B 817.

VIII. SPECIES INCORRECTLY PLACED IN THE TRIBE EUCERINI

***Tetralonia fumipenigera* Strand**

Tetralonia fumipenigera Strand, 1911a: 111, 144 (♀ holotype, MHU).

I have studied the holotype and this species was incorrectly placed in the genus *Tetralonia,* it belongs to the Halictidae, subfamily Nomiinae.

IX. ACKNOWLEDGEMENTS

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XI. SPECIES INDEX

Invalid names in italics