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Source: African Invertebrates, 56(3) : 845-918

Published By: KwaZulu-Natal Museum

URL: <https://doi.org/10.5733/afin.056.0301>

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## Illustrated key and systematics of male South African *Atherigona s. str.* (Diptera: Muscidae)

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### ABSTRACT

A key to the males of *Atherigona s. str.* species is provided and all species known to occur in South Africa are treated. The number of previously described species known to occur in South Africa is increased to 43 from the approximate previous 35, and an additional 25 new species: *A. albicornis* sp. n., *A. capitulata* sp. n., *A. chrysohypene* sp. n., *A. convexa* sp. n., *A. danielssoni* sp. n., *A. erectisetula* sp. n., *A. flavifinis* sp. n., *A. flaviheteropalpata* sp. n., *A. heteropalpata* sp. n., *A. kirkspriggsi* sp. n., *A. latibasilaris* sp. n., *A. libertensis* sp. n., *A. londtii* sp. n., *A. ndumoensis* sp. n., *A. nesshurstensis* sp. n., *A. oblonga* sp. n., *A. parviclivis* sp. n., *A. parvihumilata* sp. n., *A. piscatoris* sp. n., *A. rimapicis* sp. n., *A. stuckenbergi* sp. n., *A. tigris* sp. n., *A. umbonata* sp. n., *A. vernoni* sp. n. and *A. zulu* sp. n. are described. *A. hancocki* van Emden, 1940 is designated as junior synonym to *A. divergens* Stein, 1913.

**KEY WORDS:** Afrotropical Region, South Africa, Muscidae, *Atherigona*, shoot flies, systematics, taxonomy, new species, identification key, males.

### INTRODUCTION

*Atherigona* Rondani, 1856 is one of the most speciose genera of muscids in the world with just under 300 recognised and described species, of which 131 were known from the Afrotropical Region (Dike 2003; Couri *et al.* 2006) until now. The genus comprises two subgenera: *Atherigona s. str.* and *Acritochaeta* Grimshaw, 1901, with 117 and 14 respective species known from the Afrotropical Region.

Many species of *Atherigona* Rondani, 1856 are well known as major economic pests of various grasses and cereals. Larvae of *Atherigona s. str.* tend to be pests of various Poaceae, whilst the majority of *Acritochaeta* are regarded as facultative predators in organic matter, with a few exceptions, such as *A. orientalis*, which is a widespread pest of bell peppers, tomato and sorghum in various African countries and southern Asia. *Atherigona s. str.* has a greater number of obligate phytophagous species, with many causing economic loss in especially sorghum and millet throughout Africa.

*Atherigona soccata* is a particularly important pest, causing crop losses in Africa, Asia and Latin America by damaging the growth points of seedlings, leading to typical dead heart symptoms (Young & Teetes 1977; Sherwill *et al.* 1999). In extreme instances, up to 90% of sorghum seedlings may be infected by *A. soccata* when late sowing occurs. Other species of *Atherigona s. str.*, such as *A. tritici* Pont & Deeming, 2001, *A. naqvii* Steyskal, 1966, *A. falcata* (Thomson, 1869) and *A. lineata* (Adams, 1905), are also known to damage cereal crops, with *A. tritici* being quite destructive on wheat, causing up to 10% loss (Pont & Deeming 2001).

Van Emden (1940) was one of the first to examine Afrotropical *Atherigona* in detail as part of his work on the Coenosiinae collected during the then British Museum (Natural History Museum) expedition to the Ruwenzori range in East Africa, specimens received from other various east African sources, and those examined in

the British Museum. He described 23 new species of *Atherigona s. str.* and greatly contributed to the knowledge of the group. The next major revision of the group was that by Deeming (1971), who described 21 new species, and who continues to work on this group (albeit to a lesser degree) to this day, having described another 30 species since 1971. Deeming initially focussed on West African fauna, with his 1971 paper and 21 new species focussing solely on specimens collected throughout northern Nigeria. His later work did include some more East and West African specimens, and to a lesser degree southern African specimens (although these were mostly specimens from the Natural History Museum in London which were collected throughout the 1900s). Dike (1989a) published a key on the Afrotropical species of *Atherigona* and combined the knowledge up to that time into a very usable key, building upon the layout and structure of Deeming (1971).

At the beginning of the present study, it was found that many South African *Atherigona* in museum collections did not key to any known species; or if they did key out, they did not completely match descriptions of types from East and West African countries. Also, up until now only three species have been described from South Africa (Table 1). Furthermore, a degree of geographical variation is expected and as such it was therefore necessary to incorporate the South African fauna (known and presently unknown) into a local revision.

The aim of this study was thus to review and update the systematics of *Atherigona s. str.* in South Africa and provide an identification key. To accomplish this, one cannot look at South African species in isolation. Many species are pan-African and due to the limited historical focus on South African and southern African species, very little is known with regard to the species composition of the subgenus, apart from economically important species and specimens collected by chance and deposited in overseas institutions. Due to this, it would not be feasible to unequivocally state which species are endemic to South Africa and which are not. The systematic overview and treatment that follows incorporates many geographically widespread species, as well as some species which are only known from southern Africa and South Africa in particular.

#### MATERIAL AND METHODS

The specimens examined during this study emanate from three main preservation methods: pinning, point mounting and preservation in 70–96% ethanol.

While specimens of *Atherigona s. str.* can be keyed to species in some cases using only external morphological characteristics, it is preferable for dry specimens to be dissected or relaxed in order to examine the trifoliate process to verify the determinations. Freshly collected specimens' trifoliate processes should be teased out directly after being killed by pulling down on the abdomen of each male specimen using fine forceps (alternatively this can also be done if the specimens are in ethanol). Live specimens also tend to extend the trifoliate process out of the abdomen when frozen. Unfortunately most historical museum specimens studied were only pinned and not readied in this manner and required destructive dissection.

The dissection process involved first noting all important characters (especially coloration and markings) and taking measurements before separating the abdomen from the rest of the specimen, and placing it in a heated solution of 10% potassium

hydroxide (KOH) for approximately 5 minutes. KOH is a strong base and an effective means of dissolving soft tissue and clearing the abdomen, leaving only cuticle behind, allowing the trifoliolate process and genitalia to be studied clearly. It also has an added advantage in that it dissolves and removes concentrated sugars present in the abdomen of the flies (due to adults feeding on nectar). The sugars from the digestive tract leech out into the surrounding tissue, making it impossible to note markings, sometimes even changing the entire colour appearance of a specimen. After clearing in KOH, the abdomen is transferred to glacial (100%) acetic acid for another 5 minutes before removing and rinsing with distilled water. Thereafter it is transferred to 96% ethanol for viewing under a microscope.

Measurements were made using a micrometer eye-piece and calibration slide. All measurements given are the averages for each species.

Whilst there is generally no shortage of females in collected field-samples or museum collections, it is virtually impossible to associate females with males of the same species unless the specimens were collected in copula, or reared from host plants (for which no information is available with regards to the newly described species). For this reason species descriptions and diagnoses are based on male specimens only, as this is most comparable to existing species knowledge, making a comparison between new and already existing species possible.

Photographs of terminalia used for some of the illustrations were taken using a Zeiss Stemi 2000-C stereo microscope with an attached camera.

The trifoliolate process and hypopygial prominence of each species were drawn using a drawing tube attached to a Wild M5 stereo microscope. Illustrations were done in pencil, scanned and digitally “inked” using Adobe Illustrator CS5 and finalised in Adobe Photoshop CS5.

Afrotropical distributions for species are incorporated from the literature, specifically Pont (1980) and Dike (2003), as well as from personal examination of previously unrecorded specimen label data. Non-Afrotropical distributions are not listed.

All identifications were done by the author, unless stated otherwise in the material examined sections of the treatments.

Authors have used mixed terminologies in the past with regard to the naming of morphological characters and the numbering of abdominal tergites, with Deeming (1971, 1972a, 1978, 1979, 1981) utilising the numbering of Venturi (1968). McAlpine (1981) has arguably made one of the biggest contributions to standardising dipteran morphological terms, and for this reason the manuscript follows terminologies from that publication, with the only exception being that of the 3<sup>rd</sup> antennal segment, which is referred to here as the “postpedicel” as in Stuckenberg (1999), and not as antennal flagellomere 1.

Abbreviations used:  $tp_{pv}$  – trifoliolate process posterior view,  $tp_{lv}$  – trifoliolate process lateral view (profile),  $hp_{av}$  – hypopygial prominence anterior view,  $hp_{lv}$  – hypopygial prominence lateral view (profile),  $hp_{dv}$  – hypopygial prominence dorsal view.

Material examined during this study are deposited at the following institutions (Curators in parentheses):

- AMGS – Albany Museum, Grahamstown, South Africa (Sarah Gess);
- BMSA – National Museum, Bloemfontein, South Africa (Ashley Kirk-Spriggs);
- MNHN – Muséum national d’Histoire naturelle, Paris, France (Christophe Daugeron);

- MRAC – Musee Royal de l’Afrique Centrale, Tervuren, Belgium (E. De Coninck);  
 MZLU – Museum of Zoology, Lund University, Lund, Sweden (R. Danielsson);  
 NHMUK – The Natural History Museum, London, United Kingdom (N. Wyatt);  
 NMSA – KwaZulu-Natal Museum, Pietermaritzburg, South Africa (B Muller);  
 NMWC – National Museum of Wales, Cardiff, United Kingdom (M. Wilson, J. Deeming);  
 SAMC – Iziko South African Museum, Cape Town, South Africa (M. Cochrane);  
 SANC – South African National Collection of Insects, Pretoria, South Africa (R. Urban);  
 SMNS – Staatliches Museum für Naturkunde, Stuttgart, Germany (H. Tschorsnig);  
 ZMHB – Museum für Naturkunde, Berlin, Germany (J. Ziegler, S. Marotzke).

#### TAXONOMY

##### Family Muscidae

##### Subfamily Atherigoninae

##### Tribe Atherigonini

#### Genus *Atherigona* Rondani, 1856

Diagnosis: *Atherigona* can be distinguished from other genera of South African Muscidae by the very characteristic angular head shape, its elongated parafacial, and long postpedicel (third antennal segment) which extends past the middle height of the eye; in some species almost extending to the lower facial margin. Only one pair of reclinate orbital setae present, the proclinate orbital pair being absent. The katepisternum with three setae arranged in the shape of an equilateral triangle (1:1:1) and the hind tibia has no calcar present.

#### Subgenus *Atherigona* Rondani, 1856

*Orthostylum* Macquart, 1851b: 246 (273) (as genus). Type species: *Orthostylum rufipes* Macquart, 1851 [= *Coenosia pulla* Wiedemann, 1830], by original designation.

*Atherigona* Rondani, 1856: 97 (as genus). Type-species: *Atherigona varia* Meigen, 1826, by original designation.

Diagnosis: Males of *Atherigona s. str.* can easily be distinguished from members of the subgenus *Acritochaeta* Grimshaw and other muscids by the presence of a stemmed trifoliate process, extending from the epandrium; and in most species a hypopygial prominence on the dorsal surface of tergite 7+8 (some species, such as *A. divergens* Stein, 1913 (= *A. hancocki* van Emden, 1940) and *A. tetrastigma* Paterson, 1956, have it absent). Female *Atherigona s. str.* can be distinguished by having paired anterior plates on tergite 8. The male palpal shape has also served as diagnostic in the past, with the male palpus being short, apically dilated and usually with a degree of truncation, in contrast to the female palpus which is more straplike. There are, however, two new species described in this study (*A. heteropalpata* sp. n. and *A. flaviheteropalpata* sp. n.) with the males having straplike palpi, resembling those of the females of the subgenus.

Description remarks: The inclusion of the *r-m* crossvein ratio is important, as it can possibly be used in the future to discriminate between or at least group individuals of the same species based on the ratio itself if the measurement of enough individuals are recorded.

The following leg characters are common to all species of *Atherigona s. str.* and not repeated in the descriptions — Fore femur with one row of posterodorsal setae, one preapical seta; fore tibia with one ventral, one dorsal and one posterodorsal preapical seta. Mid femur with one preapical posterodorsal seta; mid tibia with one median posterior seta, apically with one antero- and one posteroventral as well as one ventral seta. Hind femur with one row of anterodorsal setae; hind tibia with one median anterodorsal seta, preapically with one dorsal seta, apically with one anteroventral and one ventral seta, submedially with one anteroventral and one posterodorsal seta.

An illustrated key to males of South African *Atherigona s. str.* species

- 1 Hypopygial prominence absent; frontal plate infuscated, glossy.....2
- Hypopygial prominence present; frontal plate appearance variable.....3
- 2 Proepimeron strongly differentiated, prominence with four equal length setae; trifoliate process complex, quinquefoliate (Fig. 1a) .....*divergens* Stein (syn. n. *hancocki* van Emden)
- Proepimeron weakly differentiated, with two setae and one hair-like setulae; trifoliate process trident shaped (Fig. 2a).....*tetrastigma* Paterson
- 3 Hypopygial prominence simple or reduced, sometimes appearing conical in posterior view.....4
- Hypopygial prominence developed otherwise, i.e. emarginate, knoblike, bifurcate, bilobate or tridentate.....5
- 4 Median piece of trifoliate process filiform in posterior view (Fig. 3a), greatly dilated in profile (Fig. 3b), being almost as wide as lateral plates; lateral plates without inner lobes; hypopygial prominence convex at apex (Fig. 3c, d) .....*parvielivis* sp. n.
- Median piece of trifoliate process with a slight apical dilation in both posterior view and profile (Fig. 4a, b), lateral plates at least 3× as wide as median piece in profile (Fig. 4b); hypopygial prominence much reduced with a slightly emarginated apex, almost appearing bifurcate (Fig. 4c) .....*parviumilata* sp. n.
- 5 Hypopygial prominence emarginated (Fig. 5c), knoblike (Fig. 7c) or truncated with projecting tubercles at apex (Figs 17c–e; 18c).....6
- Hypopygial prominence bifurcate (Figs 38c, 45c), bilobate (Figs 64c, 68c) or tridentate (Fig. 31c, 34c) .....33
- 6 Vibrissae golden or yellow; hypopygial prominence emarginate apically.....7
- Vibrissae infuscated; hypopygial prominence variable.....8
- 7 Median piece of trifoliate process in profile with a right-angled bend medially (Fig. 5b); filiform in posterior view, with an abrupt apical dilation; dilation with a shallow emargination (Fig. 5a); lateral plates without inner lobes in posterior view .....*angulata* Deeming
- Median piece of trifoliate process in profile hardly bent (Fig. 6b); median piece with medial dilation, as well as strong apical dilation; apex appearing convex and obtuse angled; lateral plates with inner lobes in posterior view (Fig. 6a).....*pulla* (Wiedemann)



- 8 Hypopygial prominence in the shape of a rounded or truncated knob, not projecting (Fig. 7c)..... 9
- Hypopygial prominence with projecting tubercles (Figs 18c, 25c)..... 18
- 9 Frontal plate with glossy appearance; frontal vitta infuscated, sometimes yellow on at least apical third..... 10
- Frontal plate with dusted appearance; frontal vitta appearance variable ..... 12
- 10 Frontal vitta, frontal plate and postpedicel entirely infuscate ..... 11
- Frontal vitta infuscated with apical third yellow, frontal plate glossy grey-brown; postpedicel infuscated except for narrow basal margin; wing entirely hyaline; tergites 4 and 5 with only dorsal spots and without setae on their posterior margins; hypopygial prominence in the shape of a rounded knob (Fig. 7c)..... *laevigata* (Loew)
- 11 Hypopygial prominence in the shape of a rounded knob (Fig. 8c); wing with dark-brown smoky suffusions over humeral crossvein and *Sc-R<sub>1</sub>*; tergites 4 and 5 each with a pair of lateral longitudinally lengthened markings in addition to the dorsal pairs; tergite 5 with a strong seta on the posterior margin of each dorsal spot; trifoliate process filiform in posterior view (Fig. 8a)..... *bimaculata* Stein
- Hypopygial prominence in the shape of a truncated knob (Fig. 9c–f); wing entirely hyaline; tergites 4 and 5 without any lateral longitudinal markings; trifoliate process greatly dilated apically, appearing almost circular in posterior view (Fig. 9a)..... *univittata* Deeming & Overman (in part)
- 12 Palpus yellow ..... 13
- Palpus infuscated..... 14
- 13 Fore femur entirely yellow; frontal vitta yellow; hypopygial prominence doorknob-shaped in posterior view (Fig. 10c); surstylus black on apex, with a small spot on posterior angle..... *nigrapicalis* Deeming (Fig. 10)
- Fore femur infuscated on apical half to third; frontal vitta infuscated, at most with a dull ferruginous suffusion at apex; hypopygial prominence small and subtruncate (Fig. 11c), somewhat angular in general shape when viewed dorsally (Fig. 11d); surstylus without any infuscation..... *longifolia* van Emden (Fig. 11)
- 14 Hypopygial prominence truncate knob-shaped, with apex slightly or broadly emarginated..... 15
- Hypopygial prominence truncate knob-shaped, but without any emargination.... 16
- 15 Hypopygial prominence with slightly emarginated apex; median piece of trifoliate process in profile narrow throughout its length, with gradual apical dilation; nowhere throughout its length is it more than  $\frac{1}{5}\times$  as broad as it is long (Fig. 12a, b); tergite 3 usually immaculate or with only some brownish shadows, although in some specimens with a darker marking on dorsum ..... *aurifacies* van Emden
- Hypopygial prominence broadly emarginated at apex; median piece of trifoliate process in profile very strongly dilated along most of its length, although much less so towards apex (Fig. 13b), piece almost half as wide medially as it is long ..... *griseiventris* van Emden
- 16 Wing with brown smoky suffusions at humeral crossvein and at *Sc-R<sub>1</sub>*; median piece of trifoliate process at most with only a slight median dilation in profile; lateral plates wider than median piece in profile..... 17

- Wing entirely hyaline; median piece of trifoliate process noticeably dilated from base to just before apex; lateral plates narrow in profile, with a backwards twisted appearance (Fig. 14b).....*capitulata* sp. n.
- 17 Brown smoky suffusion on wing weakly visible; scutellum uniformly grey dusted; median piece of trifoliate process strongly dilated, with a clear median emargination and four strong erect setae in posterior view (Fig. 15a); surstylus without dark markings..... *umbonata* sp. n.
- Brown smoky suffusion on wing clearly visible; scutellum grey dusted except for apical margin which is yellow; median piece of trifoliate process with slight apical dilation, apex convex without any emarginations and four setae weakly developed (Fig. 16a); surstylus with dark markings.....*flavifinis* sp. n.
- 18 Palpus shaped like that of subgenus *Achritochaeta*, i.e. straplike, not truncated or dilated at all (Fig. 17f); trifoliate process hyaline except for lateral margins of lateral plates which are infuscated, entire surface of process sculptured (Fig. 17a).  
..... *heteropalpata* sp. n.
- Palpus at least with some degree of truncation or dilation; trifoliate process surface usually smooth ..... 19
- 19 Hypopygial prominence with a blunt central tubercle and four sharply defined tubercles quadrately arranged (Fig. 18b, c); trifoliate process with median piece apically dilated, convex at apex (Fig. 18a).....*aster* van Emden
- Hypopygial prominence less complex, at most with only two projecting tubercles; trifoliate process variable ..... 20
- 20 Frontal vitta yellow on at least apical third..... 21
- Frontal vitta entirely infuscate..... 26
- 21 Frontal vitta infuscated, except for yellow apical third; postpedicel ferruginous for the most part, only infuscated on half of dorsal edge and apex; trifoliate process with median piece club-shaped in posterior view, having a pair of well-developed setae (Fig. 19a, b).....*marginifolia* van Emden
- Frontal vitta entirely yellow; postpedicel infuscated for the most part, only ferruginous on basal margin; trifoliate process variable ..... 22
- 22 Legs with some degree of infuscation..... 23
- All legs yellow; trifoliate process appearance variable..... 24
- 23 Hypopygial prominence stalklike with anterior projections weakly developed, appearing almost lobate (Fig. 20c–e); trifoliate process infuscated with a club-shaped median piece, the apex of which is either convex or slightly emarginated in some specimens, with four erect setulae; lateral plates with inner lobes present, plates with a hyaline centre (Fig. 20a) ..... *erectisetula* sp. n.
- Hypopygial prominence more truncated, with anterior projections moderately more developed (Fig. 21c); trifoliate process club-shaped in posterior view with three weak setulae on each “lobe” of the emarginated apex; lateral plates without inner lobes (Fig. 21a) ..... *humeralis* (Wiedemann)
- 24 Strong and clearly visible 2-4 dorsocentral vittae; scutum and scutellum golden dusted, only grey in immediate area surrounding the vittae and on centre of scutellum; hypopygial prominence truncated with extended lateral ridges leading towards anteriorly projecting tubercles (Fig. 22c–d); median piece of trifoliate



- process greatly dilated in profile except for extreme apex, wider than lateral plates (Fig. 22b).....*budongoana* van Emden (in part)
- Weak and barely visible 2-4 dorsocentral vittae; uniformly grey dusted, scutellum variable; hypopygial prominence stalked, apically dilated with anteriorly developed lobes/projecting tubercles; median piece of trifoliate process at most apically dilated apically .....25
- 25 Palpus apically dilated, truncated area diameter half the length of the entire palpus; parafacial golden dusted; median piece of the trifoliate process short, stout, with gradual dilation from base to the apex; lateral plates without any inner lobes (Fig. 23a).....*falcata* (Thomson)
- Palpus apically dilated, truncated area diameter much smaller than half the length of the entire palpus; parafacial grey dusted; median piece of trifoliate process club-shaped; lateral plates with inner lobes present (Fig. 24a) ..... *ndumoensis* sp. n.
- 26 Foreleg infuscated on at least apical third of tibia; palpus entirely infuscated, yellow or infuscated on at least basal third .....27
- Foreleg entirely yellow; palpus yellow .....*budongoana* van Emden (in part)
- 27 Palpi entirely infuscate .....28
- Palpi yellow on at least apical half.....32
- 28 Fore femur infuscated on at least apical half.....29
- Fore femur entirely yellow .....31
- 29 Frontal plate glossy black; wing entirely hyaline; trifoliate process apically greatly dilated, appearing almost circular in posterior view (Fig. 9a) .....  
..... *univittata* Deeming & Overman (in part).
- Frontal plate dusted; other characters variable.....30
- 30 Dorsum of abdomen without any median vittae; tergite 1+2 immaculate; tergites 3 and 4 with small equal sized round markings; median piece of trifoliate process apically dilated and slightly bifid; basal-lateral area of lateral plates angular in posterior view (Fig. 25a) .....*decempilosa* Dike
- Dorsum of abdomen with median vitta, except for tergite 5 which is immaculate; tergites 3 and 4 each with interrupted median vitta; tergite 3 with large dark marks, tergite 4 with small spots; median piece of trifoliate process dilated medially and apically; lateral plates narrow and curved in posterior view, with a long emargination in basal third of outer margin (Fig. 26a) .....*binubila* van Emden
- 31 Foreleg tarsi without any specialised chaetotaxy; trifoliate process with median piece filiform in posterior view, except for extreme apex (Fig. 27a), and quite strongly uncurved in profile, the apex appearing almost fishhook-like with a pair of long setulae (at least 5× as long as the secondary pair of setulae) (Fig. 27b).....  
..... *piscatoris* sp. n.
- Foreleg with apical three tarsal segments having long dorsally positioned setulae, at least as long as segments are wide; trifoliate process with median piece having an elongated dilation in posterior view (Fig. 28a), boomerang shaped in profile (Fig. 28b), having four equal length setulae at apex .....*oblonga* sp. n.
- 32 Surstylus with dark markings at base and at apex; trifoliate process hyaline over most of surface except for lateral margins of lateral plates which are infuscated;

- median piece with long hyaline setulae that are as long as piece itself (Fig. 29a, b).  
 ..... *libertensis* sp. n.
- Surstylus immaculate; trifoliolate process entirely infuscated, without any long setulae, only short black ones (Fig. 30a) ..... *angustiloba* van Emden
- 33 Hypopygial prominence tridentate (Figs 31c–37c), with three apparent lobes or processes ..... 34
- Hypopygial prominence otherwise developed ..... 40
- 34 Dark species with all legs entirely infuscated; palpus infuscated; apical half of median piece of trifoliolate process hyaline (the rest infuscated), with a pair of long hyaline setulae (longer than entire piece) (Fig. 31a); surstylus infuscated .....  
 ..... *albicornis* sp. n.
- At least mid and hind legs with majority of surface yellow; rest of characters variable ..... 35
- 35 Palpus entirely infuscate ..... 36
- Palpus yellow on majority of surface, in some cases with bases somewhat infuscate ..... 37
- 36 Median piece of trifoliolate process with a flattened Y-shaped dilation in posterior view (Fig. 32a); fore femur with no more than apical third infuscated; tergite 3 immaculate ..... *occidentalis* Deeming
- Median piece of trifoliolate process apically dilated in posterior view, appearing cordiform, apex with an emargination (Fig. 33a), although in some specimens much less pronounced; fore femur with apical two-thirds infuscated; tergite 3 with dark markings ..... *kirkspriggsi* sp. n.
- 37 Foreleg yellow; trifoliolate process with median piece having only short setulae at apex ..... 38
- Foreleg infuscated on apical third of femur, half of tibia and majority of tarsi; trifoliolate process with median piece having long setulae at apex, at least half the length of the median piece ..... 39
- 38 Frontal vitta infuscated, at most with a dark reddish suffusion at apex; lateral plates of trifoliolate process largely yellow, infuscated on lateral margins, median piece with gradual dilation towards apex, no emargination, hyaline on basal half; trifoliolate process hood quite prominent (Fig. 34a) ..... *perfida* Stein
- Frontal vitta appearing dirty yellow, medially darker than the rest; median piece of trifoliolate process infuscated, filiform except for dilated, emarginated apex; trifoliolate process hood reduced (Fig. 35a) ..... *chirinda* Dike
- 39 Frontal vitta infuscated on basal half, yellow on apical half; postpedicel yellow with infuscation on dorsal and apical margins; palpus entirely yellow; trifoliolate process with median piece wider at base than apex in profile (Fig. 36b), piece and lateral plates with fine setulae on surface (Fig. 36a); apex of median piece with a pair of long setulae ..... *cinarina* Séguy
- Frontal vitta appearing dark, dirty yellow, with no clear black-yellow division towards apex; palpus yellow with base infuscated; trifoliolate process with median piece apically dilated in profile and posterior view (Fig. 37a, b); process without fine surface setulae; apex of median piece with a pair of long setulae as in *A. cinarina* ..... *naqvii* Steyskal

- 40 Frontal vitta yellow or ferruginous on at least apical half to third.....41  
 – Frontal vitta entirely infuscated, at most with dull lighter suffusion at apex.....53
- 41 Foreleg with femur infuscated on apical half to third .....42  
 – Foreleg with femur yellow throughout, at most with dark marking at apex.....44
- 42 Antenna infuscated, at most with margins of scape and pedicel, and base of postpedicel ferruginous .....43  
 – Antenna appearing entirely ferruginous; hypopygial prominence strongly bifurcate (Fig. 38c); trifoliate process with median piece entirely filiform in posterior view (Fig. 38a), strongly dilated in profile (Fig. 38b) ..... *ruficornis* Stein
- 43 Palpus yellow, appearing straplike; hypopygial prominence with only a slight emargination apically, giving process a bilobed appearance (Fig. 39c); trifoliate process with median piece strongly dilated in posterior view with a clear emargination at apex, making piece appear cordiform (Fig. 39a), uniformly developed in profile with no clear dilation (Fig. 39b) ..... *flaviheteropalpata* sp. n.  
 – Palpus yellow, apically dilated and truncated; hypopygial prominence with a deep rounded bifurcation with apex pointing towards anterior (Fig. 40c); trifoliate process with median piece apically dilated in posterior view, deeply bifid (Fig. 40a), piece greatly dilated at base in profile, almost 2x as wide as lateral plates (Fig. 40b) ..... *latibasilaris* sp. n.
- 44 Fore tibia and tarsi entirely yellow, without any infuscation .....45  
 – Fore tibia infuscated on at least apical third; fore tarsi infuscated on at least one segment .....47
- 45 Head longer than deep; parafacialia very wide, at widest longer than horizontal length of eye, at narrowest still wider than postpedicel ..... *mitrata* Séguy (Fig. 41)  
 – Head deeper than long.....46
- 46 Hypopygial prominence in the shape of two fused pointed triangles when viewed dorsally (Fig. 42c); trifoliate process with median piece having a strong apical dilation, which is emarginated at apex, even more pronounced in profile (Fig. 42 a, b); lateral plates infuscated ..... *bedfordi* van Emden  
 – Hypopygial prominence truncated and bifurcated (Fig. 43c); trifoliate process with lateral plates at least two thirds as long as median piece in profile (Fig. 43b), with median piece dilated and convex at apex; lateral plates infuscated on apical half (Fig. 43a) ..... *ochracea* Deeming
- 47 Frontal vitta infuscated on at most basal two thirds.....48  
 – Frontal vitta entirely yellow .....50
- 48 Scutum grey dusted, with very weak and barely visible 2-4 dorsocentral vittae; frontal plate grey dusted; postpedicel yellow/ferruginous, in some cases with dorsal margins slightly infuscated; hypopygial prominence not deeply bifurcate, but shallow or bilobate .....49  
 – Scutum entirely yellow, undusted, with one clear median 2-4 dorsocentral vitta running to apex of scutellum; frontal plate glossy; postpedicel infuscated except for basal margin which is ferruginous; hypopygial prominence with a deep bifurcation running all the way down to base (Fig. 44b)..... *theodori* Hennig

- 49 Vibrissae infuscated; trifoliate process with median piece entirely filiform in posterior view (Fig. 45a); club-shaped in profile (Fig. 45b); lateral plates at least 2× as wide as median piece in profile; hypopygial prominence bifurcate .....  
 ..... *rubricornis* Stein
- Vibrissae golden; trifoliate process with median piece strongly dilated at apex in both posterior view and profile (Fig. 46a, b); lateral plates at most as wide as median piece in profile; hypopygial prominence bilobate (Fig. 46c–e).....  
 ..... *chrysohypene* sp. n.
- 50 Tergite 5 with a pair of small dark spots; hypopygial prominence with a wide, shallow bifurcation (Fig. 47c); trifoliate process with median piece having a gradual apical dilation in posterior view (Fig. 47a) ..... *tritici* Pont & Deeming
- Tergite 5 immaculate; other characters variable.....51
- 51 Hypopygial prominence with a shallow emargination between two lobes (Fig. 48c); trifoliate process with median piece apically dilated, having only a shallow emargination as well, apex with two small setulae on each “lobe” and four strongly projecting setulae, one pair lateral and the other anteriorly placed (Fig. 48a); lateral plates with inner lobes.....  
 ..... *londti* sp. n.
- Hypopygial prominence with two apically truncated lobes in the shape of two fused triangles when viewed from above; trifoliate process with a strong apically dilated median piece.....52
- 52 Trifoliate process with a strong apically dilated median piece in posterior view, emarginated at apex (Fig. 49a); lateral plates of trifoliate process at least twice as wide as median piece in profile, also, with inner lobes; hood inconspicuous in profile (Fig. 49b) ..... *hyalinipennis* van Emden
- Trifoliate process with median piece emarginate apically, with three short setulae on each “lobe” (Fig. 50a); lateral plates only slightly wider than median piece in profile, without inner lobes; hood appearing winged in posterior view.....  
 ..... *secrecauda* Séguy (in part)
- 53 Palpus infuscated, at most with surface of truncation lighter than the rest.....54
- Palpus yellow, at most with base infuscate .....57
- 54 Fore femur infuscated on at least apical third .....55
- Fore femur yellow, at most with a dark mark apically.....56
- 55 Fore femur infuscated on apical third; hypopygial prominence bifurcated with short pointed processes (Fig. 51c, f) ..... *lineata lineata* (Adams)
- Fore femur infuscated on apical two thirds; hypopygial prominence bifurcated with rounded processes, appearing truncated (Fig. 52c)..... *lineata torrida* Deeming
- 56 Hypopygial prominence in the shape of two fused triangles when viewed from above, i.e. bilobate (Fig. 50c)..... *secrecauda* (in part)
- Hypopygial prominence strongly and in some cases widely bifurcate (Fig. 53c) ....  
 ..... *lineata ugandae* van Emden
- 57 Hypopygial prominence bifurcate.....58
- Hypopygial prominence otherwise developed .....65
- 58 Bifurcation with bases of processes close together, appearing “v” or “u” shaped...59

- Bifurcation with bases of processes widely separated, at least twice width of processes themselves (Fig. 54c).....*soccata* Rondani
- 59 Tergite 1+2 with large dark markings or if absent then tergite 5 with at least a pair of small round spots ..... 60
  - Tergites 1+2 and 5 not as above ..... 61
- 60 Tergite 1+2 with two large dark markings and an expanded median vitta, giving it a triangular appearance; tergite 5 immaculate; trifoliate process with lateral plates having well-developed inner lobes, median piece apically emarginated (Fig. 55a) .  
..... *nesshurstensis* sp. n.
  - Tergite 1+2 immaculate; tergite 5 with two small dark round spots; trifoliate process with lateral plates without inner lobes, median piece apically convex (Fig. 56a) ....  
..... *vernoni* sp. n.
- 61 Palpus infuscated on basal half; scape and pedicel entirely infuscated; trifoliate process with median piece apically dilated and convex at apex with numerous minute hairs (Fig. 57a, e); hypopygial prominence with moderately deep, rounded bifurcation (Fig. 57c, g) ..... *convexa* sp. n.
  - Palpus entirely yellow; scape and pedicel ferruginous; trifoliate process and hypopygial prominence variable ..... 62
- 62 Hypopygial prominence with a deep, “v” shaped bifurcation (Fig. 58c); trifoliate process with a strongly dilated median piece, having a deep cleft at apex (Fig. 58a); median piece almost bent at an angle in profile (Fig. 58b) ..... *rimapicis* sp. n.
  - Hypopygial prominence with a more rounded or “u” shaped bifurcation; median piece of trifoliate process with only a slight to moderate apical dilation; appearance of the median piece in profile variable, but never bent ..... 63
- 63 Trifoliate process with median piece apically dilated, at least 2× as wide as rest of structure, having two projecting setulae on ventral surface of apex (Fig. 59a); lateral plates at least 2× as wide as median piece in profile; median piece filiform in profile, not dilated (Fig. 59b); epandrium and surstyli with dark markings .....  
..... *falkei* Deeming
  - Trifoliate process barely dilated apically in posterior view; lateral plates no more than 1.5× as wide as median piece in profile; median piece either dilated or filiform in profile; epandrium and surstyli with or without dark markings ..... 64
- 64 Scutum and postpronotal lobe uniform in appearance, grey dusted; hypopygial prominence processes noticeably projecting anteriorly (Fig. 60d, e); trifoliate process with median piece approximately same width as lateral plates in profile (Fig. 60b)..... *danielssoni* sp. n.
  - Scutum grey dusted and postpronotal lobe gold to golden-silver dusted; hypopygial prominence processes barely projecting anteriorly (Fig. 61d); trifoliate process with median piece dilated in profile along almost entire length (Fig. 61b) .....  
..... *tigris* sp. n.
- 65 Dorsal surfaces of tergites entirely uniformly infuscated up to lateral margins, with no individual markings or spot except for tergite 5 which is immaculate; scutum dark-brown ..... *stuckenbergi* sp. n. (Fig. 62)
  - Dorsal surfaces of tergites never entirely infuscated, but with only large marks or

- smaller spots, which never take up more than two thirds of an individual segment surface .....66
- 66 All legs yellow; hypopygial prominence subcordiform in anterior view (Fig. 63c); trifoliate process with median piece apically dilated and apex slightly emarginate in posterior view (Fig. 63b).....*steeleae* van Emden
- At least foreleg with some degree of infuscation; hypopygial prominence and trifoliate process variable .....67
- 67 Frontal plate dusted in appearance; wing appearance variable; trifoliate process variable .....68
- Frontal plate rather glossy in appearance; wing with brown smoky suffusions over humeral crossvein and *Sc-R*<sub>1</sub>; trifoliate process with median piece apically dilated, apex with quite a deep “u” shaped emargination (Fig. 64a) .....*matilei* Deeming
- 68 Trifoliate process infuscated over majority of surface .....69
- Trifoliate process hyaline over majority of surface, with only the apex of the median piece and stem infuscated; median piece entirely filiform in posterior view (Fig. 65a).....*gilvifolia* van Emden
- 69 Tergite 1+2 with broadly developed infuscated markings; hypopygial prominence stalked, with lateral lobes (Fig. 66c, d); median piece of trifoliate process rather filiform, with only a slight apical dilation (Fig. 66a), piece somewhat dilated throughout in profile (Fig. 66b)..... *trapezia* van Emden
- Tergite 1+2 immaculate; trifoliate process with median piece having a clear apical dilation, in profile only dilated at apex (if at all); hypopygial prominence without lateral lobes, but rather lobes appearing to be fused or projecting.....70
- 70 Trifoliate process with median piece convex at apex, without any emargination (Fig. 67a), without dilation in profile (Fig. 67b)..... *valida* (Adams)
- Trifoliate process with median piece almost roundly dilated with well-defined emargination at apex (Fig. 68a), somewhat apically dilated in profile (Fig. 68b) .....*zulu* sp. n.

*Atherigona albicornis* sp. n.

Fig. 31

**Etymology:** From the Latin *albus* (white) and *cornu* (horn), i.e. “white-horned” referring to the characteristically white apical half of the trifoliate process with median piece having two long hyaline setulae appearing as horns.

**Diagnosis:** This species is most similar to *A. flavifinis* sp. n. and *A. binubila* van Emden, 1940 and also keys to the latter in Deeming (1971) and Dike (1989a). It differs, however, in having its trifoliate process’ median piece dilated, with long white apical setulae and having its lateral plates expanded (Fig. 31a), compared to that of *A. binubila* (Fig. 26a) which appear narrow. *A. albicornis* also has a tridentate hypopygial prominence (Fig. 31c) compared to that of *A. binubila* (Fig. 26c).

**Description:**

*Male.*

**Measurements:** Body length: 3.38 mm; wing: 2.87 mm; *r-m* crossvein ratio: 0.447.



*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted posteriorly and laterally with narrow median part glossy. Ocellar triangle grey dusted, sub-shining. Frontal vitta wholly infuscated. Frontal plate grey dusted, sub-shining around bases of three pairs of proclinate frontal and two pairs of orbital setae; first pair of frontal setae only two thirds the length of the other two pairs. Parafacial silver-grey dusted, narrow. Scape, pedicel, postpedicel and arista infuscated. Palpus infuscated; apically dilated and truncated, with hyaline setulae.

*Thorax:* Ground colour dark. Postpronotal lobe grey dusted, with three setae and 13 setulae. Pleura grey dusted, except for area where anepisternum, anepimeron and katepisternum meet which is golden dusted. Proepisternum not conspicuously protruding. Scutum grey dusted, with three dark and clearly visible 2-4 dorsocentral vittae, extending and merging over a third the width of the scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and nine discal setulae; one pair of subbasal setae and one pair of apical setae, equal in length.

*Legs:* All legs entirely infuscated.

*Leg chaetotaxy:* Apical three fore tarsal segments with long dorsal setulae, at least as long as segments are wide.

*Wings:* Hyaline, except for slight brown smoky suffusion at apex of  $Sc-R_1$  and around humeral cross-vein. Veins dark-brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow, grey dusted on all dorsal surfaces; tergite 1+2 with dark-brown median trapezoidal mark, reaching the apical margins, appearing to flow into tergite 3 markings; tergite 3 with two large dark-brown oblong marks taking up two thirds of dorsum width; dark clearly visible median vitta that extends to basal-half of tergite 4; tergite 4 with two small round markings, taking up a third of dorsal surface; tergite 5 with two faint small brown markings. Hypopygial prominence tridentate, with two anterior projecting processes and one medial, somewhat upwards directed process. Trifoliate process stem 2.5× the length of the apical process, hyaline on basal half, infuscated on apical half with the exception of the area surrounding the hood which is also hyaline; median piece hyaline on apical half, with slight rounded bifurcation, dilated in both posterior and lateral views, with one pair of long hyaline setulae (longer than median piece); lateral plates infuscated, wider than median piece in profile, inner lobes present. Surstylus infuscated on majority of dorsal surface.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Royal Natal National Park, Tiger Falls area, 28°41.341'S 28°56.047'E, *Protea caffra* woodland, 17–18.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19841).

Paratypes 2♂: *KwaZulu-Natal*: Giant's Castle Game Reserve - Injasuti area, 29°07'08.57"S 29°26'19.60"E, 5–11.xii.1983, J.G.H. Londt (NMSA; Type no. 2502).

Distribution: South Africa.

### *Atherigona angulata* Deeming, 1971

#### Fig. 5

*Atherigona angulata* Deeming, 1971: 157, figs 54, 55; Deeming 1981: 105.

Diagnosis: This species can be distinguished from others by the combination of its golden/yellow vibrissae and yellow palpi and frontal vitta. Its hypopygial prominence

is knoblike with an apical emargination. The trifoliate process has its median piece bent at a right-angle when viewed in profile.

Type material examined: Holotype ♂: 'N. Nigeria [Nigeria]: Zaria, Samaru, 16.ii.1969, m.v. [Mercury vapour] trap (J.C. Deeming)' (NHMUK).

Other material examined: BOTSWANA: 1♂ Tlokweg, Sorghum field, 6–13.iii.1990, J.M. Mashonja, Malaise trap (NMSA). NAMIBIA: 1♂ Warmbad, [-28.448034 18.734433], Koakoveld, ii.1925, SAMC Expedition (SAM-DIP A013851); 1♂ Zesfontein, ii.1925, SAMC Expedition (SAM-DIP A013846). SOUTH AFRICA: *Eastern Cape*: 3♂ 3 km NW Grahamstown, Strowan farm, *Acacia* grassland, 1–2.i.1986, J.G.H. Londt (NMSA); 1♂ Resolution, Grahamstown, i–iv.1928, Miss. Walton (SAM-DIP A013860); *Free State*: 3♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05536, 05575, 05595); 3♂ Brandfort, Soetdoring Nature Reserve, Kruger's Drift, 28°51.303'S 26°02.302'E, *Acacia* Savanna, 5–6.iv.2009, A.H. & M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 05462, 05494, 05504); *KwaZulu-Natal*: 1♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 14–16.xii.2005, M.B. Mostovski (NMSA); 1♂ Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA); *Limpopo*: 1♂ Mogol Nature Reserve, Ellisras Dist., 23°58'S 27°45'E, 19–23.xi.1979, S.J. van Tonder, C. Kok, G.L. Prinsloo & M.W. Mansell (SANC); *Western Cape*: 1♂ 10 km S Bredasdorp, 34°37'S 20°03'E, 12.x.1994, R. Danielsson (MZLU).

Distribution: Botswana, Nigeria, South Africa.

### *Atherigona angustiloba* van Emden, 1956

Fig. 30

*Atherigona angustiloba* van Emden, 1956: 521, figs 7, 8.

Diagnosis: This species can be distinguished from others by its infuscated frontal vitta, front half of tibia and basal two tarsal segments. Its palpi is yellow and tergite 5 is immaculate. The hypopygial prominence is knoblike with two posteriorly projecting tubercles at its apex. The trifoliate process is infuscated, with the median piece strongly dilated apically.

Type material examined: Holotype ♂: 'Urundi [Burundi]: Bururi, 1800-2000m, 5–12.III.53. (P. BASILEWSKY) ♂ type' (MRAC).

Other material examined: SOUTH AFRICA: *Eastern Cape*: 1♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); 1♂ Hogsback, North of Alice, 2–3.xi.1964, B.R. Stuckenberg & P. Stuckenberg (NMSA); 2♂ Plaatbos Forest, 33°57.863'S 23°54.484'E, 300 m, 31.iii–1.iv.2009, A.H. Kirk-Spriggs & S. Otto (BMSA(D) 05600 & 05602); 2♂ Tsitsikamma National Park, below Sleepkloof hut, 33°56.974'S 23°54.926'E, Indigenous forest, 20–22.i.2009, A.H. Kirk-Spriggs & S. Otto, Malaise trap (BMSA(D) 03272 & 03273); *Free State*: 1♂ Harrismith, Scotland farm, 27°58'59.5"S 29°37'09.8"E, dense *Leucosidea* [*Leucosidea*] dominated scrub, 10–12.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 12759); *KwaZulu-Natal*: 1♂ Bulwer, Home Rule, [29.82333°S 29.6825°E], 1–2.iii.1986, A.E. Whittington (NMSA); 1♂ Cathedral Peak area, [29°00'04"S 29°16'30"E], Forest & Grassland, 14–18.ix.1982, D. Barraclough & C. Barraclough (NMSA); 1♂ Cathedral Peak area, [29°00'04"S 29°16'30"E], 4–11.iv.1977, J.G.H. Londt, ex. Malaise (NMSA); 2♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA); 10♂ Giant's Castle [Game Reserve], 29°15.955'S 29°31.228'E, 1710 m, 8–10.xii.2004, M.B. Mostovski (NMSA); 1♂ Giant's Castle Game Reserve - Injasuti area, 29°07'08.57"S 29°26'19.60"E, 5–11.xii.1983, J.G.H. Londt (NMSA); 1♂ Karkloof Nature Reserve, 29°18'10"S 30°13'40"E, 1260 m, Mixed Podocarpus Forest Edge, 10.xii.1987, J.G.H. Londt & H. Londt (NMSA); 1♂ Midlands, Howick, 29°29'S 30°13'E, 1060 m, Streamside vegetation, 10.viii.1991, A.E. Whittington (NMSA); 1♂ Royal Natal National Park, 28°41'S 28°56'E, 1440 m, Forest margin, 23–28.iii.1991, J.G.H. Londt, Malaise trap (NMSA); 29♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosedes* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19557, 19737, 19563, 19629, 19564, 19627, 19589, 19784, 19741, 19652, 19549, 19612, 19615, 19574, 19703, 19587, 19687, 19595, 19731, 19773, 19767, 19593, 19743, 19635, 19646, 19752, 19764, 19640, 19793); 2♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Protea caffra* w/land gully, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19823 & 19826); 1♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, Afromontane forest fragment, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap

(BMSA(D) 19840); *Western Cape*: 1♂ Big Tree Forest, 33°55'S 22°40'E, 400 m, Woodville, 9.ix.1993, D. Barraclough & C. Barraclough (NMSA); 1♂ Cape Town, NE of Houtbay, 34°02'S 18°20'E, 3.x.1994, R. Danielsson (MZLU).

Distribution: Burundi, South Africa.

*Atherigona aster* van Emden, 1940

Fig. 18

*Atherigona aster* van Emden, 1940: 117, figs 24, 46; Deeming 1981: 104, figs 13 (female tergite 8).

Diagnosis: This species can be distinguished from others by the combination of its yellow frontal vitta and very distinctly shaped hypopygial prominence which has a blunt central tubercle and four sharply defined tubercles that are quadrately arranged.

Type material examined: Holotype ♂ 'KENYA: Naivasha, vii.1937 (H.J.A. Turner)' (NHMUK).

Paratype ♂ same label data as holotype (NHMUK).

Other material examined: SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Mkuze Reserve, 3–11.x.1977, J.G.H. Londt, ex. Malaise (NMSA). SWAZILAND: 1♂ 13 km N of Ngogolo, Panata Ranch, 26°19'S 31°38'E, 300 m, Bushveld, 22–24.iv.1991, J.G.H. Londt & L. Schoeman (NMSA).

Distribution: Democratic Republic of the Congo, Kenya, South Africa (new), Swaziland (new).

*Atherigona aurifacies* van Emden, 1940

Fig. 12

*Atherigona aurifacies* van Emden, 1940: 136, figs 9, 40; Deeming 1971: 176, figs 127–129.

Diagnosis: This species can be distinguished from others by its infuscated antennae, frontal vitta and palpi. The hypopygial prominence is in the shape of a truncated knob with its apex emarginated. The trifoliate process has its median piece narrow throughout its length in profile, with only a slight apical dilation. Tergite 3 is immaculate or with only slight brownish shadows.

Type material examined: Holotype ♂ 'UGANDA: Ruwenzori Range: xii.1924–i.1935. B.M.E. Afr. Exp. B.M. 1935-203, Kilembe, 4500ft [1372 m], F.W. Edwards' (NHMUK).

Other material examined: KENYA: 1♂ Rift Valley, Ol Arabe Gorge, 11.xi.1988, R.K. Butlin, leg. Deeming (NMSA) (Previously NMW.Z.1988–167). SOUTH AFRICA: *Western Cape*: 1♂ 5 km SW Swellendam, Breede river, Rocky slope above Breede river, 24.ix.1979, J.G.H. Londt (NMSA).

Distribution: Burkina Faso, Burundi, Cameroon, Kenya, Nigeria, Rwanda, South Africa, Uganda.

*Atherigona bedfordi* van Emden, 1940

Fig. 42

*Atherigona bedfordi* van Emden, 1940: 120, figs 27, 55; Deeming 2000: 284.

*Atherigona humeralis* (Wiedemann, 1830), (synonymy reversed): Deeming 1979.

Diagnosis: This species can be distinguished from others by its yellow frontal vitta, palpi and legs. The postpedicel is also mainly ferruginous. The hypopygial prominence is in the shape of two fused triangles. The trifoliate process has its median piece emarginated and strongly dilated apically.

Type material examined: Holotype ♂ [SUDAN]: 'Shendi, A.H. Husein, 14.xi.28, Bred on ?Pura?' (NHMUK).

Other material examined: SAUDI ARABIA: 1♂ Aseer, Maraba, 1–30.v.2004, H.A. Dawah, Malaise trap (NMSA). SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Ndumu [Ndumo] Game Reserve, Camp & Riverine bush, 4–9.x.1982, J.G.H. Londt (NMSA).

Distribution: Angola, Chad, The Gambia, Kenya, Madagascar, Mali, Namibia, Nigeria, Senegal, Seychelles, South Africa (new).

*Atherigona bimaculata* Stein, 1910

Fig. 8

*Atherigona bimaculata* Stein, 1910: 157; van Emden 1940: 116, figs 6, 34; van Emden 1956: 519; Deeming 1971: 153, figs 30–32.

Diagnosis: This species can be distinguished from others by the very unique setal arrangement on tergite 5 – a strongly developed seta is present on the posterior margin of each dorsal spot. Its wings have dark smoky suffusions over the humeral crossvein and *Sc-R*<sub>1</sub>. The frontal plates of the head are glossy, shining black. The hypopygial prominence is in the shape of a rounded knob.

Type material examined: Lectotype ♂ [REPUBLIC OF SEYCHELLES]: ‘Silhouette’ 08 Seychelles Exp., Seychelles Is., Prof J.S. Gardner, 1914-537’ (NHMUK).

Paralectotype ♂ [REPUBLIC OF SEYCHELLES] ‘Fundorte. Seychelles: Ziemlich zahlreich auf silhouette VIII. 1908 und Mahé (Morne Blanc, X., XI. 1908, Cascade Estate, I. 1909)’ (ZMHB).

Other material examined: MALI: 1♂ Yanfolila, 9.ix-7.x.1986, J. Durham, leg. Deeming (NMSA) (Previously NMW.Z.1987-144). SOUTH AFRICA: *KwaZulu-Natal*: 1♂ 15 km SE Ingwavuma, Bushy area with big trees, 21.ii.1979, J.G.H. Londt, ex Malaise trap (NMSA); 1♂ Ndumo Game Reserve, main road, 26°54.288'S 32°17.974'E, Sand and broad-leaved deciduous forest, 4-8.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 17954); 1♂ Port Edward, 31°03'S 30°13'E, 8.vi.1997, K.R. Cradock, Malaise trap (NMSA); 1♂ Ramsgate, Riverine bush, 11-20.i.1985, J.G.H. Londt, Malaise trap (NMSA); 1♂ Ramsgate Butterfly Sanctuary, 30°53.3'S 30°20.4'E, 26-29.iv.2004, M.B. Mostovski, light trap (NMSA); 1♂ Zululand, Ndumu [Ndumo] Game Reserve, 26.x.1972, M.E. Irwin (NMSA).

Distribution: Cameroon, Congo, Democratic Republic of the Congo, Kenya, Madagascar, Mali, Mauritius, Nigeria, Rwanda, Senegal, Seychelles, South Africa (new).

*Atherigona binubila* van Emden, 1940

Fig. 26

*Atherigona binubila* van Emden, 1940: 138, fig. 10; Deeming 1971: 180, figs 151, 152; 1979: 48, fig. 46.

Diagnosis: This species can be distinguished from others by its infuscated frontal vitta and palpi. The wings have brownish suffusions over the humeral crossvein and *Sc-R*<sub>1</sub>. The hypopygial prominence is knoblike, with two strongly projecting tubercles and the trifoliate process has its median piece and lateral plates narrow.

Type material examined: Holotype ♂: KENYA: ‘Van Someren, Nairod[b]ji, ix. 1937’ (NHMUK).

Distribution: Kenya, Mali, Nigeria, South Africa, Zimbabwe.

*Atherigona budongoana* van Emden, 1940

Fig. 22

*Atherigona budongoana* van Emden, 1940: 131, figs 23, 59; Deeming 1971: 176, figs 125, 126; Deeming 1979: 45, fig. 34 (female tergite 8).

Diagnosis: This species can be distinguished from others by the combination of either yellow or infuscated (see below) frontal vitta, yellow palpi and legs. The hypopygial prominence is truncated with extended lateral ridges leading towards anteriorly projecting tubercles. The trifoliate process has the median piece greatly dilated in profile, being wider than the lateral plates.

Type material examined: Holotype ♂: UGANDA: Budongo Forest, 7-8.ii.1935, F.W. Edwards. B.M. 1935-203 (NHMUK).

Other material examined:

**Infuscated frontal vitta:** SOUTH AFRICA: *Eastern Cape:* 1♂ Hogsback, Tyume Forest, 32°36.174'S 26°56.303'E, 1166 m, Indigenous Afromontane forest, 10.iv.2010, A.H. Kirk-Spriggs & V. Swart, Malaise trap (BMSA(D) 20085); *KwaZulu-Natal:* 1♂ Cathedral Peak area, 7–12.iv.1982, J.G.H. Londt, ex. Malaise (NMSA); 1♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA); 1♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 14–16.xii.2005, M.B. Mostovski (NMSA); 30♂ Royal Natal National Park, Mahai campsite area, 28°41.386'S 28°56.288'E, Straddling Mahai River, 17–18.ii.2010, A.H. Kirk-Spriggs & V. de Swart, Malaise trap (BMSA(D) 19814, 19820, 19677, 19676, 19693, 19717, 19571, 19718, 19551, 19824, 19775, 19643, 19546, 19783, 19697, 19721, 19756, 19667, 19576, 19613, 19789, 19716, 19672, 19639, 19778, 19644, 19732, 19769, 19688, 19560); 1♂ Royal Natal National Park, Tugela Valley, 3.iv.1951, Brinck & Rudebeck (MZLU); 1♂ Weenen Nature Reserve, 28°51'S 29°59'E, Thornveld, 1–4.x.1990, A.E. Whittington, Malaise trap (NMSA); 1♂ *Mpumalanga:* White River, 5.iii.1953 (NHMUK); *North West Province:* 1♂ Rustenburg Nature Reserve, 25°40'S 27°12'E, 17–20.iii.1980, C.D. Eardley, W.A. Harrop & C.G. Moolman, Malaise trap (SANC).

**Yellow frontal vitta:** SOUTH AFRICA: *KwaZulu-Natal:* 2♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosedes* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19605, 19568). 1♂ Louwsberg, iGwala Gwala, 27°34'S 31°17.9'E, 1090 m, 2–3.vi.2005, M.B. Mostovski, YPT [yellow pan trap] (NMSA); 1♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA); *Mpumalanga:* 1♂ Baberton, xii.1978, C.D. Eardley (SANC).

Distribution: Burkina Faso, Democratic Republic of the Congo, Kenya, Nigeria, South Africa (new), Uganda.

Remarks: The specimens with yellow frontal vitta would key to near *A. pallidipleura* Deeming, 1971 when using the key to Afrotropical species in Dike (1989a), but differ from it in having the frontal vitta yellow instead of infuscated. Also the trifoliate process shape did not match. If run through the key as having the frontal vitta infuscated, they key easily to *A. budongoana*. This then is the first record of variation in frontal vitta colour for this species.

### *Atherigona capitulata* sp. n.

Fig. 14

Etymology: From the Latin *capitulatus* (ending in a small head), referring to the size of the apex of the median piece in comparison to the rest of the structure when viewed in profile.

Diagnosis: This species is most similar to *A. griseiventris* van Emden, 1940, and also keys to it in Deeming (1971) and Dike (1989a). The median piece (Fig. 14a, b) of the trifoliate process looks quite similar in profile to that of *A. griseiventris* (Fig. 13a, b), but lacks the apical dilation when viewed posteriorly; the lateral plates are also shaped entirely different, appearing twisted (Fig. 14b) compared to that of *A. griseiventris* (Fig. 13a). Furthermore, the hypopygial prominence of *A. capitulata* is without any apical emargination, compared to *A. griseiventris*.

Description:

*Male.*

*Measurements:* Body length: 3.844 mm; wing: 3.344 mm; *r-m* crossvein ratio: 0.392.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput silver-grey dusted posteriorly and laterally with narrow median part glossy. Ocellar triangle silver-grey dusted. Frontal vitta infuscated. Frontal plate silver-grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted on upper and gold dusted on lower half, slightly wider than arisal base. Scape and



pedicel infuscated with ferruginous margins, postpedicel and arista entirely infuscated. Palpus entirely infuscated; apex truncated and dilated, with hyaline hairs and yellow vertex.

*Thorax*: Ground colour dark. Postpronotal lobe gold dusted, with three setae and 10 setulae. Pleura silver-grey dusted. Proepisternum inconspicuous, gold dusted. Scutum grey dusted, with three 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and 8 discal setulae, one pair of subbasal setae, being 0.75× the one pair of apical setae.

*Legs*: All legs yellow except for foreleg with apical half of tibia and entire basitarsus infuscated.

*Leg chaetotaxy*: Fore tarsi with apical three segments having erect setulae on dorsal surface.

*Wings*: Hyaline. Veins brown. Halteres white. Calypters white.

*Abdomen*: All tergites yellow; tergite 1+2 with dark wide marking taking up most of dorsal surface; tergite 3 with two medium sized dark-brown marks taking up just over two thirds of dorsal surface; tergite 4 with two small round markings, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence knoblike. Trifoliate process stem 2.8× the length of the apical process; entire trifoliate process infuscated; median piece linear in posterior view, very broad in profile, almost shaped like an axe-head, much wider than lateral plates; lateral plates without inner lobe, narrow in both posterior view and profile. Surstylus with dark markings at base dorsally.

*Female*. Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Louwsberg, iGwala Gwala, 27°34'S 31°17.9'E, 1090 m, 2-3.vi.2005, M.B. Mostovski, YPT [yellow pan trap] (NMSA; Type no. 2503).

Paratypes: 13♂ same data as holotype (NMSA; Type no. 2503).

Other material examined: 1♂ same data as holotype and paratypes (NMSA).

Distribution: South Africa.

### *Atherigona chirinda* Dike, 1989

Fig. 35

*Atherigona chirinda* Dike, 1989b: 75, figs 6, 7.

Diagnosis: This species can be distinguished from others by the combination of its yellow frontal vitta, palpi and legs, infuscated postpedicel, tridentate hypopygial prominence and trifoliate process with median piece filiform except for a dilated, emarginated apex. The trifoliate process also has its hood reduced.

Type material examined: Holotype ♂: [ZIMBABWE]: 'Mt. Chirinda, Mashonaland, 3800ft [1158 m], 12.6.11, C.F.M. Swynnerton, 1912-117' (NHMUK).

Distribution: Zimbabwe (erroneously given by Dike (2003) as South Africa).

### *Atherigona chrysohypene* sp. n.

Fig. 46

Etymology: From the Greek *chrysops* (golden) and *hypene* (moustache), referring to the very characteristic golden yellow vibrissae on the jowls.



Diagnosis: This species has golden yellow vibrissae, similar to that of *A. angulata* (Fig. 5) and *A. pulla* (Wiedemann, 1830) (Fig. 6) and keys to *A. marginifolia* van Emden, 1940 (Fig. 19) in Deeming (1971) as well as Dike (1989a), but differs greatly in the overall structure and colouring of the trifoliolate process and shape of the hypopygial prominence (Fig. 4).

Description:

*Male.*

*Measurements:* Body length: 3.162 mm; wing: 2.8 mm; *r-m* crossvein ratio: 0.403.

*Head:* Ground colour dark. All head setae and setulae infuscated except for vibrissae which are all golden yellow. Occiput grey dusted with narrow median part glossy, laterally golden dusted. Ocellar triangle grey dusted. Frontal vitta infuscated in basal and yellow in apical half. Frontal plate entirely grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial golden dusted, wider at narrowest than arista base. Scape, pedicel and postpedicel ferruginous (some paratypes with dorsal margins of postpedicel infuscated). Arista brown. Palpus yellow; apex truncated and dilated, with hyaline hairs.

*Thorax:* Ground colour dark. Postpronotal lobe golden dusted, with three setae and 11 setulae. Pleura golden dusted except for meron which is grey dusted. Proepisternum inconspicuous and gold dusted. Scutum grey dusted, with three very faint, barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and six discal setulae, one pair of subbasal setae and one stronger pair of apical setae (subbasal  $0.7\times$  apical).

*Legs:* All legs yellow except for fore tibia and tarsi which are entirely infuscated.

*Leg chaetotaxy:* All fore tarsi except for basitarsus with long dorsal setulae.

*Wings:* Hyaline, except for slight brown smoky suffusion at areas surrounding  $Sc-R_1$  and the humeral crossvein. Veins dark-brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 immaculate; tergites 3 and 4 with a pair of small dark spots, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence bilobate. Trifoliolate process stem  $2.5\times$  the length of the apical process; stem and hood lighter than rest of process which is infuscated, lateral plates and median piece infuscated; median piece apically dilated, cordiform, wider than lateral plates in posterior view; lateral plates without inner lobes. Surstylus without dark markings.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *Free State:* Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05557).

Paratypes: 4♂ same data as holotype (BMSA(D) 05522, 05523, 5546, 05566).

Other material examined: SOUTH AFRICA: *Eastern Cape:* 2♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); *Free State:* 1♂ 42 km SW of Winburg, 28°45'S 26°45'E, 1500 m, Grassland & bushes, 20.iii.1991, J.G.H. Londt & A.E. Whittington (NMSA); *Gauteng:* 2♂ Johannesburg, 18.i.1953, Paterson (NHMUK); 1♂ Johannesburg, 26.xii.1946, F. Zumpt (NHMUK); 1♂ Pretoria, 26.ii.1916, C.J. Swierstra (NMSA); *KwaZulu-Natal:* 1♂ Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA).

Distribution: South Africa.

*Atherigona cinarina* Séguy, 1938

Fig. 36

*Atherigona cinarina* Séguy, 1938: 371; van Emden 1956: 520, figs 5, 6.

Diagnosis: This species can be distinguished from others by the combination of its frontal vitta being infuscated on the basal half and yellow on apical half, postpedical yellow with infuscated dorsal and apical margins and yellow palpi. The trifoliate process has its median piece wider at its base than at apex when viewed in profile, and the process has a pair of long setulae apically. The median piece and lateral plates also have distinctive fine setulae on their surfaces.

Type material examined: Holotype ♂: KENYA: Mars, Kitale, Uashin Gishu, 2100 m (MNHN).

Distribution: Burundi, Ethiopia, Kenya, Nigeria, Rwanda, South Africa, Uganda.

*Atherigona convexa* sp. n.

Fig. 57

Etymology: From the Latin *convexus* (arched outward), referring to the convex apex of the median piece of the trifoliate process.

Diagnosis: This species is very similar to *Atherigona oryzae* Malloch, 1925, with *A. oryzae* keying to *A. convexa* in this manuscript key. However, *A. convexa* differs from *A. oryzae* in the following aspects: fore femur immaculate vs. having a dark marking apically; median piece of the trifoliate not membranous as in *oryzae*; the stem of the trifoliate process linear compared to being swollen in *A. oryzae*; *A. convexa* with wing without a dark marking in area surrounding *Sc-R*<sub>1</sub>.

Description:

*Male.*

*Measurements:* Body length: 3.08 mm; wing: 2.64 mm; *r-m* crossvein ratio: 0.426.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput silver-grey dusted throughout with narrow median part glossy, also laterally silver-grey dusted. Ocellar triangle grey dusted. Frontal vitta infuscated with dull reddish suffusion. Frontal plate silver-grey dusted throughout with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial golden-silver dusted, at narrowest only slightly wider than arista base. Scape and pedicel infuscated with ferruginous margins, postpedicel infuscated except for very narrow basal area. Arista brown. Palpus yellow on apical half, infuscated on basal half, apex truncated and dilated with hyaline hairs.

*Thorax:* Ground colour dark. Postpronotal lobe gold dusted anteriorly and silver-grey posteriorly, with three setae and 10 setulae. Pleura entirely silver-grey dusted; Proepisternum inconspicuous and gold dusted. Scutum grey dusted throughout, with three faint 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and nine discal setulae, one pair of subbasal setae and one pair of apical setae (subbasal and apical setae equal).

*Legs:* All legs yellow except for apical third of fore tibia and fore basitarsus together with following tarsal segment, which are infuscated.

*Leg chaetotaxy:* Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline. Veins brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 immaculate; tergite 3 with a pair of large oblong marks, taking up two thirds of dorsal surface, with the rest being grey dusted; tergite 4 with small round markings, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence bifurcated. Trifoliate process stem 3× the length of the apical process; lateral plates infuscated, all other parts brown; median piece strongly dilated at apex in profile and in posterior view; lateral plates appearing just as wide as median piece dilation in profile, with small inner lobes in some specimens, in some others difficult to perceive. Surstylus not infuscated.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Ndumo Game Reserve, Shokwe area, 26°52.125'S 32°13.731'E, Ficus forest, 30.xi–4.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 16351).

Paratype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Ndumo Game Reserve, main road, 26°54.288'S 32°17.974'E, Sand and broad-leaved deciduous forest, 4–8.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 17545).

Other material examined: *Gauteng*: 2♂ Johannesburg, 18.i.1953, Paterson (NHMUK); *Free State*: 1♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05584).

Distribution: South Africa.

### *Atherigona danielssoni* sp. n.

Fig. 60

*Etymology:* Named after the collector of the holotype, Dr Roy Danielsson.

*Diagnosis:* This species keys to *Atherigona ochripes* Deeming, 1981 in Dike (1989a). *A. danielssoni* differs, however, in having the hypopygial prominence weakly bifurcated and projecting compared to truncated and emarginated in *A. ochripes*. The trifoliate process of the new species also differs in coloration as well as structure, most notably in having inner lobes on its lateral plates compared to that of *A. ochripes* that do not.

*Description:*

*Male.*

*Measurements:* Body length: 3.379 mm; wing: 2.52 mm; *r-m* crossvein ratio: 0.411.

*Head:* Ground colour brown. All head setae and setulae infuscated. Occiput grey dusted throughout with narrow median part glossy, laterally silver-grey dusted. Ocellar triangle grey dusted. Frontal vitta infuscated, slightly ferruginous apically. Frontal plate grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, as wide as arista base at narrowest. Scape and pedicel ferruginous, postpedicel infuscated except for extreme basal area. Arista brown. Palpus yellow, apex truncated and dilated with hyaline hairs.

*Thorax:* Ground colour dark. Postpronotal lobe grey dusted, with three setae and 13 setulae. Pleura entirely grey dusted, Proepisternum inconspicuous and grey dusted. Scutum grey dusted throughout, with three very faint and barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one

pair of discal setae and eight discal setulae, one pair of subbasal setae and one pair of apical setae (cannot compare subbasal and apical due to damage to the latter).

*Legs*: All legs yellow except for fore basitarsus and extreme apex of fore tibia which appears darker than the rest of legs.

*Leg chaetotaxy*: Fore femur with one submedial posteroventral seta; dorsal surface of fore tarsi, except for basitarsus with long setulae (at least as long as width of segments).

*Wings*: Hyaline. Veins light brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen*: All tergites yellow; tergite 1+2 immaculate; tergite 3 with a pair oblong dark markings taking up two thirds of dorsal surface; tergites 4 with a pair of small brown spots taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence bifurcated. Trifoliate process stem 3× the length of the apical process; entirely infuscated except for apical third of stem which is hyaline, and the hood and centres of the lateral plates which are much lighter than the rest; median piece gradually dilated towards apex, appearing somewhat club-like in posterior view, linear in profile with an overall curved appearance; lateral plates with inner lobes, appearing wider than median piece in profile and posterior view. Surstylus slightly infuscated at base and entire apex.

*Female*. Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: 17 km NE Empangeni, Nseleni River, 28°42'S 32°01'E, 24.x.1994, R. Danielsson (MZLU).

Distribution: South Africa.

### *Atherigona decempilosa* Dike, 1989

#### Fig. 25

*Atherigona decempilosa* Dike, 1989b: 76, figs 8–10.

*Diagnosis*: This species can be distinguished from others by its infuscated frontal vitta, antennae and palpi in combination with its legs having some degree of infuscation on all segments. The trifoliate process and hypopygial prominence appearing as in the redescription below and Fig. 25.

*Redescription*: Upon inspection of the Holotype, I found that the figures for the hypopygial prominence used in Dike (1989a, 1989b) were incorrect and illustrated an entirely different shape, differing from the holotype material in that the hypopygial prominence was figured as plain knoblike, where in reality it is knoblike with a pair of lateral anteriorly projecting processes. The hood of the trifoliate process was also illustrated as simplified and not figured as well-developed and without an emargination at its posteroventral edge.

Type material examined: Holotype ♂: '*KwaZulu-Natal*: Giants Castle Res. Natal Drakensberg, S. Africa. 5800ft. [1768 m] B. & P. Stuckenberg, 18–23 Sept. 1961' (NMSA; Type no. 1724).

Paratypes: *KwaZulu-Natal*: 4♀ same label data as holotype (NMSA).

Other material examined: SOUTH AFRICA: *Free State*: 2♂ Harrismith, Scotland farm, 27°58'59.5"S 29°37'09.8"E, dense *Leucosidea* [*Leucosidea*] dominated scrub, 10–12.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 12781, 12783); *KwaZulu-Natal*: 1♂ Cathedral Peak area, Forest & Grassland, 14–18.ix.1982, D. Barraclough & C. Barraclough (NMSA); 1♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA).

Distribution: South Africa.

*Atherigona divergens* Stein, 1913

## Fig. 1

*Atherigona divergens* Stein, 1913: 532; Deeming 1971: 183.

*Atherigona hancocki* van Emden, 1940: 113, **syn n.**

**Diagnosis:** This species is easily distinguishable from others by its projecting and knob-shaped proepisternum with 4 equally developed and strong setae, and its very complex and uniquely shaped quinquefoliate “trifoliate process” (Fig. 1).

Type material examined:

Holotype ♂ of *A. divergens*: SOUTH AFRICA: *KwaZulu-Natal*: ‘Durban, F. Muir’ (ZMHB).

Holotype ♂ of *A. hancocki*: UGANDA: Kampala G.L.R. Hancock 18.iv.1926. Van Emden 1940 (MRAC).

Other material examined: SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Drakensberg Garden Caravan Park, 29°45'S 29°15'E, ca. 1750 m, On Cassine flowers, 6–11.i.1988, J.G.H. Londt (NMSA); 5♂ Empangeni, 28°38'S 31°42'E, 5–15.i.1990, P.E. Reavell, Malaise trap (NMSA); 1♂ Port Edward, 31°03'S 30°13'E, 9.iv.1997, K.R. Cradock, Malaise trap (NMSA); 1♂ Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA); 4♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosidea* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19729, 19592, 19742, 19797).

**Distribution:** as *A. divergens*: South Africa; as *A. hancocki*: Burkina Faso, Cameroon, Kenya, Rwanda, South Africa, Tanzania, Uganda.

**Discussion:** *A. hancocki* van Emden has since its initial description been one of the stranger species within the subgenus, with it being the only species with a quinquefoliate “trifoliate process”. One could be excused for thinking it impossible that it could actually become a junior synonym. *A. divergens* Stein is currently housed in the ZMHB, after being thought lost together with numerous other *Atherigona* types until its “rediscovery” in the early 2000s. *A. divergens* has a relatively incomplete description (as do most species described at that time), but I was fortunate enough to have been able to examine both *A. divergens* and *A. hancocki*, and was able to compare the holotype of *A. divergens* to the original description of *A. hancocki*, as well as the holotype, and it is identical to many of the diagnostic features of *A. hancocki*, viz. the proepisternum knob-shaped with four equally developed and strong setae; the hypopygial prominence absent; the frontal plates infuscated and glossy; the frontal vitta dull infuscated. Unfortunately the trifoliate process of *A. divergens* is missing so that cannot be compared. From the combination of characters (many considered unique to *A. hancocki*), *Atherigona hancocki* is hereby designated as a junior synonym of *Atherigona divergens*.

*Atherigona erectisetula* sp. n.

## Fig. 20

**Etymology:** From the Latin *erectus* (erect) and *setula*, bringing attention to the four erect setulae at the apex of the trifoliate process’ median piece.

**Diagnosis:** This species keys close to *A. hyalinipennis* and *A. pharalis* in both Deeming (1971) and Dike (1989a), but the shape and appearance of its trifoliate process as well as hypopygial prominence differs from that of *A. pharalis*, as it has four erect setae at the apex of a club-shaped median piece of the trifoliate process compared to a Y-shaped median piece. The trifoliate process also has no visible tomentum compared to that of *A. pharalis* which is tomentose. *A. erectisetula* differs from *A. hyalinipennis* in having

its postpedicel infuscated as opposed to being only infuscated along the dorsal margins. *A. erectisetula* furthermore has its median piece of the trifoliate process much narrower in posterior view, with the entire process much more infuscated compared to that of *A. hyalinipennis* which has the basal third of the lateral plates hyaline (Fig. 20 vs. Fig. 49).

**Description:**

*Male.*

*Measurements:* Body length: 3.193 mm; wing: 2.741 mm; *r-m* crossvein ratio: 0.442.

*Head:* Ground colour brown. All head setae and setulae infuscated. Occiput silver-grey dusted posteriorly and laterally with narrow median part glossy. Ocellar triangle silver-grey dusted. Frontal vitta yellow. Frontal plate silver-grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, at narrowest wider than arista base. Scape and pedicel darkly ferruginous, postpedicel infuscated, ferruginous basally. Arista brown. Palpus entirely yellow; apex truncated and dilated, with hyaline hairs.

*Thorax:* Ground colour dark. Postpronotal lobe gold dusted, with three setae and nine setulae. Pleura silver-grey. Proepisternum inconspicuous and gold dusted. Scutum grey dusted, with three very faint, barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and four discal setulae, one pair of subbasal setae and one stronger pair of apical setae (almost equal in length).

*Legs:* All legs yellow except for forelegs with apical third of femur with dark mark, apical half to third of tibia and tarsi infuscated.

*Leg chaetotaxy:* Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline. Veins light brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 immaculate; tergite 3 with small dark-brown marks taking up less than a third of dorsal surface; tergite 4 with two small round markings, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence knoblike, apically appearing bilobate in anterior view, appearing almost tridentate in apical view. Trifoliate process stem 2.5× the length of the apical process; stem and hood hyaline, lateral plates and median piece infuscated; median piece with gradual dilation towards apex in both profile and posterior view (club-shaped), narrower than lateral plates, with four conspicuous setulae at apex; lateral plates with inner lobes. Surstylus without dark markings.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *Eastern Cape:* Grahamstown, Albany Museum grounds, 33°18.822'S 26°31.315'E, 15–23.x.2007, A.H. Kirk-Spriggs, Malaise trap (AMGS).

Paratypes: *Eastern Cape:* 2♂ same data as holotype (AMGS); 1♂ Baviaanskloof Nature Reserve, Bergplaas trail hut, 33°38.075'S 24°29.306'E, grassy fynbos, 28.i.2009, A.H. Kirk-Spriggs & S. Otto, Sweeping (BMSA(D) 04574); *KwaZulu-Natal:* 1♂ Ndumo Game Reserve, Shokwe area, 26°52.125'S 32°13.731'E, Ficus forest, 30.xi–4.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 15751); *Western Cape:* 3♂ De Hoop Nature Reserve, 34°27'S 20°25'E, 0–200 m, 10–13.x.1994, R. Danielsson (MZLU); 2♂ Malgas, 34°20'S 20°30'E, 40 m, 11–13.x.1994, R. Danielsson (MZLU). *North West Province:* 1♂ S.A. Lombard Nature Reserve, 27°36'05"S 25°28'51"E, 1230 m, Rhus, *Acacia* savanna, 11.iii.2003, J.G.H. Londt, Malaise and light traps (NMSA; Type no. 2504).

**Distribution:** South Africa.



*Atherigona falcata* (Thomson, 1869)

Fig. 23

*Coenosia falcata* Thomson, 1869: 560.*Atherigona nudiseta* Malloch, 1923: 186.*Atherigona falcata*: Deeming 1975: 2, figs 1–2.

Diagnosis (Based on Pont 1986): This species can be distinguished from others with yellow frontal vitta and palpi by the entirely yellow fore femur and specialised chaetotaxy (short erect anterodorsal hairs on tarsomeres 2 or 3–5 of the fore leg). The species further has a very distinct trifoliate process (Fig. 23a).

Type material: Holotype material housed in CNCI, but not seen.

Other material examined: NAMIBIA: 1♂ Caprivi Park, Kwando Meander, Kwando River, 17°50'49"S 23°18'53"E, Swept from floating vegetation, mainly grasses, 5.xii.1999, D.J. Mann, Sweep net (NMSA).

Distribution: Namibia, South Africa.

*Atherigona falkei* Deeming, 1981

Fig. 59

*Atherigona falkei* Deeming, 1981: 106, figs 21–23.

Diagnosis (based on original description): Similar to *A. nigeriensis* Deeming, 1971 in having the frontal vitta entirely infuscated, but differs in having the palpi wholly yellow. Median piece of trifoliate process is also narrow throughout its length in profile and the lateral plates have a toothlike inner lobe.

Type material: Holotype material housed in CNCI, but not seen.

Other material examined: SOUTH AFRICA: *Mpumalanga*: 1♂ White River, 5.iii.1953 (NHMUK).

Distribution: South Africa, Uganda.

*Atherigona flavifinis* sp. n.

Fig. 16

Etymology: From the Latin *flavus* (yellow) and *finis* (boundary), for the scutellum being yellow on its apical edge.

Diagnosis: This species is very similar to *A. binubila* and *A. albicornis* sp. n. in general appearance, having similar smoky patches on wings (also tergite 1+2 appearing very similar in *A. albicornis* sp. n.). It differs from them, however, in the shape of the trifoliate process and hypopygial prominence (Fig. 16 vs. Figs 26 and 31).

Description:

*Male*.

*Measurements*: Body length: 4.028 mm; wing: 3.16 mm; *r-m* crossvein ratio: 0.369.

*Head*: Ground colour dark. All head setae and setulae infuscated. Occiput silver-grey dusted posteriorly and laterally with narrow median part glossy. Ocellar triangle silver-grey dusted. Frontal vitta infuscated. Frontal plate silver-grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, narrower than arista base. Scape and pedicel darkly ferruginous, postpedicel and arista infuscated. Palpus entirely infuscated; apex truncated and dilated, palpus appearing almost straplike.

*Thorax*: Ground colour dark. Postpronotal lobe gold dusted, with three setae and 10 setulae. Pleura golden dusted. Proepisternum inconspicuous. Scutum grey dusted, with three weak and barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and 8 discal setulae, one pair of subbasal setae, being 0.8× the one pair of apical setae.

*Legs*: All legs yellow except for forelegs with femur having dark apical marks laterally, tibia with apical third infuscated as well as tarsi.

*Leg chaetotaxy*: Fore tarsi without any specialised chaetotaxy.

*Wings*: Hyaline, except for prominent dark-brown smoky suffusion in area surrounding *Sc-R<sub>1</sub>*, and around humeral crossvein Veins dark-brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen*: All tergites yellow, with tergite 3 and 4 grey dusted. Tergite 1+2 with dark wide marking taking up most of dorsal surface; tergite 3 with two medium sized dark-brown marks taking up just over two thirds of dorsal surface; tergite 4 with two small round markings, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence knoblike, widening apically. Trifoliate process stem 3× the length of the apical process; entire process infuscated, the stem and the area surrounding hood somewhat slightly lighter; median piece linear in posterior view except for some apical dilation, linear in profile; much narrower than lateral plates; lateral plates without inner lobe; hood somewhat expanded, forming platform structure. Surstylus with dark markings dorsally.

*Female*. Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Ndumo Game Reserve, Main camp, 26°54.652'S 32°19.719'E, Broad-leaved deciduous woodland, 27–30.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 14515).

Paratypes: *KwaZulu-Natal*: 3♂ same data as holotype (BMSA(D) 14290, 14297, 14476); 1♂ Ndumo Game Reserve, main road, 26°52.125'S 32°13.731'E, Ficus forest, 30.xi–4.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 15818); 2♂ Ndumo Game Reserve, main road, 26°54.288'S 32°17.974'E, Sand and broad-leaved deciduous forest, 4–8.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 17535, 17938); 1♂ Ndumo Game Reserve, Shokwe area, 26°52.125'S 32°13.731'E, Ficus forest, 30.xi–4.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 15745).

Other material examined: *Mpumalanga*: 1♂ White River, 5.iii.1953 (NHMUK); *KwaZulu-Natal*: 1♂ Rietspruit farm, 13 km NE Pietermaritzburg, 29°23'27"S 30°29'04"E, Wetland & dam, 13.iii.1990, A.E. Whittington (NMSA); 1♂ Weenen Nature Reserve, 35 km NE of Estcourt, 28°52'S 30°00'E, 2–9.xii.1991, B. Perrin & K. Goddard, malaise trap (NMSA); *Eastern Cape*: 1♂ Grahamstown, Albany Museum grounds, 33°18.822'S 26°31.315'E, 15–23.x.2007, A.H. Kirk-Spriggs, Malaise trap (AMGS).

Distribution: South Africa.

### *Atherigona flaviheteropalpa* sp. n.

Fig. 39

*Etymology*: From the Latin *flavus* (yellow), *heteros* (different) and *palpus* (feeler), pertaining to the unique colour and shape combination of the palpi.

*Diagnosis*: This species and *A. heteropalpa* sp. n. are very similar to each other due to the unique and diagnostic palpal shape (straplike compared to the usual dilated and truncated appearance of the subgenus' palpi). *A. flaviheteropalpa*, however, differs from *A. heteropalpa* in having yellow palpi compared to the other's infuscated palpi.

The trifoliate process and hypopygial prominence of each species is also markedly different from one another (Fig. 17 vs. Fig. 39).

Description:

*Male.*

*Measurements:* Body length: 3.596 mm; wing: 3.152 mm; *r-m* crossvein ratio: 0.398.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted with narrow median part glossy, laterally silver-grey dusted. Ocellar triangle grey dusted. Frontal vitta yellow. Frontal plate entirely silver-grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, wider at narrowest than arista base. Scape, pedicel and arista ferruginous, postpedicel infuscated except for narrow basal area. Palpus yellow; straplike (not truncated and dilated as in most species), with hyaline hairs.

*Thorax:* Ground colour dark. Postpronotal lobe golden dusted, with three setae and 12 setulae. Pleura grey dusted. Proepisternum inconspicuous and gold dusted. Scutum grey dusted, with three very faint, barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and six discal setulae, one pair of subbasal setae and one stronger pair of apical setae (subbasal 0.75× apical).

*Legs:* All legs yellow except for apical halves of fore femur and tibia appearing slightly infuscated

*Leg chaetotaxy:* Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline. Veins light brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 with brown marking; tergites 3 and 4 with dorsal surfaces entirely covered by dark markings; tergite 5 with two small spots. Hypopygial prominence weakly bilobate. Trifoliate process stem 1.5× the length of the apical process; stem and hood lighter than rest of process (with the exception of the apical third of stem) which is infuscated, lateral plates and median piece infuscated; median piece apically very strongly dilated, bifurcate, appearing curved in profile; lateral plates with apparent double inner lobes; base of process wider than median piece in profile. Surstylus without dark markings.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *Western Cape:* 9 km ESE George, Kaaimansrivier, 33°59'S 22°33'E, 13.x.1994, R. Danielsson (MZLU).

Distribution: South Africa.

### *Atherigona gilvifolia* van Emden, 1940

Fig. 65

*Atherigona gilvifolia* van Emden, 1940: 125, figs 28, 52; Deeming 1971: 168, figs 96–100; Deeming 1979: 44; Deeming 1987: 19.

Diagnosis: This species can be distinguished from others with yellow palpi and infuscated frontal vitta by its very striking trifoliate process which is hyaline except for the extreme apex of the median piece.

Type material examined: Holotype ♂: NIGERIA: Ibadan, 19.x.1935 (NHMUK).

Other material examined: KENYA: 1♂ Rift Valley, Ol Arabe Gorge, 11.xi.1988, R.K. Butlin (NMSA) (Previously NMW.Z.1988–167); 1♂ Nairobi: Karura State Forest, 5 km NE of Nairobi, 01°15'S 36°53'E, 1700 m, 19.xi.1992, J.G.H. Londt & A.E. Whittington, Indigenous forest/edges (NMSA). SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Durban Treasure Beach, 29°56'26"S 30°59'48"E, Grassland & scrub, 04.vii.1990, Natal Museum Ent. Dept. (NMSA); 1♂ Ndumo Game Reserve, main road, 26°54.288'S 32°17.974'E, Sand and broad-leaved deciduous forest, 4–8.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 18219); 1♂ Pietermaritzburg, Blackridge area, Grass on road margin, 20.iv.1982, D.A. Barraclough (NMSA); 1♂ Port Edward, 31°03'S 30°13'E, 9.iv.1997, K.R. Cradock, Malaise trap (NMSA). SWAZILAND: 1♂ 13 km N of Ngogolo, Panata Ranch, 26°19'S 31°38'E, 300 m, Bushveld, 22–24.iv.1991, J.G.H. Londt & L. Schoeman (NMSA).

Distribution: Democratic Republic of the Congo, Kenya, Mauritius, Nigeria, South Africa (new), Swaziland (new), Tanzania, Uganda.

*Atherigona griseiventris* van Emden, 1940

Fig. 13

*Atherigona griseiventris* van Emden, 1940: 140, figs 12, 38; Deeming 1979: 48.

Diagnosis: This species can be distinguished from others with similar infuscated palpi and frontal vitta by the shape of the median piece of the trifoliate process which is greatly dilated in profile up to just before the apex, and thin and linear in posterior view except for the apex, which appears almost round.

Type material examined: Holotype ♂ KENYA: Aberdere Range, x.1934, B.M.E. Afr. Exp. B.M. 1935-203, Mt. Kinangop, 8000ft [2438 m], F.W. Edwards. Det. Emden 1939 (NHMUK).

Distribution: Kenya, Nigeria, South Africa, Uganda.

*Atherigona heteropalpata* sp. n.

Fig. 17

Etymology: From the Latin *heteros* (different) and *palpus* (feeler), pertaining to the unique shape of the palpus, which is different from all other known species in the subgenus, except for *A. flaviheteropalpata* sp. n. with similar but yellow palpi.

Diagnosis: This species and *A. flaviheteropalpata* sp. n. are very similar to each other due to the unique and diagnostic palpal shape (straplike compared to the usual dilated and truncated appearance of the subgenus' palpi). *A. heteropalpata*, however, differs from *A. flaviheteropalpata* in having infuscated palpi compared to the other's yellow palpi. The trifoliate process and hypopygial prominence of each species are also markedly different from one another (Fig. 39 vs. Fig. 17).

Description:

*Male*.

*Measurements*: Body length: 4.526 mm; wing: 3.92 mm; *r-m* crossvein ratio: 0.400.

*Head*: Ground colour dark. All head setae and setulae infuscated. Occiput silver-grey dusted throughout with narrow median part glossy, laterally silver-grey dusted. Ocellar triangle silver-grey dusted. Frontal vitta infuscated. Frontal plate silver-grey dusted throughout with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, at narrowest just as wide as arista base. Scape and pedicel infuscated with ferruginous margins, postpedicel and arista infuscated. Palpus brown, straplike in appearance, with hyaline setulae at apex.

*Thorax*: Ground colour dark. Postpronotal lobe gold dusted, with three setae and 11 setulae. Pleura entirely grey dusted; Proepisternum inconspicuous and gold dusted. Scutum grey dusted throughout, with three faint, barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and 7 discal setulae, one pair of subbasal setae and one pair of apical setae (subbasal pair equal to apical pair).

*Legs*: All legs yellow, except for the apical halves of fore femur and fore tibia, and the entire fore tarsi which are infuscated.

*Leg chaetotaxy*: Fore tarsi without any specialised chaetotaxy.

*Wings*: Hyaline. Veins brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen*: All tergites yellow; tergite 1+2 immaculate; tergite 3 two small round markings taking up a third of dorsal surface; tergite 4 with small round markings, taking up a third of dorsal surface. tergite 5 immaculate. Hypopygial prominence knoblike, with a pair of anteriorly projecting tubercles, and anteriorly with two slight lobe-like dilations. Trifoliate process stem 1.6× the length of the apical process; trifoliate process entirely hyaline, except for the lateral margins of the lateral plates which are infuscated; median piece filiform except for apical dilation, with four setulae, the two centre setulae projecting and the two outer setulae strongly curved and at least 2× as long as dilation is high, median piece appearing filiform in profile; lateral plates appearing almost angular in posterior view, rounded in profile, not smooth but with a rough textured surface, also wider than median piece in profile, without inner lobes. Surstylus without infuscation.

*Female*. Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Royal Natal National Park, Thendele area, 28°40'46"S 28°55'13"E, Sourveld, 16–18.iii.1990, A.E. Whittington (NMSA; Type no. 2505).

Paratypes: *KwaZulu-Natal*: 1♂ Cathedral Peak area, 4–11.iv.1977, J.G.H. Londt, ex. Malaise (NMSA); 1♂ Cathedral Peak area, Forest Reserve, 1800 m, 4–11.iv.1977, J.G.H. Londt, ex. Malaise (NMSA); 1♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA); 1♂ Royal Natal National Park, Mahai Camp, 28°41'S 28°57'E, 1440 m, Grassland, 2–4.iv.1993, J.G.H. Londt (NMSA); 1♂ Royal Natal National Park, Mahai campsite area, 28°41.386'S 28°56.288'E, 1440 m, Malaise trap (1) straddling Mahai river, 17–18.ii.2010, J.G.H. Londt, Malaise trap (NMSA); 1♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosedes* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19586); 2♂ Royal Natal National Park, Tiger Falls area, 28°41.341'S 28°56.047'E, *Protea caffra* woodland, 17–18.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19803, 19804).

Distribution: South Africa.

Remarks: The males of this species and *A. flaviheteropalpata* sp. n. are currently not matching the diagnosis of the subgenus *Atherigona* s. str. due to the straplike, thin appearance of their palpi. They do, however, both have a trifoliate process and hypopygial prominence. This would mean that the diagnosis of the subgenus would need to be updated, as the thin appearance of the palpi is not diagnostic for just the males of *Acritochaeta*.

*Atherigona humeralis* (Wiedemann, 1830)

Fig. 21

*Coenosia humeralis* Wiedemann, 1830: 441.

*Atherigona humeralis*: Deeming 1971: 157, figs 49–53.

*Atherigona ferruginea* van Emden, 1940: 116, fig. 14; Deeming 1971: 153, fig. 33; Deeming 1979: 36; Deeming 1987: 18.

Diagnosis: This species is very similar to *A. bedfordi* but differs from it in having an infuscated postpedicel and having the fore legs infuscated to some degree. The trifoliate process has the median piece club-shaped apically, but not greatly expanded laterally. The hypopygial prominence is truncated with anteriorly projecting tubercles.

Type material examined: Paralectotype ♂ ‘Nubien’ (ZMHB).

Type not examined: Holotype female housed in SMF (Senckenberg Forschungsinstitut und Naturmuseum, Frankfurt).

Other material examined: ETHIOPIA: 1♂ Alemaya, vii–viii.1986, T. Mesfin (NMSA) (Previously NMW.Z.1986–118). SOUTH AFRICA: *Eastern Cape*: 1♂ Grahamstown, Albany Museum grounds, 33°18.822'S 26°31.315'E, 15–23.x.2007, A.H. Kirk-Spriggs, Malaise trap (AMGS); 1♂ Jeffrey's Bay, Humansdorp area, 3.xii.1967, B.R. Stuckenberg & P. Stuckenberg (NMSA); 2♂ Ottersford Forestry Reserve, Hankey area, 1–10.xii.1967, B.R. Stuckenberg & P. Stuckenberg (NMSA); 1♂ Port St. Johns, 20–25.xi.1961, B.R. Stuckenberg & P. Stuckenberg (NMSA); 1♂ Storms River Pass, Tsitsikama area, 8.xii.1967, B.R. Stuckenberg & P. Stuckenberg (NMSA); *Free State*: 1♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05540); *Limpopo*: 1♂ Louis Trichardt [Makhado], i–ii.1928, R.F. Lawrence (SAM-DIP A013859); *Western Cape*: 1♂ Wilderness National Park, 17 km SE George, 33°59'S 22°39'E, 14.x.1994, R. Danielsson (MZLU).

Distribution: Cape Verde, Chad, Egypt, Ethiopia (new), Madagascar, Nigeria, Rwanda, South Africa (new), Sudan, Uganda.

### *Atherigona hyalinipennis* van Emden, 1959

Fig. 49

*Atherigona hyalinipennis*: van Emden 1958: 7, *nomen nudum*.

*Atherigona hyalinipennis* van Emden, 1959: 193; Deeming 1971: 160, figs 67–69.

Diagnosis: This species can be distinguished from others with a yellow frontal vitta by its fore legs having a slight infuscation on the femur, and the tibia being infuscated on its apical half. It is very similar to *A. bedfordi* and *A. humeralis*, but differs in the structure of the trifoliate process and hypopygial prominence (Fig. 48 vs. Figs 21 & 42).

Type material examined: Holotype ♂: ERITREA: on road below Arbaroba, 6800ft [2073 m], 12.x.1952 (NHMUK).

Other material examined: BOTSWANA: 1♂ Tlokweneng, Sorghum field, 6–13.iii.1990, J.M. Mashonja, Malaise trap (NMSA). NAMIBIA: 1♂ Kaoko Otawi, iii.1995, SAMC Expedition (SAM-DIP A013853). SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA).

Distribution: Botswana, Burkina Faso, Cape Verde, Chad, Eritrea, Ethiopia, The Gambia, Kenya, Namibia, Nigeria, Senegal, South Africa (new), Sudan, Uganda, Zimbabwe.

### *Atherigona kirkspriggsi* sp. n.

Fig. 33

Etymology: Named in honour of the collector of the holotype and the majority of the paratypes, Dr Ashley Kirk-Spriggs.

Diagnosis: This species keys close to *A. lineata torrida* Deeming, 1971 when Deeming (1970) and Dike (1989a) are used, but differs from it in having the hypopygial



prominence tridentate and not bifurcate. Also, the mid and hind leg tarsi are infuscated compared to that of *A. lineata torrida* which appears brown. *A. kirkspriggsi* also has a submedial posteroventral seta on the front femur. *A. kirkspriggsi* is also similar to *A. occidentalis* Deeming, 1971 but differs from it significantly with regards to the overall structure of the trifoliate process and hypopygial prominence (Fig. 33 vs. Fig. 32).

Description:

*Male.*

*Measurements:* Body length: 4.06 mm; wing: 3.255 mm; *r-m* crossvein ratio: 0.380.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted posteriorly and laterally with narrow median part glossy. Ocellar triangle grey dusted, sub-shining. Frontal vitta wholly infuscated, appearing velvety. Frontal plate silver-grey dusted, sub-shining around bases of the posterior pair of proclinate frontal and two pairs of orbital setae; three pairs of frontal setae and two weak pairs of frontal setulae half the length of setae; Parafacial silver-grey dusted, slightly wider than arista base; jowls appearing gold dusted. Scape, pedicel and postpedicel infuscated. Arista dark-brown. Palpus infuscated; slight apical dilation with very subtle truncation, with hyaline setulae.

*Thorax:* Ground colour dark. Postpronotal lobe gold dusted, with three setae and 12 setulae. Pleura golden-grey dusted. Proepisternum somewhat protruding compared to other species. Scutum grey dusted, with three weak and barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and eight discal setulae; one pair of subbasal setae and one pair of apical setae, equal in length.

*Legs:* Forelegs infuscated except for basal half and extreme apex of femur and base of tibia which are yellow. Mid and hind legs yellow except for infuscated tarsi.

*Leg chaetotaxy:* Fore femur with one submedial posteroventral seta; fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline. Veins dark-brown. Halteres wholly yellow. Calypters white.

*Abdomen:* All tergites yellow, grey dusted on dorsolateral surface of tergite 3; tergite 1+2 with two large dark-brown trapezoidal markings with a median longitudinal vitta running between them down to tergite 4 (large markings absent in some specimens), only interrupted at the start of each new tergite; tergite 3 with two large dark-brown almost teardrop shaped marks taking up entire length of dorsum; tergite 4 with two small round markings, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence tridentate, with each lobe equal in size, anteriorly with faint setulae. Trifoliate process stem 3× the length of the apical process, entire process including stem infuscated with the exception of a hyaline area which consist of the hood and its surroundings; median piece apically dilated in posterior view (wider than lateral plates) as well as in profile, although more gradual and less pronounced; lateral plates only somewhat wider in profile than median piece, posteriorly in the shape of a boomerang, inner lobes absent; hood reduced in size. Surstylus not infuscated.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *Free State*: Geluksdal farm, 27°54'7.05"S 29°23'31.9"E, sparse *Leucosedes* [*Leucosidea*] dominated scrub, 9–10.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 13290).

Paratypes: *Eastern Cape*: 1♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); 1♂ Grahamstown, Albany Museum grounds, 33°18.822'S 26°31.315'E, 15–23.x.2007, A.H. Kirk-Spriggs, Malaise trap (AMGS); *Free State*: 1♂ Geluksdal farm, 27°54'7.05"S 29°23'31.9"E, sparse *Leucosedes* [*Leucosidea*] dominated scrub, 9–10. xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 13287); 1♂ Harrismith, Mooihoekkop, 28°18'50.0"S 29°10'51.1"E, 1800 m, *Leucosedes* [*Leucosidea*] dominated scrub, 14–16.ix.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 09851); 5♂ Harrismith, Scotland farm, 27°58'59.5"S 29°37'09.8"E, dense *Leucosedes* [*Leucosidea*] dominated scrub, 10–12.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 12774, 12765, 12775, 12782, 12772); *KwaZulu-Natal*: 1♂ Newcastle, 27°44'21"S 29°52'34"E, xii.1952 (NHMUK); 1♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosedes* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19760); 1♂ *North West Province*: Brits, 25°38'5"S 27°46'48"E, 25.x.1952, Paterson (NHMUK).

Distribution: South Africa.

### *Atherigona laevigata* (Loew, 1852)

Fig. 7

*Coenosia laevigata* Loew, 1852: 660 [1862: 28].

*Atherigona laevigata*: van Emden 1940: 113, figs 6, 56; Deeming 1971: 148, figs 13–18.

*Atherigona scutellaris* Stebnl, in Becker 1903: 110.

*Atherigona minuta* Schnabl & Dziedzicki, 1911: 183.

**Diagnosis:** This species can easily be recognised by its glossy frontal plate and half-yellow, half-infuscated frontal vitta in combination with its knoblike hypopygial prominence.

Type material examined: Syntypes: MOZAMBIQUE: 1♂ 2♀ 'Ost Afrika, Inhambana, Peters S' (ZMHB).

Other material examined: KENYA: *Baringo*: 9♂ Lake Bogoria Nature Reserve, Fig Tree camp site, 00°11'N 36°08'E, 1100 m, 21.xi.1992, J.G.H. Londt & A.E. Whittington, South end of reserve (NMSA); *Nairobi*: 3♂ Karura State Forest, 5 km NE of Nairobi, 01°15'S 36°53'E, 1700 m, 19.xi.1992, J.G.H. Londt & A.E. Whittington, Indigenous forest/edges (NMSA). 1♂ N. NIGERIA [NIGERIA]: Zaria, Samaru, Cynodon dacylon collected 22.xi.1972, 4.xii.1972, J.C. Deeming, ex. Shoot (NMSA). NAMIBIA: 1♂ Swakopmund, 26–30.i.1972, southern African Expedition, Swept vegetation around sewage farm settling tanks (NHMUK); 2♂ Warmbad, [-28.448034 18.734433], Koakoveld, ii.1925, SAMC Expedition (SAM-DIP A013851); 5♂ Warmbad, [-28.448034 18.734433], Koakoveld, ii.1925, SAMC Expedition (SAM-DIP A013850); 4♂ Zesfontein, ii.1925, SAMC Expedition (SAM-DIP A013846). SAUDI ARABIA: 1♀ Abha, Madenat Ameer Sultan, 25.ii–25.v.2002, H.A. Dawah (NMSA). SOUTH AFRICA: *Eastern Cape*: 3♂ 3 km E Grahamstown, Belmont Valley, 2&5.i.1986, J.G.H. Londt & B. Londt, Malaise trap (NMSA); 1♂ 35 km SE of Maclear, 31°12'S 28°36'E, 1400 m, Grass slopes & ravine, 3.ii.1992, Natal Museum Expedition (NMSA); 1♂ 8 km NW Addo, 3–4.xi.1978, J.G.H. Londt & R.M. Miller (NMSA); 6♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); 2♂ Grahamstown, Albany Museum grounds, 33°18.822'S 26°31.315'E, 15–23.x.2007, A.H. Kirk-Spriggs, Malaise trap (AMGS); 1♂ Hluleka Nature Reserve, 21–25.vii.1981, R.F. Fregona (NMSA); 3♂ Hogsback, 32°35.7'S 26°56.172'E, 850 m, 28.xii.2004, M.B. Mostovski (NMSA); 1♂ Hogsback area, Forest margins, 18–19.i.1984, D. Barraclough & C. Barraclough (NMSA); 3♂ Pirie Dam, ii. 1944, J. Omer Cooper (NHMUK); 1♂ Port St. Johns, 10–22.ii.1955, A.J.T. Janse (NMSA); 1♂ Wilderness National Park, 33°59'S 22°66'E, c100 m, Forest margins, 7.ix.1993, D. Barraclough & C. Barraclough (NMSA); 1♂ Xuka River, 10 km E Engcobo, river bank, 26.x.1978, J.G.H. Londt & R.M. Miller (NMSA); *Free State*: 3♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05524, 05529, 05535); 2♂ Brandfort, Soetdoring Nature Reserve, Kruger's Drift, 28°51.303'S 26°02.302'E, *Acacia* Savanna, 5–6.iv.2009, A.H. & M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 05469, 05472); *Gauteng*: Pretoria, Emerged from jar with army worm, Parasite?, 22.iv.1919 (SANC DIPT01491); *KwaZulu-Natal*: 1♂ 15.5 km N. Vryheid, 29.xi.1976, R.M. Miller, Old quarry (NMSA); 5♂ 17 km NE Empangeni, Nseleni River, 28°42'S 32°01'E, 24.x.1994, R. Danielsson (MZLU); 1♂ Botanical Gardens Durban, 16.x.1920, C.P. van der Merwe (SAM-DIP A013849); 1♂ Croc Valley Nature Reserve, nr. Sheffield Beach, 29°28'37"S 31°15'04"E, 60 m, In patch of swamp forest, 12.vi.2001, J.G.H. Londt (NMSA); 1♂ Dukuduku between St. Lucia & Matubatuba, Zululand, 7–8. iv.1960, B.R. Stuckenberg & P. Stuckenberg (NMSA); 1♂ Durban, 6.ix.1960 (NHMUK); 1♂ Giant's Castle [Nature] Reserve, Drakensberg Mts., 18.x.1971, B.R. Stuckenberg & M.E. Irwin (NMSA); 3♂ Ladysmith, xii.1952 (NHMUK); 1♂ Lynnfield Park, 13 km SE Pietermaritzburg, 29°41'S 30°29'E, *Acacia* thornveld

area, 31.iii.1989, A.E. Whittington (NMSA); 1♂ Ndumo Game Reserve, pan, 26°54.288'S 32°17.974'E, Grassy flood plain, 9–10.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19476); 1♂ Ndumo Game Reserve, Shokwe area, 26°52.125'S 32°13.731'E, Ficus forest, 30.xi–4.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 15826); 3♂ Ndumu [Ndumo] Game Reserve, Camp & Riverine bush, 4–9.x.1982, J.G.H. Londt (NMSA); 1♂ New Hanover, 29.xi.1914, C.B. Hardenberg (SANC); 2♂ Port Edward, 31°03'S 30°13'E, 8.vi.1997, K.R. Cradock, Malaise trap (NMSA); 16♂ Richards Bay, 28°46'S 32°04'E, 24.x.1994, R. Danielsson (MZLU); 1♂ Royal Natal National Park, 7–11.iv.1951, Brinck & Rudebeck, insect trap (MZLU); 1♂ St. Martin's-on-the-Shore, 5.vi.1976, R.M. Miller (NMSA); 1♂ Ukulinga Research Farm, University of KwaZulu-Natal, 29°40'S 30°24'E, 12.iii.2009, R.M. Miller (NMSA); *Limpopo*: 2♂ Louis Trichardt [Makhado], i–ii.1928, R.F. Lawrence (SAM-DIP A013858); 1♂ Plat River, Waterberg distr., C.J. Swierstra (NMSA); 1♂ *Mpumalanga*: 7 km N Hazyview, Sabie River, 6.xii.1976, R.M. Miller (NMSA); *Western Cape*: 1♂ 3 km E Kaap Agulhas, 34°49'S 20°01'E, 12.x.1994, R. Danielsson (MZLU); 1♂ De Hoop Nature Reserve, 34°27'S 20°25'E, 0–200 m, 10–13.x.1994, R. Danielsson (MZLU); 1♂ Knysna C.C., x.1916, L. Peringuey (SAM-DIP A013857); 4♂ Malgas, 34°20'S 20°30'E, 40 m, 11–13.x.1994, R. Danielsson (MZLU). ZIMBABWE: 2♂ N. Vumba, S. Rhodesia 22.vi.1964, D. Cookson (NMSA).

Distribution: Angola, Comores, Egypt, Ethiopia, Kenya, Madagascar, Mozambique, Nigeria, Rwanda, Saudi Arabia, Seychelles, South Africa, Tanzania, Uganda, Yemen, Zambia, Zimbabwe (new).

### *Atherigona latibasilaris* sp. n.

Fig. 40

Etymology: From the Latin *latus* (broad or wide) and *basilaris* (at the base), describing the basal area of the median piece where it meets the hood.

Diagnosis: This species is most similar to *A. londti* sp. n. in terms of coloration, but differs greatly from it and others species due to the very distinct shape of the trifoliate process that has the basal area where the median piece and hood meet very wide when viewed in profile.

Description:

*Male*.

*Measurements*: Body length: 3.503 mm; wing: 2.688 mm; *r-m* crossvein ratio: 0.400.

*Head*: Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted with narrow median part glossy, laterally grey dusted. Ocellar triangle grey dusted. Frontal vitta yellow, darker at base and area surrounding ocellar triangle. Frontal plate grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, narrower than arista base at narrowest. Scape pedicel and arista ferruginous, postpedicel infuscated except for ferruginous basal area. Palpus yellow; truncated and dilated with hyaline hairs.

*Thorax*: Ground colour dark. Postpronotal lobe golden dusted, with two setae and ten setulae. Pleura grey dusted. Proepisternum inconspicuous and gold dusted. Scutum grey dusted, with three weak barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted except for yellow apex; one pair of basal setae, one pair of discal setae and nine discal setulae, one pair of subbasal setae and one pair of apical setae (equal in length).

*Legs*: All legs yellow except for dark marking on apex of fore femur, with apical half of fore tibia and fore tarsi infuscated.

*Leg chaetotaxy*: Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline, except for slight brown smoky suffusion at areas surrounding  $Sc-R_1$  and the humeral crossvein. Veins light brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 immaculate; tergite 3 with a pair of small teardrop shaped dark markings, taking up a third of dorsal surface; tergite 4 with two small dark spots, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence with deep rounded bifurcation. Trifoliate process stem  $3\times$  the length of the apical process; trifoliate process hyaline except for apical half of median piece and lateral plates; base of median piece and connecting hood area conspicuously expanded in profile; median piece club-shaped with gradual apical dilation in posterior view, c-shaped in profile; lateral plates without inner lobes, appearing linear in profile; surstylus without dark markings.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Umfolozi Game Reserve, Masinda camp, 28°17'S 31°57'E, 200 m, 25–28.xi.1993, J.G.H. Londt, Malaise (NMSA; Type no. 2506).

Distribution: South Africa.

### *Atherigona libertensis* sp. n.

Fig. 29

*Etymology:* From the Latin *libertes* (freedom), named for the province in which the type locality is situated, i.e. the Free State.

*Diagnosis:* This species is similar to *A. angustiloba* in terms of general appearance and shape of the hypopygial prominence. *A. libertensis* differs, however, with regards to the shape and colour of the trifoliate process, which is entirely hyaline compared to the entirely infuscated process of *A. angustiloba* (Fig. 29 vs. Fig. 30). The trifoliate process is visually similar to those of *A. naqvii* Steyskal, 1966 and *A. cinarina* due to the coloration and the presence of a pair of long hyaline setulae at the apex of the median piece, but differs overall structurally, not having any emargination at the apex as with the other two species (Fig. 29 vs. Figs 36 & 37).

*Description:*

*Male.*

*Measurements:* Body length: 3.84 mm; wing: 3.12 mm; *r-m* crossvein ratio: 0.405.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted posteriorly with narrow median part glossy, laterally also dusted. Ocellar triangle grey dusted, sub-shining. Frontal vitta infuscated, apical  $\frac{1}{3}$  appearing ferruginous. Frontal plate silver-grey dusted on apical two thirds, basally grey dusted, with three pairs of proclinate frontal and two pairs of orbital setae, bases of setae appearing slightly glossy. Parafacial silver-grey dusted, only somewhat wider than arista base. Scape and pedicel infuscated with ferruginous apex. Postpedicel infuscated. Arista infuscated. Palpus yellow except for infuscated basal third; apically dilated and truncated, with hyaline setulae.

*Thorax:* Ground colour dark. Postpronotal lobe grey dusted except for ventrolateral margins which are golden dusted, lobe with three setae and eight setulae. Pleura grey

dusted, except for area where katepisternum, anepisternum and anepimeron converge. Proepisternum not conspicuous. Scutum grey dusted, with three faint and barely visible 2-4 dorsocentral vittae, not extending to the scutellum; Scutellum grey dusted; one pair of basal setae, one pair of discal setae and six discal setulae, one pair of subbasal setae and one pair of apical setae, comparison between subbasal and apical pair not possible due to damage.

*Legs*: All legs yellow with the exception of the fore femur having a dark mark on apical posterior surface, and apical third of fore tibia and entire fore tarsi which is infuscate.

*Leg chaetotaxy*: apical three fore tarsal segments with long dorsal setulae, at least as long as segments are wide.

*Wings*: Hyaline, except for slight brown smoky suffusion at apex of  $Sc-R_1$ . Veins brown. Halteres with white knob and yellow stalk. Calypters white.

*Abdomen*: All tergites yellow; tergite 1+2 with faint median vitta, not reaching the apical margins; tergite 3 with two large dark-brown oblong marks taking up just over two thirds of surface, vitta present and same length as large marks; tergite 4 with two small round markings, taking up a third of dorsal surface, with dark vitta that spans the entire length of segment; tergite 5 immaculate. Hypopygial prominence knob-shaped with two anteriorly projecting tubercles. Trifoliate process stem 2.9× the length of the apical process; trifoliate process and all setulae hyaline except for the edges of lateral plates and lateral edges of hood which are infuscated; median piece with slight club-like appearance, same shape in profile, apically with two long hyaline setulae (approximately the same length as entire median piece) and two smaller setulae at centre; lateral plates obovate in profile, no inner lobes present. Surstylus not infuscated.

*Female*. Unknown.

Holotype ♂: SOUTH AFRICA: *Free State*: Harrismith, Scotland farm, 27°58'59.5"S 29°37'09.8"E, dense *Leucosedea* [*Leucosidea*] dominated scrub, 10–12.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 12760).

Distribution: South Africa.

### *Atherigona lineata* ssp. *lineata* (Adams, 1905)

Fig. 51

*Coenosia lineata* Adams, 1905: 208.

*Atherigona lineata*: van Emden 1940: 103, figs 16, 36; Deeming 1971: 178, figs 139–148.

*Atherigona nigripalpis* Stein, 1913: 539.

*Diagnosis*: *A. lineata* and its subspecies can be distinguished from other species with infuscated frontal vitta by the combination of infuscated palpi and a bifurcated hypopygial prominence. *A. lineata lineata*, *A. lineata torrida* Deeming, 1971 and *A. lineata ugandae* van Emden, 1940 can be distinguished from one another on the following grounds: *A. lineata lineata* and *A. lineata torrida* have the fore femur infuscated on at least the apical third (compared to *L. lineata ugandae* that has it entirely yellow) and the two former species differ from one another in terms of the shape of their trifoliate processes' lateral lobes (Fig. 51a vs. Fig. 52a) and the depth of the hypopygial prominence bifurcation. *A. lineata lineata* and *A. lineata torrida* again differ from *A. lineata ugandae* in that *ugandae* has the hood area of the trifoliate process infuscate compared to hyaline for the other two subspecies, and also *ugandae* has a much deeper, wider and pronounced bifurcation.



Type material: Housed in the University of Kansas, Museum of Natural History (UKMNH), but not seen.

Other material examined: SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Ramsgate Butterfly Sanctuary, 30°53.3'S 30°20.4'E, 26–29.iv.2004, M.B. Mostovski, light trap (NMSA); *North West Province*: 1♂ S.A. Lombard Nature Reserve, 27°37'S 25°29'E, 1250 m, Sand, *Acacia* and thornveld, 12.iii.1991, J.G.H. Londt & A.E. Whittington (NMSA).

Distribution: Angola, Botswana, Burkina Faso, Cameroon, Chad, Democratic Republic of the Congo, The Gambia, Kenya, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Seychelles, South Africa, Tanzania, Uganda, Zimbabwe.

*Atherigona lineata* (Adams) ssp. *torrida* Deeming, 1971

Fig. 52

*Coenosia lineata* Adams, 1905: 208.

*Atherigona torrida* Deeming, 1971: 180, figs 153, 154; Deeming 1979: 47.

Diagnosis: See diagnosis for *Atherigona lineata lineata*.

Type material examined: Holotype ♂: N. NIGERIA [NIGERIA]: Zaria, Samaru, 30.viii.1969, m.v. [Mercury vapour] trap, J.C. Deeming (NHMUK).

Other material examined: KENYA: *W. Kakamega*: 1♂ Kakamega Forest Reserve, 00°22'N 34°53'E, 1620 m, Indigenous forest paths, 24.xi.1992, A.E. Whittington & J.G.H. Londt (NMSA). SOUTH AFRICA: *Eastern Cape*: 1♂ 3 km E Grahamstown, Belmont Valley, 2&5.i.1986, J.G.H. Londt & B. Londt, Malaise trap (NMSA); 2♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); 8♂ Pirie Dam, ii. 1944, J. Omer Cooper (NHMUK); 1♂ Tsitsikamma National Park, Storms River mouth, 34°01.239'S 23°53.744'E, 5.iv.2008, A.H. Kirk-Spriggs, Sweeping (BMSA(D) 03044); *Free State*: 1♂ Harrismith, Nesshurst farm, 28°26'53.3"S 29°09'14.2"E, *Leucosidea* [*Leucosidea*] -scrub & stream bed, 17–18.ix.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 11069); *Gauteng*: 1♂ Johannesburg, 26.xii.1946, F. Zumpt (NHMUK); *KwaZulu-Natal*: 8♂ Ashburton 15 km SE of Pietermaritzburg, Grassland, 19–25.ii.1977, J.G.H. Londt, Malaise trap (NMSA); 3♂ Cathedral Peak area, 4–11.iv.1977, J.G.H. Londt, ex. Malaise (NMSA); 2♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA); 1♂ Empangeni, 28°45'S 31°54'E, Garden of Reavell, 01–12.i.1993, P.E. Reavell, Malaise trap (NMSA); 1♂ Giant's Castle Game Reserve - Injasuti area, 5–11.xii.1983, J.G.H. Londt (NMSA); 2♂ Himeville, 3–5.iii.2004, M.B. Mostovski, light trap (NMSA); 1♂ Itala Game Reserve, 27°31'S 31°12'E, 780 m, Doornkraal Campsite, 4–6.xi.1997, J.G.H. Londt & A. Londt (NMSA); 2♂ Kamberg Nature Reserve, 1–6.x.1978, J.G.H. Londt, Malaise trap (NMSA); 1♂ Lynnfield Park [nr. Pietermaritzburg], 6–8.iv.1989, A.E. Whittington, Malaise trap (NMSA); 1♂ Ndumo Game Reserve, pan, 26°54.288'S 32°17.974'E, Grassy flood plain, 9–10.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19475); 2♂ Ndumo [Ndumo] Game Reserve, Camp & Riverine bush, 4–9.x.1982, J.G.H. Londt (NMSA); 1♂ Port Edward, 31°03'S 30°13'E, 9.vi.1997, K.R. Cradock, Malaise trap (NMSA); 1♂ Ramsgate Butterfly Sanctuary, 30°53.3'S 30°20.4'E, near stream, 10.vii–8.viii.2004, M.B. Mostovski, Malaise trap (NMSA); 2♂ Ramsgate Butterfly Sanctuary, 30°53.3'S 30°20.4'E, 26–29.iv.2004, M.B. Mostovski, light trap (NMSA); 1♂ Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA); 1♂ Royal Natal National Park, Riverine bush, montane slopes, 6–10. xiii.1984, J.G.H. Londt (NMSA); 1♂ Royal Natal National Park, 7–11.iv.1951, Brinck & Rudebeck, insect trap (MZLU); 1♂ Royal Natal National Park, Tendele [Thendele] area, 28°40'46"S 28°55'13"E, Sourveld, 16–18.iii.1990, A.E. Whittington, Mercury vapour light trap (NMSA); 29♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosedes* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19751, 19559, 19720, 19681, 19649, 19774, 19777, 19660, 19680, 19699, 19830, 19763, 19599, 19692, 19651, 19679, 19727, 19771, 19792, 19664, 19683, 19750, 19744, 19748, 19794, 19588, 19781, 19581, 19698); 1♂ St. Lucia Nature Reserve, Coastal bush & forest, 18–20.xii.1981, J.G.H. Londt & B.R. Stuckenberg (NMSA); 1♂ Tugela River, Royal Natal National Park, 15.iii.1954 (NHMUK); 1♂ Umfuli, 28°50'S 31°28'E, 9–11.ix.1994, K.R. Cradock, Malaise trap (NMSA); 1♂ Vernon Crookes Nature Reserve, near Umzinto, 19–23.x.2006, G.B.P. Davies (NMSA); 1♂ Weenen Nature Reserve, 28°51'S 29°59'E, Thornveld, 1–4.x.1990, A.E. Whittington, Malaise trap (NMSA); 1♂ Zinkwasi Conservancy, 29°17'S 31°27'E, 10 m, Margins Dune Forest, 10.vi.1998, J.G.H. Londt (NMSA); *Mpumalanga*: 1♂ White River, 5.iii.1953 (NHMUK); *North West Province*: 1♂ Pilanesberg National Park, Bakubung, 25°20'25"S 27°03'51"E, 1100 m, Gate, 12–19.xi.1999, J.G.H. Londt (NMSA).

Distribution: Kenya, Nigeria, South Africa.



Remarks: Originally described by Deeming 1971 as a new species *A. torrida*, it was later synonymised with *A. lineata* and was treated by Deeming as a variant form of *A. lineata lineata*. I, however, feel that it is sufficiently different and readily distinguishable from the other subspecies of *A. lineata* to warrant that it be recognised as a valid subspecies and not just a variant of *A. lineata lineata*.

*Atherigona lineata* (Adams) ssp. *ugandae* van Emden, 1940

Fig. 53

*Atherigona lineata* ssp. *ugandae* van Emden, 1940: 137, figs 18, 39. Deeming 1971: 177, figs 134–138; Deeming 2000: 285.

Diagnosis: See diagnosis for *Atherigona lineata lineata*.

Type material examined: Holotype ♂: UGANDA: “Mabungo Camp, 6000ft [1829 m], J. Ford, Uganda, Kigezi dist. Xi.1934. B.M.E. Afr. Exp. B.M. 1935-203” (NHMUK).

Other material examined: BOTSWANA: 2♂ Martins Drift, Bechuanaland, [22.5719°S 28.4663°E], ii.1953 (NHMUK). MALAWI: 1♂ Kasungu National Park, Lifupa Camp, 1000 m, *Brachystegia*, 9–10. xii.1980, B.R. Stuckenberg & J.G.H. Londt (NMSA). NAMIBIA: 2♂ Bethanien Dist. 15 km W Goageb, 1100 m, Sandy river bed, 19.ii.1974, M.E. Irwin (NMSA); 1♂ Kaross, ii.1925, SAMC Expedition (SAM-DIP A013856); 1♂ Lüderitz Dist. Agate Beach, 10 km N Lüderitz, 3 m, Low coastal vegetated dunes, 18.ii.1974, M.E. Irwin & B.J. Irwin (NMSA); 1♂ Maltahöhe Dist. Aandster Farm, 1000 m, Vegetated dune and grassland, 16.ii.1974, M.E. Irwin (NMSA); 2♂ Namib Desert Park, Kuiseb River at Gobabeb, 400 m, Riverine forest and sand, 12.ii.1974, M.E. Irwin & B.J. Irwin (NMSA); 3♂ Okahanja, Camping Place, Riverside vegetation, 4.ii.1972, Malaise trap (NHMUK); 4♂ Otjikoko Süd Fm [Farm], 33 mi. ENE Omaruru, 10–13.ii.1972 (NHMUK); 5♂ Otjitambi Fm. [Farm], 27 mi. ESE Kamanjab, at light, 13–15. ii.1972 (NHMUK); 11♂ Swakopmund Dist. Swakop River Mouth, 8 m, Coastal and riverbed dunes, 9.ii.1974, M.E. Irwin & B.J. Irwin (SANC); 3♂ Warmbad, [-28.448034 18.734433], Koakoveld, ii.1925, SAMC Expedition (SAM-DIP A013851); 1♂ Windhoek Dist. Auasberge, 21 km S Windhoek, 1800 m, Sandy wash in mountains, 31.i.1974, M.E. Irwin (NMSA); 2♂ Windhoek Dist. Windhoek, 1800 m, Sandy wash, 3.ii.1974, M.E. Irwin (NMSA); 1♂ Windhoek Dist. Windhoek, 1600 m, Sandy river bottom, 3.ii.1974, M.E. Irwin (NMSA); 1♂ Zesfontein, ii.1925, SAMC Expedition (SAM-DIP A013846). SOUTH AFRICA: *Free State*: 10♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05553, 05519, 05590, 05589, 05586, 05530, 05551, 05538, 05534, 05544); 10♂ Brandfort, Soetdoring Nature Reserve, Kruger's Drift, 28°51.303'S 26°02.302'E, *Acacia* Savanna, 5–6.iv.2009, A.H. & M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 05437, 05478, 05459, 05476, 05471, 05481, 05486, 05484, 05475, 05502); *Gauteng*: 2♂ Johannesburg, 16.i.1953, Paterson (NHMUK); *KwaZulu-Natal*: 1♂ Himeville, 3–5.iii.2004, M.B. Mostovski, light trap (NMSA); 1♂ Ndumo Game Reserve, main road, 26°54.288'S 32°17.974'E, Sand and broad-leaved deciduous forest, 4–8.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 18236); 1♂ Ndumo Game Reserve, pan, 26°54.288'S 32°17.974'E, Grassy flood plain, 9–10.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19484); 3♂ Ramsgate Butterfly Sanctuary, 30°53.3'S 30°20.4'E, 26–29.iv.2004, M.B. Mostovski, light trap (NMSA); 1♂ Royal Natal National Park, 28°41'S 28°56'E, 1440 m, Caravan park environs, 23–28. iii.1991, J.G.H. Londt (NMSA); *Western Cape*: 1♂ Gt. Wint-hoek [Greater Winterhoekberge] Tulbach, 4500 ft. [1372 m], xi. 1916, Lightfoot (SAM-DIP A013855).

Distribution: Botswana, Kenya, Malawi, Namibia, South Africa, Uganda.

*Atherigona londti* sp. n.

Fig. 48

Etymology: Named after the collector of the holotype and some paratype material, Dr Jason Londt.

Diagnosis: This species is very similar to *A. flavifinis* and *A. latibasilaris* in having the apex of the scutellum yellow, but differs greatly in terms of the shape of the trifoliate process and hypopygial prominence. It keys close to *A. hyalinipennis* and *A. secrecauda* Séguéy, 1938 in both Deeming (1971) and Dike (1989a) but the trifoliate

process of *A. londti* lacks the wing-like projections of the hood in *A. secrecauda* and cordiform median piece of *A. hyalinipennis*.

Description:

*Male.*

*Measurements:* Body length: 3.317 mm; wing: 2.944 mm; *r-m* crossvein ratio: 0.429.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput silver-grey dusted with narrow median part glossy, laterally silver-grey dusted. Ocellar triangle silver-grey dusted. Frontal vitta yellow. Frontal plate silver-grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, narrower than arista base at narrowest. Scape and pedicel ferruginous, postpedicel infuscated except for ferruginous basal area. Arista brown. Palpus yellow; truncated and dilated with hyaline hairs.

*Thorax:* Ground colour dark. Postpronotal lobe golden dusted, with three setae and eight setulae. Pleura grey dusted. Proepisternum inconspicuous and gold dusted. Scutum grey dusted, with three weak, barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted except for yellow apex; one pair of basal setae, one pair of discal setae and three discal setulae, one pair of subbasal setae and one pair of apical setae (subbasal 0.8× apical).

*Legs:* All legs yellow except for dark marking on apex of fore femur, with fore tibia and fore tarsi infuscated.

*Leg chaetotaxy:* Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline. Veins brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 immaculate; tergite 3 with a pair of small dark markings, taking up a third of dorsal surface (absent in some paratypes); tergite 4 with two small dark spots, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence slightly bifurcate. Trifoliate process stem 1.6× the length of the apical process; stem brown except for apical third which is hyaline, hood also hyaline, rest of process infuscated; median piece club-shaped with gradual apical dilation, curved in profile, but linear, with two pairs of forward projecting setulae; lateral plates with inner lobes. Surstylus without dark markings.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *Eastern Cape:* Boesmansriviermond, Hill above caravan park, 27–31.xii.1985, J.G.H. Londt (NMSA; Type no. 2507).

Paratypes: *Eastern Cape:* 1♂ 3 km E Grahamstown, Belmont Valley, 2&5.i.1986, J.G.H. Londt & B. Londt, Malaise trap (NMSA; Type no. 2507); 3♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); 2♂ Grahamstown, Albany Museum grounds, 33°18.822'S 26°31.315'E, 15–23.x.2007, A.H. Kirk-Spriggs, Malaise trap (AMGS); 1♂ Port Elizabeth, Cape Recife area, Reserve, 22–27.xii.1985, J.G.H. Londt (NMSA; Type no. 2507); *Western Cape:* 1♂ Cape Town, NE of Houtbay, 34°02'S 18°20'E, 3.x.1994, R. Danielsson (MZLU).

Distribution: South Africa.

### *Atherigona longifolia* van Emden, 1940

Fig. 11

*Atherigona longifolia* van Emden, 1940: 130, figs 25, 32; Deeming 1971: 171, figs 111–113.

Diagnosis: This species can be distinguished from others with an infuscated frontal vitta by its yellow palpi, the fore femur being infuscated on apical half to third and the hypopygial prominence being small and subtruncate, the margins appearing almost angular when viewed dorsally. The median piece of the trifoliate process is also entirely filiform in posterior view and “boomerang” shaped in profile.

Type material examined: Holotype ♂: [UGANDA] ‘Kilembe, 4500 ft [1372 m], F.W. Edwards, Uganda, Ruwenzori Range, xii.1934–i.1935, B.M.E. Afr. Exp., B.M.’ (NHMUK).

Other material examined: [BENIN] ‘DAHOMÉY’: 1♂ Aborney-Calavi. C. 25 km B of Cotonou, xii.1988, J.S. Noyes (NMSA). KENYA: 1♂ *W. Kakamega*: Kakamega Forest Reserve, 00°22'N 34°53'E, 1620 m, Indigenous forest paths, 24.xi.1992, A.E. Whittington & J.G.H. Londt (NMSA). SOUTH AFRICA: *KwaZulu-Natal*: 2♂ Mkuzi Game Reserve, Main Camp and Caravan Park area, 27°35'S 32°13'E, 100 m, 1.ii.1988, J.G.H. Londt (NMSA); 12♂ Ndumo Game Reserve, Main camp, 26°54.652'S 32°19.719'E, Broad-leaved deciduous woodland, 27–30.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 14483, 14477, 14467, 14057, 14511, 14484, 14047, 14488, 14048, 14479, 14475, 14298); 60♂ Ndumo Game Reserve, main road, 26°54.288'S 32°17.974'E, Sand and broad-leaved deciduous forest, 4–8.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 18201, 18204, 18227, 18190, 17533, 17523, 17958, 17555, 17554, 17550, 17543, 18626, 18194, 18188, 18185, 17959, 17541, 17936, 17945, 17949, 18261, 18260, 18255, 18251, 18246, 18240, 18198, 18199, 18242, 17539, 18263, 17521, 17510, 17526, 17547, 18195, 18206, 18258, 18215, 18210, 18235, 17513, 18228, 18203, 18197, 18209, 18229, 18252, 18259, 14480, 18232, 18220, 17538, 17548, 17522, 18208, 18211, 17516, 18221, 18226); 4♂ Ndumo Game Reserve, pan, 26°54.288'S 32°17.974'E, Grassy flood plain, 9–10.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19485, 19469, 19472, 19482); 6♂ Ndumo Game Reserve, Shokwe area, 26°52.125'S 32°13.731'E, Ficus forest, 30.xi–4.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 15821, 15748, 16484, 16353, 15817, 15742); 2♂ Zululand, 20 mi S Ndumu [Ndumo] Game Reserve Camp, 320 ft [98 m]., Dry scrub forest, 29.xi.1971, M.E. Irwin & B.J. Irwin (NMSA).

Distribution: Benin (new), Kenya, Mali, Nigeria, Senegal, South Africa (new), Tanzania, Uganda.

### *Atherigona marginifolia* van Emden, 1940

#### Fig. 19

*Atherigona marginifolia* van Emden, 1940: 122, figs 44, 13; Deeming 1971: 163, figs 77, 78; Deeming 1979: 40, figs 20–22.

Diagnosis: This species has a very characteristic trifoliate process and hypopygial prominence which combined with its one third yellow to two thirds infuscated frontal vitta and ferruginous postpedicel with half infuscated dorsal edge and apex make it quite distinct. The median piece of the trifoliate process has a pair of well-developed apical setae and the hypopygial prominence as in Figure 19c, d.

Type material examined: Holotype ♂: [UGANDA]: Busana, 22.x.1933, (*T. W. Chorley*) (NHMUK).

Other material examined: MALI: 1♂ Mourdiah, 13–25.viii.1986, M. Matthews (NMSA) (Previously NMW.Z.1987–144). SOUTH AFRICA: *Eastern Cape*: 24♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); 1♂ Xuka River, 10 km E Engcobo, river bank, 26.x.1978, J.G.H. Londt & R.M. Miller (NMSA); *Free State*: 2♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05532, 05596); 7♂ Brandfort, Soetdoring Nature Reserve, Kruger's Drift, 28°51.303'S 26°02.302'E, *Acacia* Savanna, 5–6.iv.2009, A.H. & M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 05485, 05487, 05451, 05466, 05461, 05474, 05429); 1♂ Brandfort, Soetdoring Nature Reserve, train camp, 28°50.934'S 26°01.996'E, *Acacia* Savanna thicket, 5–6.iv.2009, A.H. & M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 05493); 2♂ Harrismith, Mooihoekkop, 28°18'50.0"S 29°10'51.1"E, 1800 m, *Leucosedes* [*Leucosidea*] dominated scrub, 14–16.ix.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 09850, 10251); 1♂ Harrismith, Scotland farm, 27°58'59.5"S 29°37'09.8"E, dense *Leucosidea* [*Leucosidea*] dominated scrub, 10–12.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 12767); *Gauteng*: 2♂ Johannesburg, 23.xi.1951, Paterson, ex. Carrion (NHMUK); *KwaZulu-Natal*: 3♂ Ashburton 15 km SE

of Pietermaritzburg, Grassland, ii.1977, J.G.H. Londt, Malaise trap (NMSA); 2♂ Giant's Castle Game Reserve - Injasuti area, 5–11.xii.1983, J.G.H. Londt (NMSA); 1♂ Ingwavuma, Zululand, 10.xii.1963, B.R. Stuckenberg & P. Stuckenberg (NMSA); 2♂ Pietermaritzburg, Town Bush, ix.1976, R.M. Miller (NMSA); 2♂ Richards Bay, 28°46'S 32°04'E, 24.x.1994, R. Danielsson (MZLU); 1♂ Umfolozi Game Reserve, Masinda camp, 28°17'S 31°57'E, 200 m, 25–28.xi.1993, J.G.H. Londt, Malaise (NMSA); 3♂ Weenen Nature Reserve, 28°51'S 29°59'E, Thornveld, 1–4.x.1990, A.E. Whittington, Malaise trap (NMSA); 6♂ Weenen Nature Reserve, Uthombe, 28°51'S 29°59'E, Thornveld, 1–4.x.1990, A.E. Whittington, Sweep net (NMSA); *Limpopo*: 2♂ 23 mi. NW of Naboomspruit, 20.ii.1949 (NHMUK); 2♂ Behind Cloud's End Hotel, 23°00'S 29°55'E, 3500 ft [1067 m], Mixed woodland with stream, 21.xi.1997, D.A. Barraclough & S. James (NMSA); 1♂ Louis Trichardt [Makhado], i–ii.1928, R.F. Lawrence (SAM-DIP A013858); 2♂ Mabula Game Reserve, 24°44.29'S 27°54.45'E, 1230 m, Main lodge area and Bushveld, 15–18. ix.2009, J.G.H. Londt & A. Londt (NMSA); 1♂ Nylsvley [Nature] Reserve, Naboomspruit, 10.xi.1976, P. Ferrar (NHMUK); 1♂ Nylsvley [Nature] Reserve, Naboomspruit, 28.xi.1978, P. Ferrar (NHMUK); 3♂ Nylsvley [Nature] Reserve, Naboomspruit, 8.ii.1977, P. Ferrar (NHMUK); 6♂ Nylsvley Nature Reserve, 24°39'S 28°42'E, 1095 m, ix.1978, G. Ferreira, Malaise trap (SANC); 1♂ Ofcolaco, Selati River, 7–8. xii.1976, R.M. Miller (NMSA); 1♂ Tshakoma, Zpbg [Zoutpansberg], xi.1931, G. van Son (NMSA); *North West Province*: 1♂ Potchefstroom, 16.xii.1952, Paterson (NHMUK); 4♂ Potchefstroom, 18.xii.1952, Paterson (NHMUK); 5♂ Potchefstroom, 7.ii.1953, Paterson (NHMUK); 8♂ Rustenburg Nature Reserve, 25°40'S 27°12'E, 17–20.iii.1980, C.D. Eardley, W.A. Harrop & C.G. Moolman, Malaise trap (SANC); 1♂ Rustenburg Nature Reserve, 25°40'S 27°12'E, 23–26.ii.1981, I.M. Millar, Malaise trap (SANC). ZIMBABWE: 2♂ 6–10.iv.1954, A.J.T. Janse (NMSA).

Distribution: Burkina Faso, Chad, Ghana, Mali, Nigeria, Senegal, South Africa, Uganda, Zimbabwe.

### *Atherigona matilei* Deeming, 1977

#### Fig. 64

*Atherigona matilei* Deeming, 1977: 148, figs 8–12; Deeming 1987: 20.

Diagnosis: This species has the frontal plate glossy in appearance, brown smoky suffusions on the wing and the trifoliate process with the median piece being strongly dilated, having a deep “u” shaped emargination. The hypopygial prominence appears quite complex (Fig. 64d) when viewed dorsally.

Type material examined: Holotype ♂: ‘E. Africa [KENYA]; Mt. Kenya, Ragati, 6800ft [2073 m], 25.viii.1949, J.A. Riley’ (NHMUK).

Other material examined: SOUTH AFRICA: *KwaZulu-Natal*: 1♂ 10 mi. N Jozini, 800 ft. [244 m], Dry forest, 28.xi.1971, M.E. Irwin & B.J. Irwin (NMSA); 1♂ Umhlatuzi, 6.iii.1954 (NMSA).

Distribution: Angola, Cameroon, Kenya, Madagascar, Nigeria, South Africa (new), Uganda.

### *Atherigona mitrata* Séguy, 1955

#### Fig. 41

*Atherigona mitrata* Séguy, 1955: 164; Deeming 1971: 156, figs 42–46.

Diagnosis: This species is very easily distinguished from other species by its very distinct and characteristic head, which is much longer than it is deep, with its parafacialia at its widest being longer than the horizontal length of the eye, at narrowest still wider than the postpedicel. It also has a hyaline trifoliate process with the median piece and lateral lobes very slim (Fig. 41).

Type material examined: Lectotype ♂: CAMEROON (Originally French Cameroun): Garoua, xii.1954, obtenu de larves trouvées dans les mines des tiges de Riz sauvage, M. Descamps (NHMUK).

Distribution: Cameroon, Namibia, Nigeria, South Africa, Zambia, Zimbabwe.

*Atherigona naqvii* Steyskal, 1966

Fig. 37

*Atherigona naqvii* Steyskal, 1966: 53; Deeming 1971: 160, figs 61–66.

Diagnosis: This species has a similarly coloured trifoliate process to that of *A. libertensis* and *A. cinarina*, and also a pair of hyaline apical setulae on the median piece. *A. naqvii* differs, however, from the aforementioned species by the combination of a yellow frontal vitta and the hypopygial prominence appearing tridentate (Fig. 37c). The trifoliate process is also without fine surface setulae as in *A. cinarina*.

Type material examined: None. Type material housed in National Museum of Natural History – Smithsonian Institution (NMNH), but not seen.

Other material examined: BOTSWANA: 3♂ Tsessebe, Bechuanaland, i.1956, F. Zumpt (NHMUK). MALAWI: 1♂ Viphya Mtns [Mountains], Chikangawa, 1700 m, Forest edge & grassland., 5–8.xii.1980, B.R. Stuckenberg & J.G.H. Londt (NMSA). NAMIBIA: 1♂ Gobabis, ii/iii.1971 (NHMUK); 1♂ Kamanyab, iii.1995, SAMC Expedition (SAM-DIP A013847); 2♂ Kaoko Otawi, iii.1995, SAMC Expedition (SAM-DIP A013853); 1♂ Karibib, ii.1978, C. Kok & S.J. van Tonder (SANC); ♀ Maltahöhe Dist. Aandster Farm, 930 m, sandy to gravel grass-covered plain, 17.ii.1974, L. Lyneborg (NMSA); ♂ Namib Desert Park, Kuiseb River at Gobabeb, 400 m, Riverine forest and sand, 12.ii.1974, L. Lyneborg (NMSA); 8♂ Okahanja, Camping Place, Riverside vegetation, 4.ii.1972, Malaise trap (NHMUK); 1♂ Onguma Fm. 55 mi. NW. Tsumeb, 17–19.ii.1972, at light (NHMUK); 7♂ Otjikoko Süd Fm [Farm], 33 mi. ENE Omaruru, 10–13.ii.1972 (NHMUK); 3♂ Otjitambi Fm. [Farm], 27 mi. ESE Kamanjab, at light, 13–15.ii.1972 (NHMUK); 1♂ Outjo, i.1925, SAMC Expedition (SAM-DIP A013854); 3♂ Sesriem Farm, Maltahoe Distr., 19–20.i.1972, general sweeping (NHMUK); 1♂ Warmbad, [-28.448034 18.734433], Koakoveld, ii.1925, SAMC Expedition (SAM-DIP A013851); 2♂ Windhoek, Hoffnung Fm., Lucerne fields, 7.ii.1972 (NHMUK); 1♂ Windhoek, Race-Course, 2–4.ii.1972 (NHMUK); 1♂ Windhoek, Race-Course, Low vegetation, 5.ii.1972 (NHMUK); 3♂ Windhoek, Regenstein Mt., 7000 ft [2134 m], Montane vegetation, 8.ii.1972 (NHMUK); 1♂ Zesfontein, ii.1925, SAMC Expedition (SAM-DIP A013846). SOUTH AFRICA: *Free State*: 1 km SW of Paul Roux, 28°18'S 27°27'E, 1700 m, Rocky hill and farmland, 11.iii.1991, J.G.H. Londt & A.E. Whittington (NMSA); 1♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05548, 05550, 05555); 9♂ Brandfort, Soetdoring Nature Reserve, Kruger's Drift, 28°51.303'S 26°02.302'E, *Acacia* Savanna, 5–6.iv.2009, A.H. & M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 05430, 05445, 05468, 05460, 05448, 05452, 05436, 05470, 05441). 1♂ Brandfort, Soetdoring Nature Reserve, train camp, 28°50.934'S 26°01.996'E, *Acacia* Savanna thicket, 5–6.iv.2009, A.H. & M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 05531); 2♂ *KwaZulu-Natal*: Ozabeni-Manzimbomvu Section, Greater St. Lucia Wetland Park, 27–28.v.2006, G.B.P. Davies (NMSA); 2♂ Richards Bay, 28°46'S 32°04'E, 24.x.1994, R. Danielsson (MZLU); *North West Province*: 1♂ Mafikeng Game Reserve, Kolobe Drinking Pond, 25°50'59"S 25°43'10"E, 1320 m, *Rhus lancea* savanna, 16.iii.2003, J.G.H. Londt (NMSA); 1♂ Swartfontein, Vryburg, 26°54'S 24°45'E, 1240 m, Mixed bushveld-grass, 12.iii.1991, J.G.H. Londt & A.E. Whittington (NMSA); *Western Cape*: 1♂ 3 km E Kaap Agulhas, 34°49'S 20°01'E, 12.x.1994, R. Danielsson (MZLU). SWAZILAND: 1♂ 2 km N Loyengo, 26°33'S 31°11'E, 25.x.1994, R. Danielsson (MZLU).

Distribution: Afrotropical: Botswana (new), Burkina Faso, Ethiopia, Kenya, Malawi (new), Mali, Namibia, Nigeria, Oman, Saudi Arabia, South Africa, Swaziland (new), Yemen.

*Atherigona ndumoensis* sp. n.

Fig. 24

Etymology: Named for the type locality Ndumo Game Reserve, KwaZulu-Natal, South Africa.

Diagnosis: This species is most similar to *A. falcata*, but differs from it in having the truncated apical area of the palpus much smaller than half the length of the entire palpus (as is the case in *A. falcata*). *A. ndumoensis* further has its parafacial area grey



dusted compared to *A. falcata* that has it golden dusted. The trifoliate process also differs in shape (Fig. 24a vs. Fig 23a).

Description:

*Male.*

*Measurements:* Body length: 3.286 mm; wing: 2.88 mm; *r-m* crossvein ratio: 0.477.

*Head:* Ground colour brown. All head setae and setulae infuscated. Occiput grey dusted throughout with narrow median part glossy, laterally silver-grey dusted. Ocellar triangle silver-grey dusted. Frontal vitta yellow, somewhat darker around ocellar triangle. Frontal plate silver-grey dusted throughout with four pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, at narrowest just as wide as arista base. Scape and pedicel ferruginous, postpedicel infuscated except for base which is ferruginous. Arista brown. Palpus yellow, apex truncated and dilated with hyaline hairs.

*Thorax:* Ground colour brown. Postpronotal lobe gold dusted, with three setae (one appearing as setulae) and six setulae. Pleura entirely silver-grey dusted; Proepisternum inconspicuous and gold dusted. Scutum grey dusted throughout, with three faint 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and eight discal setulae, one pair of subbasal setae and one pair of apical setae (subbasal pair equal to apical pair).

*Legs:* All legs yellow.

*Leg chaetotaxy:* Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline. Veins light brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 immaculate; tergite 3 with two small round markings (quite faint compared to most other species) taking up a third of dorsal surface; tergite 4 with small round markings, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence knoblike, apically dilated with a pair of anteriorly projecting tubercles. Trifoliate process stem 1.8× the length of the apical process; trifoliate process infuscated except for hood and majority of stem which are light brown (stem apically hyaline); median piece dilated towards apex (appearing clublike), same general shape in lateral view, having four strong projecting setulae at apex; lateral plates 3× as wide as median piece in profile, with inner lobes. Surstylus without infuscation.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Ndumo Game Reserve, Main camp area, 26°54.652'S 32°19.719'E, Broad-leafed deciduous woodland, 27–30.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 14295).

Distribution: South Africa.

*Atherigona nesshurstensis* sp. n.

Fig. 55

Etymology: Named for the type locality Nesshurst farm, near Harrismith in the Free State, South Africa.



Diagnosis: This species is similar to *A. dentifolia* Dike, 1989, but differs from it by having a bifurcate hypopygial prominence compared to that of *A. dentifolia* which is bilobate. The trifoliate process has its median piece strongly dilated on apical half in posterior view and somewhat dilated throughout its length in profile, compared to *A. dentifolia* which has its median piece filiform throughout.

Description:

*Male.*

*Measurements:* Body length: 3.596 mm; wing: 2.816 mm; *r-m* crossvein ratio: 0.338.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted throughout with narrow median part glossy, also laterally silver-grey dusted. Ocellar triangle grey dusted. Frontal vitta infuscated. Frontal plate silver-grey dusted throughout with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial silver-grey dusted, at narrowest wider than arista base. Scape and pedicel ferruginous, postpedicel and arista infuscated. Palpus yellow, apex truncated and dilated with hyaline hairs.

*Thorax:* Ground colour dark. Postpronotal lobe gold dusted, with three setae and 10 setulae. Pleura entirely grey dusted; Proepisternum inconspicuous and gold dusted. Scutum grey dusted throughout, with three 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and four discal setulae, one pair of subbasal setae and one pair of apical setae (subbasal pair 0.75× apical pair).

*Legs:* All legs yellow except for fore femur with dorsal dark marking near apex, fore tibia entirely infuscated except for extreme base and fore basitarsus together with following tarsal segment, which are also infuscated.

*Leg chaetotaxy:* Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline. Veins brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 with two large dark markings and a very much expanded median vitta that touches the inside edges of both, giving it an almost triangular appearance; tergite 3 two large dark oblong markings taking up over two thirds of dorsal surface, also with expanded median vitta that is almost touching the inside edges of other markings; tergite 4 with small round markings, taking up a third of dorsal surface, basal edge of tergite having a wide dark marking across most of surface; tergite 5 immaculate. Hypopygial prominence bifurcated. Trifoliate process stem 2× the length of the apical process; trifoliate process infuscated except for hood and stem which are light brown; median piece strongly dilated at apex posterior view, linear in lateral view; lateral plates 2× as wide as median piece in profile, with inner lobes. Surstylus with slight infuscation at base, and as strongly infuscated at apex as trifoliate process.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *Free State:* Harrismith, Nesshurst farm, 28°26'53.3"S 29°09'14.2"E, *Leucosidea* [*Leucosidea*] -scrub & stream bed, 17–18.ix.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 11073).

Distribution: South Africa.

*Atherigona nigrapicalis* Deeming, 1979

Fig. 10

*Atherigona nigrapicalis* Deeming, 1979: 36, figs 13–15.

**Diagnosis:** This species can be separated from others with an infuscated frontal vitta by its surstylus that is infuscated apically and on posterior angle. The mesonotum also lacks 2-4 dorsocentral vittae.

**Type material examined:** Holotype ♂: 'NORTHERN NIGERIA [NIGERIA]: Zaria, Samaru, 9.iv.1971, J.C. Deeming' (NHMUK).

**Other material examined:** SOUTH AFRICA: *Gauteng*: 1♂ Johannesburg, 18.i.1953, Paterson (NHMUK); *KwaZulu-Natal*: 1♂ Mkuzi Game Reserve, 27°38'20"S 32°09'30"E, ca. 140 m, 8–15.x.1990, J.G.H. Londt, MV [Mercury vapour] light & Malaise (NMSA); 2♂ Ndumo Game Reserve, pan, 26°54.288'S 32°17.974'E, Grassy flood plain, 9–10.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19465, 19470).

**Distribution:** Nigeria, South Africa, Zimbabwe.

*Atherigona oblonga* sp. n.

Fig. 28

**Etymology:** From the Latin *oblongus* (longer than broad), referring to the shape of the median piece of the trifoliate process.

**Diagnosis:** This species is very similar to *A. fililoba* Deeming, 1979, *A. piscatoris* sp. n. and *A. zariaensis* Deeming, 1979, with regards to the shape of its hypopygial prominence as well as general coloration. It differs, however, from the first two species by having the median piece of the trifoliate process markedly oblong and dilated in apical half in posterior view, compared to that of *A. fililoba* and *A. piscatoris* that is filiform for most of its length. Whilst *A. zariaensis* also has a dilated median piece, it is not oblong, and the lateral lobes are also not constricted medially.

**Description:**

*Male.*

**Measurements:** Body length: 4.433 mm; wing: 3.038 mm; *r-m* crossvein ratio: 0.333.

**Head:** Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted posteriorly and laterally (with the exception of bottom of occiput which is gold dusted) with narrow median part glossy. Ocellar triangle grey dusted. Frontal vitta infuscated with slight reddish suffusion at apex. Frontal plate silver-grey dusted except for area surrounding the apical pair of the three pairs of frontal setae which is gold dusted, also with two pairs of orbital setae. Parafacial golden-yellow dusted, as wide as arista base. Scape, pedicel and arista darkly ferruginous, postpedicel wholly infuscated. Palpus infuscated except for ventral part of apex which is yellow; apex strongly dilated and truncated with hyaline setulae.

**Thorax:** Ground colour dark. Postpronotal lobe gold dusted, with three setae and 13 setulae. Pleura golden dusted. Proepisternum inconspicuous. Scutum grey dusted, with three weak and barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and nine discal setulae; one pair of subbasal setae and one pair of apical setae, equal in length.

**Legs:** All legs yellow except for forelegs with apical two thirds of tibia and all tarsi infuscated.

*Leg chaetotaxy*: Fore femur with one submedial posteroventral seta; apical three fore tarsal segments with long dorsal setulae, at least as long as segments are wide.

*Wings*: Hyaline, except for slight brown smoky suffusion at apex of  $Sc-R_1$  and around humeral crossvein. Veins dark-brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen*: All tergites yellow; tergite 1+2 immaculate; tergite 3 with two medium sized dark-brown almost teardrop shaped marks taking up two thirds of dorsum length; tergite 4 with two small round markings, taking up two thirds of segment length; tergite 5 immaculate. Hypopygial prominence knoblike, with two anteriorly projecting tubercles at apex. Trifoliate process stem  $3\times$  the length of the apical process, entire process including stem infuscated with the exception of the basal third of stem which is hyaline; median piece bifurcated and dilated on apical quarter in posterior view, and boomerang shaped in profile, almost angular; lateral plates narrow in posterior view, medially constricted in profile; inner lobes absent; hood not very pronounced. Surstylus not infuscated.

*Female*. Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Umfolozi Game Reserve, Masinda camp,  $28^{\circ}17'S$   $31^{\circ}57'E$ , 200 m, 25–28.xi.1993, J.G.H. Londt, Malaise (NMSA; Type no. 2508).

Other material examined: *KwaZulu-Natal*: Umlalazi Nature Reserve, Dune forest & edges, 2–10.x.1982, J.G.H. Londt [Head missing] (NMSA).

Distribution: South Africa.

### *Atherigona occidentalis* Deeming, 1971

#### Fig. 32

*Atherigona occidentalis* Deeming, 1971: 177, figs 132, 133; Deeming 1979: 49, figs 53–55.

Diagnosis: This species can be distinguished from others with the frontal vitta, palpi and antennae infuscated by its tridentate hypopygial prominence and Y-shaped median piece of the infuscated trifoliate process.

Type material examined: Holotype ♂: 'NORTHERN NIGERIA [NIGERIA]: Zaria, Samaru, 26.ix.1968, J.C. Deeming, m.v. [Mercury vapour] trap, det Deeming 1969' (NMWC).

Other material examined: BOTSWANA: 1♂ Tsessebe, Bechuanaland, i.1956, F. Zumpt (NHMUK). BURKINA FASO: 1♂ Matourkou, on Sorghum shoots, vii–viii.1987, J. Zongo, leg. J.C. Deeming (NMSA) (Previously NMW.Z.1988–092).

Distribution: Botswana (new), Burkina Faso, Cameroon, Mali, Nigeria, South Africa.

### *Atherigona ochracea* Deeming, 1981

#### Fig. 43

*Atherigona ochracea* Deeming, 1981: 106, figs 19, 20.

Diagnosis: This species can be distinguished from others with a yellow frontal vitta and mostly yellow antennae by its bifurcated hypopygial prominence and trifoliate process with apical half of lateral lobes and entire median piece infuscated.

Type material examined: Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: 'Durban: Natal, vii.1948, J.C. Faure' (NHMUK).

Distribution: South Africa.

*Atherigona parviclivis* sp. n.

Fig. 3

**Etymology:** From the Latin *parvus* (small) and *clivus* (mountain or hill) pertaining to the small hill-shaped hypopygial prominence.

**Diagnosis:** This species keys to *A. ochripes* in (Dike 1989a), but differs from it due to having a very distinctly reduced hypopygial prominence, compared to a truncated and emarginated one. *A. parviclivis* also has its trifoliate process with a much expanded median piece, appearing almost semi-circular (Fig. 3b) in profile, entirely filiform in posterior view and the entire process infuscated except for the base, compared to *A. ochripes* which has it slightly dilated in posterior view, not semi-circular in profile and having the process hyaline for the most part.

**Description:**

*Male.*

**Measurements:** Body length: 3.689 mm; wing: 3.072 mm; *r-m* crossvein ratio: 0.365.

**Head:** Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted posteriorly and laterally (with the exception of bottom of occiput which is gold dusted) with narrow median part glossy. Ocellar triangle grey dusted. Frontal vitta infuscated. Frontal plate silver-grey dusted except for area surrounding the apical two pairs of the three pairs of proclinate frontal setae which is gold dusted, also with two pairs of orbital setae. Parafacial golden dusted, wider than arista base. Scape and pedicel darkly ferruginous, postpedicel infuscated except for narrow basal inner area. Arista infuscated. Palpus entirely yellow; apex weakly truncated with minimal dilation, palpus appearing almost straplike.

**Thorax:** Ground colour dark. Postpronotal lobe gold dusted, with three setae and 12 setulae. Pleura golden dusted. Proepisternum inconspicuous. Scutum grey dusted, with three weak and barely visible 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and an unknown number of discal setulae (due to specimen damage); one pair of subbasal setae and one pair of apical setae (comparison not possible due to damage).

**Legs:** All legs yellow except for forelegs with apical half of tibia and all tarsi infuscated.

**Leg chaetotaxy:** Fore tarsi without any specialised chaetotaxy.

**Wings:** Hyaline. Veins light brown. Knob of halteres white with stalk yellow. Calypters white.

**Abdomen:** All tergites yellow; tergite 1+2 immaculate; tergite 3 with two medium sized dark-brown marks taking up a third of dorsal surface; tergite 4 with two small round markings, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence simple, appearing as a conical protrudence. Trifoliate process stem 3× the length of the apical process, entire process infuscated except for hyaline stem and hood; median piece linear and without dilation in posterior view, greatly dilated in profile, just as wide as lateral plates, almost semi-circular in appearance, without inner lobes; lateral plates in the shape of an upside-down teardrop when viewed in profile. Surstylus not infuscated.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Ndumo Game Reserve, main road, 26°54.288'S 32°17.974'E, Sand and broad-leafed deciduous forest, 4–8.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 18183).

Distribution: South Africa.

*Atherigona parvihumilata* sp. n.

Fig. 4

Etymology: From the Latin *parvus* (small) and *humilis* (humble), referring to the size and shape of the hypopygial prominence.

Diagnosis: This species is similar to other species that have the frontal plate and occiput glossy in combination with an infuscated frontal vitta, but differs from them in having the entire dorsal surface of the abdomen uniformly infuscate. *A. stuckenbergi* sp. n. has a similar abdominal coloration, but has its hypopygial prominence bilobate instead of weakly developed and somewhat bifurcated as in *A. parvihumilata*.

Description:

*Male.*

*Measurements:* Body length: 2.697 mm; wing: 2.48 mm; *r-m* crossvein ratio: 0.365.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput infuscated with dark brown-grey pruinosity with rest of occiput glossy. Ocellar triangle infuscated with dark brown-grey pruinosity. Frontal vitta infuscated. Frontal plate entirely glossy with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial dark brown-grey dusted, narrower at bottom than arista base. Scape, pedicel postpedicel and arista infuscated. Palpus infuscated; apex truncated and dilated, with hyaline hairs.

*Thorax:* Ground colour dark. Postpronotal lobe infuscated, with three setae and six setulae (four of which are very strongly developed almost appearing to be setae). Pleura grey dusted. Proepisternum inconspicuous and gold dusted. Scutum infuscated, with three strong 2-4 dorsocentral vittae, stopping before scutellum. Scutellum infuscated; one pair of basal setae, one pair of discal setae and nine discal setulae, one pair of subbasal setae and one stronger pair of apical setae (equal in length).

*Legs:* Forelegs and as well as mid and hind leg tarsi entirely infuscated, mid and hind legs otherwise yellow.

*Leg chaetotaxy:* Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline, except for slight brown smoky suffusion at areas surrounding *Sc-R<sub>1</sub>* and the humeral crossvein. Veins dark-brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites infuscated; tergites 1+2, 3, 4 and 5 entirely covered by a seemingly singular dark mark, but is broken between tergite 4 and 5. Hypopygial prominence reduced, with a slight emargination at apex, almost appearing bifurcate. Trifoliate process stem 2.8× the length of the apical process; stem and hood lighter than rest of process which is infuscated, lateral plates and median piece infuscated; median piece linear, narrower than lateral plates; lateral plates without inner lobes. Surstylus without dark markings.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *Eastern Cape*: Lower Elandsbos river, on river bank, 33°58.007'S 23°46.492'E, Indigenous forest, 3–5.iv.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS).

Paratypes: 2♂ same data as holotype (AMGS).

Distribution: South Africa.

### *Atherigona perfida* Stein, 1913

#### Fig. 34

*Atherigona perfida* Stein, 1913: 533; van Emden 1940: 126, figs 26, 57; van Emden 1956: 520; Deeming 1971: 155, figs 166, 167; Deeming 1979: 44, figs 30–34.

Diagnosis: This species can be distinguished from other species with a tridentate hypopygial prominence through the combination of entirely yellow forelegs and having the frontal vitta infuscated.

Type material examined: Paralectotype ♂: ETHIOPIA: Dire Dawa, 19.xi.1911, Abyssinia, Kovaca, Brit Mus. 1949-630., det. P. Stein (ZMHB).

Other material examined: BOTSWANA: 1♂ Tsessebe, Bechuanaland, i.1956, F. Zumpt (NHMUK). MALAWI: 2♂ Zomba Plateau, Chinwe's Hole, Forest Patch, 12–13.iii.1987, J.G.H. Londt & A. Londt, Malaise trap (NMSA). SOUTH AFRICA: *Eastern Cape*: 1♂ Ingeli Forest, Kokstad Dist. Griqualand East, 17.x.1959, B.R. Stuckenberg & P. Stuckenberg (NMSA); *Gauteng*: 1♂ Johannesburg, 27.iii.1949, F. Zumpt (NHMUK); *KwaZulu-Natal*: 2♂ Cathedral Peak area, Forest & Grassland, 14–18.ix.1982, D. Barraclough & C. Barraclough (NMSA); 1♂ Cathedral Peak Edu. Camp, 11–12.ix.2004, M.B. Mostovski, Yellow pan traps (NMSA); 3♂ Cathedral Peak N.R., Didima, 28°57.4'S 29°14.4'E, 1420 m, 12–16.xii.2005, M.B. Mostovski (NMSA); 7♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA); 3♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 14–16.xii.2005, M.B. Mostovski (NMSA); 1♂ Cedara College, 8.viii.1976, R.M. Miller (SANC); 1♂ Drakensberg Garden Caravan Park, 29°45'S 29°15'E, ca. 1750 m, On Cassine flowers, 6–11.i.1988, J.G.H. Londt (NMSA); 2♂ Giant's Castle, 29°15.955'S 29°31.228'E, 1710 m, 8–10.xii.2004, M.B. Mostovski (NMSA); 1♂ Injasuti Nature Reserve, 29°12'S 29°11'E, 1500 m, 25.iii.1994, J.G.H. Londt (NMSA); 1♂ Karkloof, 8.i.1957, B.R. Stuckenberg & P. Stuckenberg (NMSA); 1♂ Lions Bush, Nottingham, 9.xiii.1954, B.R. Stuckenberg (NMSA); 3♂ Louwsberg, iGwala Gwala, 27°34'S 31°17.9'E, 1090 m, 2–3.vi.2005, M.B. Mostovski, YPT [yellow pan trap] (NMSA); 1♂ Midlands, Howick, 29°29'S 30°13'E, 1060 m, Streamside vegetation, 10.viii.1991, A.E. Whittington (NMSA); 1♂ Newcastle, xii.1952 (NHMUK); 1♂ Pongola Bush Nature Reserve, 27°21'S 30°26'E, Indigenous forest, 18.i.1995, B.R. Stuckenberg (NMSA); 2♂ Royal Natal Nat. Res [National Park], 28°41.4'S 28°56.3'E, 1420 m, 8–12.xii.2005, M.B. Mostovski, Sweeping (NMSA); 7♂ Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA); 1♂ Royal Natal National Park, 1500 m, 13.ix.1963, B.R. Stuckenberg & P. Stuckenberg (NMSA); 10♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosedes* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19754, 19714, 19832, 19724, 19725, 19722, 19709, 19765, 19594, 19726); 1♂ Royal Natal National Park, Tugela Valley, 5.iv.1951, Brinck & Rudebeck, insect trap (MZLU); *Limpopo*: 1♂ Nylsvley [Nature Reserve, Naboomspruit, 28.iii.1979, P. Ferrar (NHMUK).

Distribution: Botswana (new), Burundi, Cameroon, Ethiopia, Kenya, Malawi (new), Nigeria, Rwanda, South Africa (new), Uganda.

### *Atherigona piscatoris* sp. n.

#### Fig. 27

Etymology: From the Latin *piscator* (fisherman), which alludes to the unique shape of the apex of the trifoliate process which is shaped like a fish hook.

Diagnosis: This species keys to (Dike 1989a) and is very similar to *A. binubila* in terms of coloration and the shape of the hypopygial prominence. It differs, however, entirely from that species (and all known others) in having a uniquely shaped median piece of the trifoliate process (Fig. 27a, b).



## Description:

*Male.*

*Measurements:* Body length: 4.309 mm; wing: 3.12 mm; *r-m* crossvein ratio: 0.412.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput grey dusted posteriorly with narrow median part glossy, laterally also grey dusted. Ocellar triangle grey dusted. Frontal vitta infuscated. Frontal plate grey dusted, with three pairs of proclinate frontal and two pairs of orbital setae. Parafacial golden-grey dusted, at narrowest as wide as arista base. Scape and pedicel infuscated with ferruginous apex. Postpedicel infuscated. Arista infuscated. Palpus infuscated; apically dilated and truncated, with hyaline setulae.

*Thorax:* Ground colour dark. Postpronotal lobe grey dusted, lobe with three setae and 12 setulae. Pleura golden-grey dusted. Proepisternum inconspicuous. Scutum grey dusted, with three faint and barely visible 2-4 dorsocentral vittae, not extending to the scutellum; Scutellum grey dusted, apical edge yellow; one pair of basal setae, one pair of discal setae and six discal setulae, one pair of subbasal setae and one pair of apical setae, subbasal and apical pair equal.

*Legs:* All legs yellow except for apical half of fore tibia and first three tarsal segments of fore tarsi which are infuscated.

*Leg chaetotaxy:* Fore tarsi without any specialised chaetotaxy.

*Wings:* Hyaline, except for slight brown smoky suffusion at apex of *Sc-R<sub>1</sub>* and humeral crossvein. Veins brown. Halteres with white knob and yellow stalk. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 with a brown marking; tergite 3 with two large dark-brown oblong marks taking up approximately two thirds of surface; tergite 4 with two small round markings, taking up a third of segment; tergite 5 immaculate. Hypopygial prominence knob-shaped with two anteriorly projecting tubercles. Trifoliate process stem 2× the length of the apical process; trifoliate process infuscated except for brown stem; median piece with filiform in posterior view except for apex which is abruptly dilated, with hyaline setulae: one pair small and undifferentiated and the other pair long and hair-like (at least half the length of median piece); median piece almost angular in profile, with gradual dilation towards apex starting from middle of piece in profile, appearing to be shaped like a fishhook; lateral plates barely wider than median piece in profile, no inner lobes present. Surstylus not infuscated.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Giant's Castle, 29°15.955'S 29°31.228'E, 1710 m, 8–10.xii.2004, M.B. Mostovski (NMSA; Type no. 2510).

Paratypes: *KwaZulu-Natal*: 9♂ same label data as holotype (NMSA; Type no. 2510); *Free State*: 4♂ Geluksdal farm, 27°54'7.05"S 29°23'31.9"E, sparse *Leucosidea* [*Leucosidea*] dominated scrub, 9–10.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 13289, 13292, 13293, 13294); 6♂ Harrismith, Scotland farm, 27°58'59.5"S 29°37'09.8"E, dense *Leucosidea* [*Leucosidea*] dominated scrub, 10–12.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 12761, 12769, 12770, 12773, 12779, 12782); *KwaZulu-Natal*: 5♂: Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA); 1♂ Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA); 1♂ Royal Natal National Park, Riverine bush, montane slopes, 6–10.xiii.1984, J.G.H. Londt (NMSA); 30♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosides* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19691, 19678, 19836, 19827, 19689, 19782, 19565, 19739, 19608, 19786, 19696, 19582, 19790, 19710, 19795, 19579, 19661, 19701, 19606, 19603, 19758, 19736, 19638, 19637, 19776, 19623,

19632, 19598, 19766, 19590); 1♂ Royal Natal National Park, Tiger Falls area, 28°41.341'S 28°56.047'E, *Protea caffra* woodland, 17–18.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19808).

Distribution: South Africa.

*Atherigona pulla* (Wiedemann, 1830)

Fig. 6

*Coenosia pulla* Wiedemann, 1830: 441.

*Orthostylum rufipes* Macquart, 1851a: 245 (1851b: 272).

*Atherigona destructor* Malloch, 1923: 185.

*Atherigona pulla*: Pont 1972: 51, fig. 14 (synonymised with *A. destructor*); Deeming 1979: 39.

Diagnosis: This species can be distinguished from most other species in having yellow vibrissae, compared to the more common infused state in others. It can be distinguished from *A. angulata* due to the shape of the trifoliate process. It can further be distinguished from *A. chrysohypene* by the shape of the hypopygial prominence which is knoblike and emarginate compared to the latter's being bilobate.

Type material: Paralectotype ♀ housed in Natural History Museum of Denmark (ZMUC), but not seen.

Other material examined: SOUTH AFRICA: *Free State*: 1♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05525); *Western Cape*: 1♂ Clanwilliam 32 km NE Clanwilliam, Brandewyn R. [River], 2–3.x.1997, R.M. Miller (NMSA); 1♂ Kroonplanskloof, 10 km S Citrusdal, 32°40'S 19°01'E, 200–270 m, 4–8.x.1994, R. Danielsson (MZLU).

Distribution: Kenya, Madagascar, Mali, Morocco, Nigeria, South Africa, Sudan, Uganda, Zimbabwe.

*Atherigona rimapicis* sp. n.

Fig. 58

Etymology: From the Latin *rima* (cleft) and *apicis* (top), referring to the cleft apex of the median piece of the trifoliate process.

Diagnosis: This species keys close to *A. facilis* Deeming, 1971 in Dike (1989a) but differs from it in that it does not have a strongly bifurcated hypopygial prominence (Fig. 58c). It has the median piece of the trifoliate process almost bent angular and apically dilated in profile, compared to *A. facilis* which has the median piece linear in profile.

Description:

*Male*.

*Measurements*: Body length: 3.937 mm; wing: 3.168 mm; *r-m* crossvein ratio: 0.377.

*Head*: Ground colour dark. All head setae and setulae infuscated. Occiput silver-grey dusted with narrow median part glossy, laterally silver-grey dusted. Ocellar triangle silver-grey dusted. Frontal vitta infuscated. Frontal plate golden dusted around three pairs of proclinate frontal setae and grey dusted around two pairs of orbital setae. Parafacial golden dusted, wider at narrowest than aristal base. Scape, pedicel and postpedicel infuscated except for and apical edge of pedicel and basal area of postpedicel. Arista infuscated. Palpus yellow; truncated and dilated with hyaline hairs.

*Thorax*: Ground colour dark. Postpronotal lobe golden dusted, with three setae and 11 setulae. Pleura grey dusted. Proepisternum inconspicuous and gold dusted. Scutum

grey dusted, with three 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and six discal setulae, one pair of subbasal setae and one stronger pair of apical setae (subbasal 0.88× apical).

*Legs:* All legs yellow.

*Leg chaetotaxy:* Apical three segments of fore tarsi with dorsal setulae that are at least as long as segments are wide.

*Wings:* Hyaline. Veins brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 immaculate; tergite 3 with a pair of small teardrop shaped dark markings, taking up a third of dorsal surface; tergite 4 with two small dark spots, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence with strong bifurcation, lobes appearing as two fused triangles in apical view. Trifoliate process stem 2.3× the length of the apical process; entire process brown throughout except for hyaline base of stem; median piece very strongly apically dilated, almost circular, with deep cleft at apex and appearing somewhat angular in profile (Holotype specimen is damaged with median piece separated from rest of process); lateral plates without inner lobes. Surstylus without dark markings.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *Western Cape:* De Hoop Nature Reserve, 34°27'S 20°25'E, 0–200 m, 10–13.x.1994, R. Danielsson (MZLU).

Paratypes: *Western Cape:* 1♂ same data as holotype (MZLU); 1♂ *Eastern Cape:* Grahamstown, Albany Museum grounds, 33°18.822'S 26°31.315'E, 15–23.x.2007, A.H. Kirk-Spriggs, Malaise trap (AMGS).

*Distribution:* South Africa.

### *Atherigona rubricornis* Stein, 1913

#### Fig. 45

*Atherigona rubricornis* Stein, 1913: 531; van Emden 1940: 101, figs. 15, 51; Deeming 1971: 157, figs 47, 48 (*A. tritici* Pont & Deeming figured); Deeming 1979: 39, figs 19 (female tergite 8); Pont & Deeming 2001: 298, figs 1–4.

*Diagnosis:* This species can be distinguished from other species with a partially yellow frontal vitta by the trifoliate process with median piece entirely linear in posterior view. The species is very similar to *A. tritici* Pont & Deeming, 2001 (with *A. tritici* previously regarded as a form of *A. rubricornis*) with the main difference being the shape of the median piece which is dilated at its apex.

Type material examined: Syntype ♂: [ZIMBABWE]: 'Salisbury [Harare], Mashonaland, G.A.K. Marshall' (ZMHB).

Other material examined: BOTSWANA: 1♂ Tlokweng, Sorghum field, 6–13.iii.1990, J.M. Mashonja, Malaise trap (NMSA); 1♂ Tsessebe, Bechuanaland, i.1956, F. Zumpt (NHMUK). SOUTH AFRICA: *Eastern Cape:* 1♂ Aliwal North, 30°42'S 26°43'E, iii.1979, C.D. Eardley, C. Kok & S.J. van Tonder, Malaise trap (SANC); 1♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); *Free State:* 1♂ 42 km SW of Winburg, 28°45'S 26°45'E, 1500 m, Grassland & bushes, 20.iii.1991, J.G.H. Londt & A.E. Whittington (NMSA); 7♂ Adullam Farm nr. Clarens, 28°32'S 28°28'E, 20–26.ii.1980, S.J. van Tonder, C. Kok & W.A. Harrop, Malaise trap (SANC); 2♂ Adullam Farm nr. Clarens, 28°32'S 28°28'E, 20–26.ii.1980, C. Kok, Malaise trap (SANC); 6♂ Brandfort, Florisbad Research Station, 28°46.039'S 26°04.234'E, *Acacia* Savanna, 4–6.iv.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 05592, 05591, 05516, 05521, 05581, 05570); 4♂ Brandfort, Soetdoring Nature Reserve, Kruger's Drift, 28°51.303'S 26°02.302'E, *Acacia* Savanna, 5–6.iv.2009, A.H.

& M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 5455, 5431, 5477, 5482); *KwaZulu-Natal*: 1♂ 20 mi. N Jozini, 750 ft [229 m]., dry hillside, 28.xi.1971, M.E. Irwin & B.J. Irwin (NMSA); 1♂ Ferncliff Nature Reserve, 29°33.2'S 30°20.5'E, 855 m, 5.xii.2004, M.B. Mostovski, light trap (NMSA); 1♂ Hilton Road, 13.xii.1963, B.R. Stuckenberg (NMSA); 3♂ Himeville, 3–5.iii.2004, M.B. Mostovski, light trap (NMSA); 1♂ Howick, 29°28'S 30°13'E, 1060 m, 9.iv.1993, A.E. Whittington, Mercury blended light (NMSA); 1♂ Ndumo Game Reserve, main road, 26°54.288'S 32°17.974'E, Sand and broad-leaved deciduous forest, 4–8.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 17559); 1♂ Pietermaritzburg, Hilton, garden, 13–23.xi.2003, M.B. Mostovski, Malaise trap (NMSA); 2♂ Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA); 3♂ Royal Natal National Park, 7–11.iv.1951, Brinck & Rudebeck, insect trap (MZLU); 1♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosedes* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19723); 2♂ St. Lucia Nature Reserve, Coastal bush & forest, 18–20.xii.1981, J.G.H. Londt & B.R. Stuckenberg (NMSA); *Limpopo*: 1♂ 23 mi. NW of Naboomspruit, 20.ii.1949 (NHMUK); 1♂ Nylsvley Nature Reserve, 24°39'S 28°42'E, 10–11.xii.1979, C.D. Eardley, C.G. Moolman & W.A. Harrop, Malaise trap (SANC); *Mpumalanga*: 1♂ 8 km NW Baberton on Badplaas Rd., Bushveld long grass, 6–8.iv.1985, J.G.H. Londt (NMSA); 1♂ Baberton, 13.xii.1910, A.J.T. Janse (NMSA); 1♂ Loskopdam Nature Reserve area, Bushveld nr. River, 24.i.1978, J.G.H. Londt (NMSA); *North West Province*: 1♂ S.A. Lombaard Nature Reserve, 27°36'05"S 25°28'51"E, 1230 m, Rhus, *Acacia* savanna, 11.iii.2003, J.G.H. Londt, Malaise and light traps (NMSA); *Western Cape*: 1♂ Malgas, 34°20'S 20°30'E, 40 m, 11–13.x.1994, R. Danielsson (MZLU).

Distribution: Botswana, Chad, Kenya, Namibia, Nigeria, South Africa, Uganda, Zimbabwe.

### *Atherigona ruficornis* Stein, 1913

Fig. 38

*Atherigona ruficornis* Stein, 1913: 532; van Emden 1940: 121, figs 20, 50.

Diagnosis: This species can be distinguished from similar species such as *A. rubricornis* by its entirely yellow fore femur. The hypopygial prominence, whilst bifurcated and quite similar to that of *A. rubricornis* is more apically pointed. The trifoliolate process is filiform in posterior view, and apically curved and dilated.

Type material examined: Syntype ♂: [ZIMBABWE]: 'Salisbury [Harare], Mashonaland, G.A.K. Marshall' (ZMHB).

Other material examined: ETHIOPIA: 2♂ Alemaya, vii–viii.1986, T. Mesfin, leg. J.C. Deeming (NMSA) (Previously NMW.Z.1986–118). SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Cathedral Peak area, 5–6.ii.1993, J.G.H. Londt, ex. Malaise (NMSA).

Distribution: Angola, Ethiopia, Kenya, Nigeria, South Africa, Tanzania, Uganda, Yemen, Zanzibar, Zimbabwe.

### *Atherigona secrecauda* Séguéy, 1938

Fig. 50

*Atherigona secrecauda* Séguéy, 1938: 372; Deeming 1971: 155, figs 39–41; Deeming 1979: 38, figs 16–18; Deeming 1981: 104, figs 14, 15.

Diagnosis: This species can be distinguished from others by the winglike projections of the hood and the bilobate hypopygial prominence that which appears like two fused triangles when viewed dorsally.

Type material examined: Lectotype ♂: KENYA: 'Elgon Saw mill, Mt. Elgon Ver' Est (Camp II) 2.470m Museum De Paris, Mission de l'Omo, C. Arambourg, P.A. Chappuis & R. Jeannel, *Atherigona secrecauda* Séguéy, E. Seguy det. 1935' (MNHM).

Other material examined: ETHIOPIA: 2♂1♀ Alemaya, vii–viii.1986, T. Mesfin (NMSA) (Previously NMW.Z.1986–118). MOZAMBIQUE: 2♂ Lourenço Marques [Maputo], 11.ii.1953, Paterson (NHMUK). SOUTH AFRICA: *Free State*: 4♂ Harrismith, Mooihoekkop, 28°18'50.0"S 29°10'51.1"E, 1800 m,

*Leucosedes* [*Leucosidea*] dominated scrub, 14–16.ix.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 09860, 10250, 09849, 10252); 1♂ Harrismith, Scotland farm, 27°58'59.5"S 29°37'09.8"E, dense *Leucosidea* [*Leucosidea*] dominated scrub, 10–12.xi.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 12780); *KwaZulu-Natal*: 1♂ Cathedral Peak N.R., Didima, 28°57.4'S 29°14.4'E, 1420 m, 12–16.xii.2005, M.B. Mostovski (NMSA); 1♂ Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA); 1♂ 1.5 km NW Lidgetton, ca. Cavasham Falls, 2.xii.1979, R.M. Miller & P. Stabbins (NMSA); 1♂ Kosi Bay - Lakeside, Papyrus Swamp Malaise, 16–19.iii.1982, D.A. Barraclough (NMSA); 1♂ Ozabeni-Manzimbomvu Section, Greater St. Lucia Wetland Park, 27–28.v.2006, G.B.P. Davies (NMSA); ♂ Richards Bay, 28°46'S 32°04'E, 24.x.1994, R. Danielsson (MZLU); 4♂ Royal Natal National Park, Thendele, 28°42.378'S 28°56.083'E, 1600 m, *Leucosedes* [*Leucosidea*] dominated scrub, 15–17.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19780, 19577, 19552, 19747); 1♂ Tugela River, N Gobevu, 25 mi. N Greytown, 29.iii.1954 (NHMUK); *Limpopo*: 1♂ Mogoto [Private] Nature Reserve, 24°15'S 29°13'E, 22–25.x.1979, C.D. Eardley, Malaise trap (SANC).

Distribution: Burkina Faso, Burundi, Cameroon, Congo, Democratic Republic of the Congo, Ethiopia, Kenya, Mali, Mozambique (new), Nigeria, Rwanda, Sierra Leone, South Africa, Tanzania, Uganda, Zimbabwe.

### *Atherigona soccata* Rondani, 1871

Fig. 54

*Atherigona soccata* Rondani, 1871: 332; Deeming 1987: 18.

*Atherigona indica* Malloch, 1923: 193.

*Atherigona varia* Meigen, 1826 (misident.).

*Atherigona indica infusca* van Emden, 1940: 123, fig. 19.

*Atherigona varia* (Meigen) var. *soccata*: Deeming 1971: 165, figs 85–91.

Diagnosis: This species has a very characteristically shaped hypopygial prominence, that is very widely bifurcated. The aforementioned in combination with yellow palpi and an infuscated frontal vitta makes the species distinguishable from other similarly coloured species.

Type material: Holotype housed in Museo Zoologico La Specola (MZLSF), but not seen.

Other material examined: SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Ndumo Game Reserve, Shokwe area, 26°52.125'S 32°13.731'E, Ficus forest, 30.xi–4.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 16489); *Mpumalanga*: 1♂ Kiepersol, Burgers Hall, Exper [Experimental]. Stn. [Station], xii.1996–i.1997, T. Sherwill (NMSA).

Distribution: Burkina Faso, Côte d'Ivoire, Egypt, Kenya, Madagascar, Mauritius, Nigeria, Réunion, South Africa, Tanzania, Uganda.

### *Atherigona steeleae* van Emden, 1940

Fig. 63

*Atherigona steeleae* van Emden, 1940: 129; Deeming 1971: 170, figs 103–107; Deeming 1979: 38.

Diagnosis: This species is distinguishable by the combination of its entirely yellow legs and palpi, a subcordiform hypopygial prominence and the trifoliate process with the median piece apically dilated and the apex slightly emarginate.

Type material examined: Holotype ♂ 'UGANDA: Ruwenzori Range, xii.1934–i.1935, B.M.E. Afr. Exp. B.M. 1935-203, Kilembe, 4500ft. [1372 m], F.W. Edwards' (NHMUK).

Other material examined: KENYA: 1♂ Maungu Hills, 7.i.1973, I. Bampton (NMSA). SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Port Edward, 31°03'S 30°13'E, 9.vi.1997, K.R. Cradock, Malaise trap (NMSA).

Distribution: Cameroon, Democratic Republic of the Congo, Ethiopia, Kenya, Mali, Nigeria, South Africa, Sudan, Tanzania, Uganda.

*Atherigona stuckenbergi* sp. n.

Fig. 62

**Etymology:** Named for the collector of the type series, Dr Brian Stuckenberg.

**Diagnosis:** This species has the median piece of the trifoliate process very similar to *A. occidentalis* due to the Y-shaped apex, but it differs from the latter and is also very similar to *A. parviumilata* in having its abdominal tergites entirely infuscate and not covered with paired markings as is custom for most species of the genus. It further differs from *A. parviumilata* by the shape of the hypopygial prominence that is a well developed bilobate structure compared to that of *A. parviumilata* which is reduced and weakly bifurcated.

**Description:**

*Male.*

**Measurements:** Body length: 3.72 mm; wing: 3.28 mm; *r-m* crossvein ratio: 0.392.

**Head:** Ground colour brown. All head setae and setulae infuscated. Upper occiput brown, glossy, laterally silver-grey dusted. Ocellar triangle infuscated, with slight pruinosity. Frontal vitta infuscated. Frontal plate appearing glossy with slight pruinosity throughout, with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial gold dusted, as wide as arista base at narrowest. Scape, pedicel, postpedicel and arista infuscated. Palpus yellow, apex truncated and dilated with hyaline hairs.

**Thorax:** Ground colour dark. Postpronotal lobe gold dusted, with three setae and 10 setulae. Pleura entirely gold dusted, except for bottoms of katapisternum and meron which are silver-grey dusted; Proepisternum inconspicuous and gold dusted. Scutum brown, glossy with slight pruinosity throughout three dark-brown 2-4 dorsocentral vittae, having a slight dusted appearance between each vitta, stopping before scutellum. Scutellum with the same appearance as the scutum; one pair of basal setae, one pair of discal setae and eight discal setulae, one pair of subbasal setae and one pair of apical setae (subbasal pair 0.75× apical pair).

**Legs:** All legs yellow except for entire fore tibia and all leg basitarsi as well as second tarsal segment.

**Leg chaetotaxy:** Dorsal surfaces of fore tarsi, except for basitarsus with long setulae (at least as long as width of segments).

**Wings:** Hyaline. Veins dark-brown. Knob of halteres white with stalk yellow. Calypters white.

**Abdomen:** All tergites yellow; tergites 1+2, 3 and 4 with dorsal surfaces entirely infuscated; tergite 5 immaculate. Hypopygial prominence bilobed. Trifoliate process stem 3× the length of the apical process; trifoliate process entirely infuscated except for basal third of stem which is hyaline and median piece and hood which are brown; median piece with wide apical dilation and bifurcation in posterior view, appearing almost Y-shaped; median piece basally dilated in profile, gradually constricting towards apex; lateral plates with inner lobes, appearing wider than median piece in profile and in posterior view. Surstylus without any infuscation.

*Female.* Unknown.



Holotype ♂: SOUTH AFRICA: *Limpopo*: Entabeni Forest Station, Zoutpansberg range, Indigenous forest, i.1975, B.R. Stuckenberg (NMSA; Type no. 2511).

Paratype ♂: *Limpopo*: same label data as holotype (NMSA; Type no. 2511).

Distribution: South Africa.

### *Atherigona tetrastigma* Paterson, 1956

#### Fig. 2

*Atherigona tetrastigma* Paterson, 1956: 169, fig. 7; Deeming 1975: 1, fig. 3 (female tergite 8).

Diagnosis: This species is easily distinguished from other species due to the combination of an absent hypopygial prominence and the proepisternum not being knoblike (unlike *A. divergens* which has it knoblike).

Type material examined: Holotype ♂: 'TANZANIA: Kware b. moshi, 27.XII.1952, D.O.A exp., *Atherigona tetrastigma* '55, det. Paterson' (SMNS).

Distribution: Democratic Republic of the Congo, Kenya, South Africa, Tanzania.

### *Atherigona theodori* Hennig, 1963

#### Fig. 44

*Atherigona theodori* Hennig, 1963: 2; Deeming 1981: 102, fig. 8 (female tergite 8).

Diagnosis: This species can be distinguished from others with the occiput and frontal plate glossy by its frontal vitta being yellow on more than its anterior half, Tergite 3 immaculate and the trifoliate process entirely infusate on a short stem and the hypopygial prominence bifurcate.

Type material examined: Holotype ♂: [EGYPT]: 'Kairo (XI. 44 229)' (ZMHB).

Other material examined: NAMIBIA: 2♂ Nr. Onseepkans, Orange River banks, 8–10.i.1972, Southern African Expedition, general sweeping (NHMUK); 7♂ Swakopmund, 26–30.i.1972, southern African Expedition, general sweeping (NHMUK); 2♂ Swakopmund, 26–30.i.1972, southern African Expedition, Swept vegetation around sewage farm settling tanks (NHMUK). SOUTH AFRICA: *Eastern Cape*: 1♂ 3 km E Grahamstown, Belmont Valley, 2&5.i.1986, J.G.H. Londt & B. Londt, Malaise trap (NMSA); 3♂ Grahamstown (plot 5280), Three Chimneys farm, 33°18.542'S 26°29.846'E, 2–13.iii.2008, A.H. Kirk-Spriggs, Malaise trap (AMGS); *Free State*: 1♂ Brandfort, Soetdoring Nature Reserve, train camp, 28°50.934'S 26°01.996'E, *Acacia* Savanna thicket, 5–6.iv.2009, A.H. & M.K. Kirk-Spriggs, Malaise trap (BMSA(D) 05492); *KwaZulu-Natal*: 21 Jesmond Road, Pietermaritzburg, 29°37'S 30°22'E, 730 m, suburban garden, 9.xii.2007, G.B.P. Davies (NMSA); 1♂ Ndumo Game Reserve, pan, 26°54.288'S 32°17.974'E, Grassy flood plain, 9–10.xii.2009, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19464); 2♂ Ndumu [Ndumo] Game Reserve, Camp & Riverine bush, 4–9.x.1982, J.G.H. Londt (NMSA); 1♂ Ndumu [Ndumo] Game Reserve, Ingwavuma District, Tongaland, 1–10.xii.1963, B.R. Stuckenberg & P. Stuckenberg (NMSA); *Western Cape*: 1♂ 10 km S Bredasdorp, 34°37'S 20°03'E, 12.x.1994, R. Danielsson (MZLU); 1♂ 10 km SE Vanrhynsdorp, along river, 14.x.1977, R.M. Miller (NMSA); 4♂ 3 km E Kaap Agulhas, 34°49'S 20°01'E, 12.x.1994, R. Danielsson (MZLU); 3♂ 32 km NE Clanwilliam, Brandewyn R. [River], 2–3.x.1977, R.M. Miller (NMSA); 1♂ 70 km E of Laingsburg, Dwyka River area, 33°06'S 21°35'E, 500 m, Dry Dwyka River area, 24.xi.1990, A.E. Whittington & J.G.H. Londt (NMSA); 1♂ Cedarberg, 3 km ESE Kriedowkrans, 32°22'S 18°59'E, 350 m, 6.x.1994, R. Danielsson (MZLU); 1♂ Cogman's Kloof, Ashton-Montagu Road, along river, 11.i.1983, P. Stabbins & R.M. Miller (NMSA); 1♂ De Hoop Nature Reserve, 34°27'S 20°25'E, 0–200 m, 10–13.x.1994, R. Danielsson (MZLU); 18♂ Kroonplanskloof, 10 km S Citrusdal, 32°40'S 19°01'E, 200–270 m, 4–8.x.1994, R. Danielsson (MZLU). ZIMBABWE: 1♂ 10 km SE of Harare, 19.ii.1997, J.W. Ismay, leg. J.C. Deeming (NMSA) (Previously NMW.Z.1981–001).

Distribution: Botswana, Democratic Republic of the Congo, Egypt, Ethiopia, Kenya, Mozambique, Namibia, Oman, Saudi Arabia, Senegal, South Africa, Sudan, Zimbabwe.

*Atherigona tigris* sp. n.

Fig. 61

**Etymology:** From the Latin *tigris* (tiger), after Tiger Falls, Royal Natal National Park, South Africa.

**Diagnosis:** This species is similar to *A. secrecauda* but differs from it in having the hypopygial prominence weakly bifurcate and not bilobate in the shape of two fused triangles. Whilst *A. tigris* has the trifoliolate process with a similar coloration, it differs structurally by not having a winglike hood and having the median piece without any emargination and with only a slight apical dilation.

**Description:**

*Male.*

**Measurements:** Body length: 3.782 mm; wing: 3.088 mm; *r-m* crossvein ratio: 0.427.

**Head:** Ground colour brown. All head setae and setulae infuscated. Occiput silver-grey dusted throughout with narrow median part glossy. Ocellar triangle silver-grey dusted. Frontal vitta infuscated. Frontal plate apically gold dusted around three pairs of proclinate frontal setae and basally silver-grey dusted around two pairs of orbital setae. Parafacial gold dusted, slightly wider than arista base at narrowest. Scape and pedicel ferruginous, postpedicel infuscated except for basal margins which are ferruginous. Arista infuscated. Palpus yellow; truncated and dilated with hyaline hairs.

**Thorax:** Ground colour dark. Postpronotal lobe golden dusted, with two setae and 11 setulae. Pleura silver-grey dusted. Proepisternum inconspicuous and gold dusted. Scutum grey dusted, with three weak 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and six discal setulae, one pair of subbasal setae and one pair of apical setae (subbasal pair 0.8× apical pair).

**Legs:** All legs yellow except for apical third of fore tibia and entire fore basitarsus which is slightly infuscated.

**Leg chaetotaxy:** Fore tarsi without any specialised chaetotaxy.

**Wings:** Hyaline except for slight brown smoky suffusion at apex of *Sc-R<sub>1</sub>*. Veins brown. Knob of halteres white, with stalk yellow. Calypters white.

**Abdomen:** All tergites yellow; tergite 1+2 immaculate; tergite 3 and 4 each with a pair of small round spots, equal in size, taking up less than a third of dorsal surfaces; tergite 5 immaculate. Hypopygial prominence weakly bifurcate. Trifoliolate process stem *ca.* 3× the length of the apical process; trifoliolate process infuscated except for bases of median piece and lateral plates, as well as hood and apical third of stem, which are hyaline; median piece linear with slight abrupt apical dilation in posterior view, strongly dilated in profile; lateral plates with inner lobes, appearing wider than median piece in profile; Epandrium with dark markings and surstylus entirely infuscated (paratypes without infuscation).

*Female.* Unknown.

**Holotype** ♂: SOUTH AFRICA: *KwaZulu-Natal*: Royal Natal National Park, 28°41.362'S 28°56.327'E, 1425 m, stream, y-wood, 10–13.xii.2004, M.B. Mostovski, Malaise trap (NMSA; Type no. 2512).

Paratypes: *KwaZulu-Natal*: 1♂ Royal Natal National Park, 7–11.iv.1951, Brinck & Rudebeck, insect trap (MZLU); 1♂ Royal Natal National Park, Tiger Falls area, 28°41.341'S 28°56.047'E, *Protea caffra* woodland, 17–18.ii.2010, A.H. Kirk-Spriggs, Malaise trap (BMSA(D) 19807).

Distribution: South Africa.

*Atherigona trapezia* van Emden, 1940

Fig. 66

*Atherigona trapezia* van Emden, 1940: 135, figs 4, 30, 48; Deeming 1971: 171, figs 108–110; Deeming 1987: 20.

Diagnosis: This species can be distinguished from others that also have Tergite 1+2 broadly infuscated by its wholly infuscated trifoliate process which is without inner lobes. The hypopygial prominence is stalked with lateral lobes.

Type material examined: Holotype ♂: UGANDA: Kigezi Dist. 18.xi.1934. B.M.E. Afr. Exp. B.M. 1935-203, Mabungo Camp, 6000ft [1829 m], J. Ford (NHMUK).

Other material examined: ETHIOPIA: 1♂ Alemaya, ix.1992, S. Gudeta (NMSA). SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Vernon Crookes Nature Reserve, near Umzinto, 30°16'S 30°36'E, 2–7.xi.2008, G.B.P. Davies, Sweep net (NMSA); 1♂ Dhliza Forest, Eshowe, Zululand, 5–6.iv.1960, B.R. Stuckenberg & P. Stuckenberg (NMSA).

Distribution: Burundi, Cameroon, Democratic Republic of the Congo, Ethiopia, Kenya, Madagascar, Nigeria, Rwanda, South Africa, Sudan, Tanzania, Uganda, Zimbabwe.

*Atherigona tritici* Pont & Deeming, 2001

Fig. 47

*Atherigona tritici* Pont & Deeming, 2001: 299, figs 5–10.

Diagnosis: See *A. rubricornis* for diagnostic information.

Type material examined: Holotype ♂: 'EGYPT: Beni Suef [Suef], Sids Agricultural Research Station, ex. Wheat deadheart, i–iii.1999, S.A.El Serwy, leg. Pont & Deeming, 1999' (NMWC).

Paratypes: EGYPT: 1♂ same data as holotype (NMSA) (Previously NMW.Z.1987–144). MALI: 1♀ Mourdiah, 3–12.x.1986, M. Matthews, J.C. Deeming (NMSA) (Previously NMW.Z.1987–144).

Type remarks: Paratype material examined was donated to the KwaZulu-Natal Museum (NMSA). The type deposition information is hereby updated.

Distribution: Botswana, Egypt, Ethiopia, The Gambia, Mali, Namibia, Nigeria, South Africa, Uganda, Yemen.

*Atherigona umbonata* sp. n.

Fig. 15

Etymology: From the Latin *umbo* (knuckle, knob), referring to the shape of the hypopygial prominence.

Diagnosis: This species is most similar to *A. aurifacies* but differs from it in having its hypopygial prominence quite different compared to that of *A. aurifacies* (Fig. 15c, d vs. Fig. 12c, d). The trifoliate process has the lateral lobes appearing tapered in posterior view, compared to those of *A. aurifacies* that are more rounded. The lateral lobes are also hyaline on their basal half compared to *A. aurifacies* that has them entirely infuscated (Fig. 12a vs. Fig. 15a).

Description:

*Male.*

*Measurements:* Body length: 4.278 mm; wing: 3.600 mm; *r-m* crossvein ratio: 0.418.

*Head:* Ground colour dark. All head setae and setulae infuscated. Occiput silver-grey dusted posteriorly and gold dusted laterally with narrow median part glossy. Ocellar triangle silver-grey dusted. Frontal vitta infuscated. Frontal plate silver-grey dusted with three pairs of proclinate frontal setae and two pairs of orbital setae; glossy around bases of setae. Parafacial gold dusted, at narrowest equal in width to arista base. Scape infuscated, pedicel darkly ferruginous, postpedicel infuscated with slight ferruginous basal edge. Arista infuscated. Palpus entirely infuscated; apex truncated and dilated, with hyaline hairs and yellow vertex.

*Thorax:* Ground colour dark. Postpronotal lobe gold dusted, with three setae and 13 setulae. Pleura gold dusted. Proepisternum inconspicuous. Scutum grey dusted, with three 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and nine discal setulae, one pair of subbasal setae and one stronger pair of apical setae (cannot compare length due to damage to apical pair).

*Legs:* All legs yellow except for forelegs with apical half of femur with slight mark, apical half of tibia and first two basal tarsi infuscated.

*Leg chaetotaxy:* Fore femur with one submedial posteroventral seta; fore tarsi without any specialised chaetotaxy

*Wings:* Hyaline, except for slight brown smoky suffusion at areas around *Sc-R<sub>1</sub>* and the humeral cross-vein. Veins brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen:* All tergites yellow; tergite 1+2 immaculate; tergite 3 with two medium sized dark-brown marks taking up just over two thirds of dorsal surface; tergite 4 with two small round markings, taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence knoblike (Fig 15c, d). Trifoliate process stem 2.2× the length of the apical process; basal quarter of median piece, basal half of lateral plates, hood and apical third of stem hyaline, the rest of process infuscated; median piece apically dilated, gradually dilating in profile, narrower than lateral plates; lateral plates without inner lobe, appearing tapered in posterior view. Surstylus without dark markings.

*Female.* Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Cathedral Peak, Didima, 28°57.000'S 29°14.395'E, 1422 m, 13–16.xii.2004, M.B. Mostovski (NMSA; Type no. 2513).

Distribution: South Africa.

*Atherigona univittata* Deeming & Overman, 1987

Fig. 9

*Atherigona univittata* Deeming & Overman, 1987: 118, figs 1–3.

**Diagnosis:** This species can be distinguished from most other species with an infuscated frontal vitta by its unusual infuscated ground coloured postpronotal lobe (as noted by Deeming & Overman 1987) in combination with an apically rounded median piece and the lateral lobes appearing almost the same size as the median piece.

Type material examined: Holotype ♂: 'KENYA: Kitale, 14.xi.1972, Overman, J.L.' (NHMUK).

Other material examined: SOUTH AFRICA: *KwaZulu-Natal*: 2♂ Ferncliff Nature Reserve, 29°33.2'S 30°20.5'E, 855 m, 5.xii.2004, M.B. Mostovski, light trap (NMSA); 1♂ Ntsikeni Nature Reserve, Swartberg District, 30°07'S 29°28'E, 1850 m, High altitude grasslands, 24–25.x.2006, G.B.P. Davies (NMSA).

Distribution: Kenya, South Africa.

*Atherigona valida* (Adams, 1905)

Fig. 67

*Coenosia valida* Adams, 1905: 207.

*Atherigona valida*: Deeming 1971: 170, figs 101, 102; Deeming 1979: 44.

Diagnosis: This species can be distinguished from others with an infuscated frontal vitta and yellow palpi by the truncated hypopygial prominence dorsally appearing in the shape of two fused, pointed triangles, slightly projecting. The trifoliate process in entirely infuscated with the median piece apically dilated, without any emarginations.

Type material: Type material housed in the University of Kansas, Museum of Natural History (UKMNH), but not seen.

Distribution: Burkina Faso, Guinea, Kenya, Mali, Nigeria, South Africa, Uganda, Zimbabwe.

*Atherigona vernoni* sp. n.

Fig. 56

Etymology: Named for the type locality, Vernon Crookes Nature Reserve. KwaZulu-Natal, South Africa.

Diagnosis: This species would key to *A. robertsi* Deeming in Deeming (1971) and Dike (1989a), but differs from it in having a roundly bifurcated hypopygial prominence compared to a knoblike structure. *A. vernoni* also has its median piece of the trifoliate process apically dilated, whereas *A. robertsi* has it filiform in posterior view.

Description:

*Male*.

*Measurements*: Body length: 2.821 mm; wing: 2.32 mm; *r-m* crossvein ratio: 0.407.

*Head*: Ground colour brown. All head setae and setulae infuscated. Occiput glossy on upper half, weakly dark grey dusted laterally. Ocellar triangle weakly dark grey dusted, subshining. Frontal vitta infuscated with slight ferruginous suffusion. Frontal plate for the most part dark grey, very weakly dusted, appearing glossy, with three pairs of proclinate frontal setae (apical pair's area surrounded by gold dusted surface) and two pairs of orbital setae. Parafacial gold dusted, narrower than arista base at narrowest. Scape, pedicel and postpedicel infuscated. Arista brown. Palpus yellow, appearing almost straplike.

*Thorax*: Ground colour dark. Postpronotal lobe golden dusted, with three setae and 8 setulae. Pleura gold dusted, Proepisternum inconspicuous and gold dusted. Scutum appearing brown with slight grey pruinosity, with three dark-brown 2-4 dorsocentral vittae, stopping before scutellum. Scutellum with same coloration as scutum, apically edge yellow; one pair of basal setae, one pair of discal setae and six discal setulae, one pair of subbasal setae and one pair of apical setae (equal in length).

*Legs*: All legs yellow except for fore basitarsus which appears darker than the rest of tarsi.

*Leg chaetotaxy*: Fore tarsi with 3rd and 4th segments from base each with long setulae dorsally, each being longer than the three apical tarsal segments combined.

*Wings*: Hyaline. Veins brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen*: All tergites yellow; tergite 1+2 immaculate; tergite 3 with a pair oblong dark markings taking up two thirds of dorsal surface; tergites 4 and 5 each with a pair of small brown spots taking up a third of dorsal surfaces. Hypopygial prominence roundly bifurcated. Trifoliate process stem  $1.7\times$  the length of the apical process; trifoliate light brown to hyaline with the exception of the basal half of stem, extreme apex of median piece, and posterior and lateral edges of lateral plates; median piece apically dilated in posterior view appearing almost triangular, linear in profile with apex curved; lateral plates without inner lobes, appearing wider than median piece in profile. Surstylus lightly infuscated at base and apex.

*Female*. Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Vernon Crookes Nature Reserve, Mthakati Valley,  $30^{\circ}17'S$   $30^{\circ}36'E$ , ca. 450 m asl, Forest understorey, lush shrubbery and herbage, 16.iii.2008, G.B.P. Davies (NMSA; Type no. 2514).

Distribution: South Africa.

*Atherigona zulu* sp. n.

Fig. 68

Etymology: Named for the province of KwaZulu-Natal, South Africa.

Diagnosis: This species keys to *A. secrecauda* in Deeming (1971) and Dike (1989a), but differs from it by having the hypopygial prominence weakly bifurcate as opposed to being bilobate and appearing as two fused triangles in dorsal view. The trifoliate process of *A. zulu* is also missing the winglike hood of *A. secrecauda*, as well as being more less abruptly dilated apically compared so *A. secrecauda* (Fig. 68b vs. Fig. 50b).

Description:

*Male*.

*Measurements*: Body length: 4.216 mm; wing: 3.312 mm; *r-m* crossvein ratio: 0.413.

*Head*: Ground colour brown. All head setae and setulae infuscated. Occiput grey dusted throughout with narrow median part glossy, laterally silver-grey dusted. Ocellar triangle grey dusted. Frontal vitta infuscated. Frontal plate grey dusted on basal third, gold dusted on apical two thirds with three pairs of proclinate frontal setae and two pairs of orbital setae. Parafacial gold dusted, as wide as arisal base at narrowest. Scape and pedicel ferruginous, postpedicel infuscated except for basal area. Arista infuscated. Palpus yellow, apex truncated and dilated with hyaline hairs.

*Thorax*: Ground colour dark. Postpronotal lobe gold dusted, with three setae and 13 setulae. Pleura entirely silver-grey dusted, except for bottom of katepisternum which is grey dusted; Proepisternum inconspicuous and gold dusted. Scutum grey dusted throughout, with three faint 2-4 dorsocentral vittae, stopping before scutellum. Scutellum grey dusted; one pair of basal setae, one pair of discal setae and ten discal setulae, one pair of subbasal setae and one pair of apical setae (subbasal and apical setae equal).



*Legs*: All legs yellow except for apical quarter of fore tibia and fore tarsi which are infuscated.

*Leg chaetotaxy*: Fore femur with one submedial posteroventral seta; dorsal surfaces of fore tarsi, except for basitarsus, with long setulae (at least as long as width of segments).

*Wings*: Hyaline. Veins light brown. Knob of halteres white with stalk yellow. Calypters white.

*Abdomen*: All tergites yellow; tergite 1+2 immaculate; tergite 3 with a pair oblong dark markings taking up two thirds of dorsal surface; tergites 4 with a pair of small brown oblong markings taking up a third of dorsal surface; tergite 5 immaculate. Hypopygial prominence bilobed. Trifoliate process stem 2× the length of the apical process; trifoliate process entirely infuscated except for stem and hood which are brown; median piece with strong apical dilation and bifurcated in posterior view, with slight apical dilation in profile with an overall slightly curved appearance; lateral plates with inner lobes, appearing wider than median piece in profile, but not in posterior view. Surstylus with slight infuscation at base and apex.

*Female*. Unknown.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Richards Bay, 28°46'S 32°04'E, 24.x.1994, R. Danielsson (MZLU).

Distribution: South Africa.

#### ACKNOWLEDGEMENTS

I am grateful to all the researchers, curators and collections managers at the various institutions for granting me access to collections and specimens, making this study possible. The staff at the KwaZulu-Natal Museum are thanked for their support, in particular Drs Mike Mostovski, Dai Herbert and Mr Luthando Maphasa. Drs John Deeming, Ray Miller and Marcia Couri are thanked for their input on the original manuscript.

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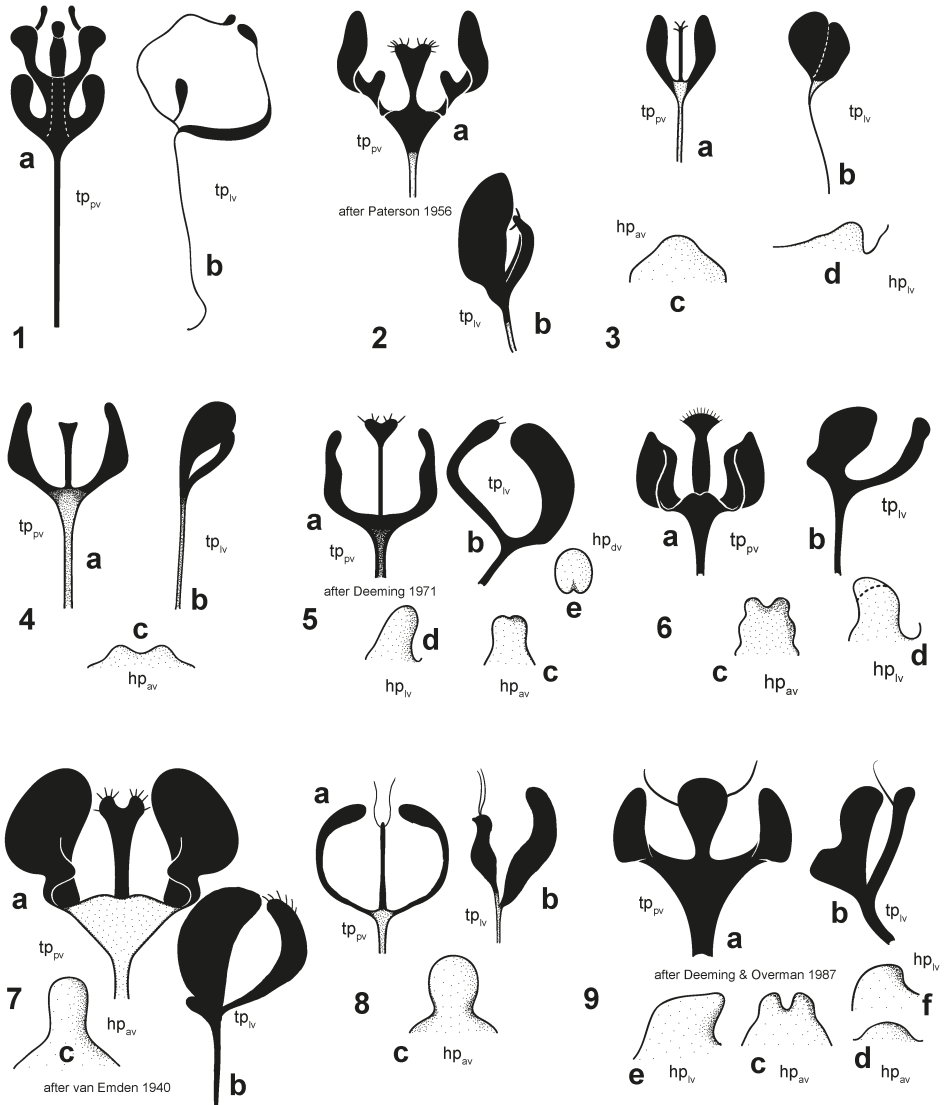
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TABLE 1

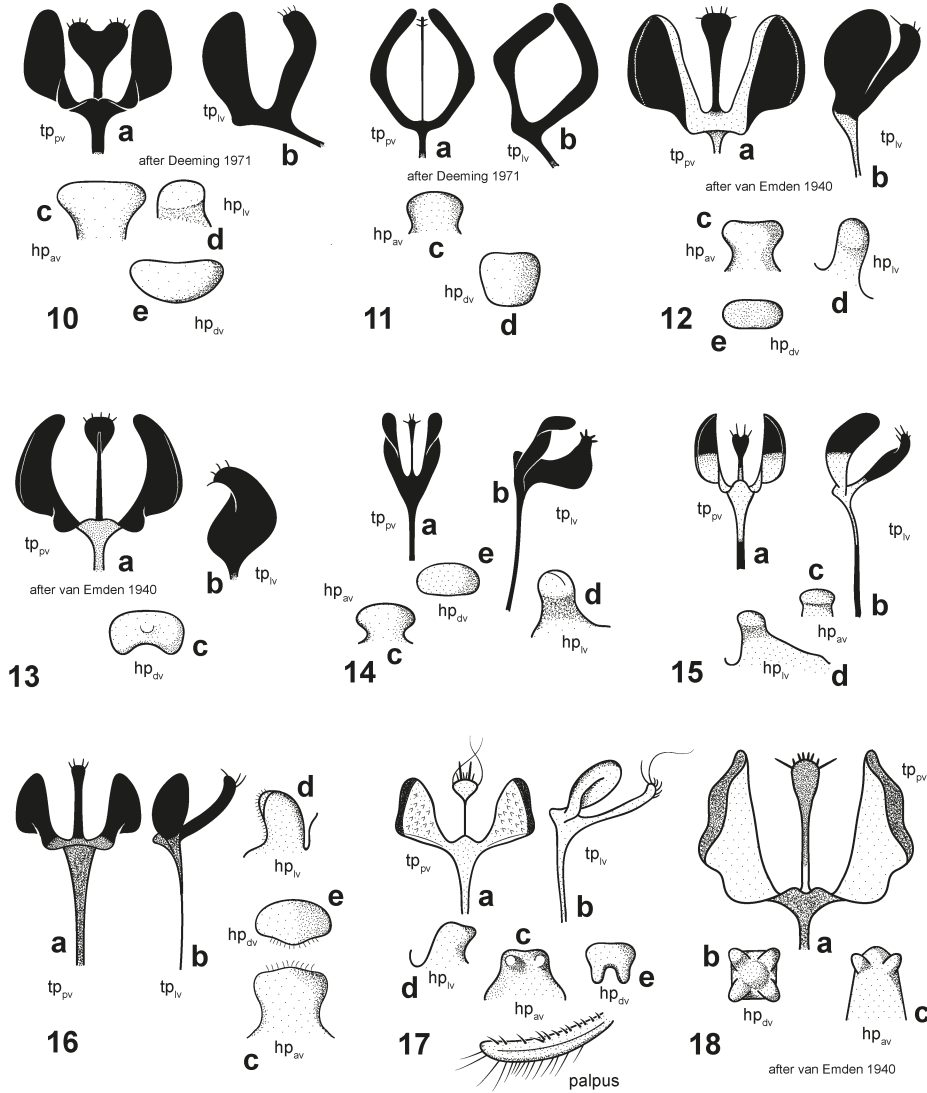
The number of new and revised species of Afrotropical *Atherigona s. str.* recorded by author and reference source. Species numbers described from South Africa are listed separately.

New species*	Revised species	Described from SA	Reference
1			Meigen 1826
2			Wiedemann 1830
1			Macquart 1851a
1			Loew 1852
1			Thomson 1869
1			Rondani 1871
1			Karsch 1888
1			Stein, in Becker 1903
2			Adams 1905
1			Stein 1906
1			Bezzi 1908
3			Stein 1910
7		1	Stein 1913
1			Stein 1914
1			Villeneuve 1922
3	5		Malloch 1923
3			Séguy 1938
23	5		Emden 1940
1			Séguy 1955
3	2		Emden 1956
1			Paterson 1956
1	1		Emden 1958
1			Emden 1959
1			Hennig 1963
1			Steyskal 1966
1			Pont 1969
21	31		Deeming 1971
1			Deeming 1972
	2		Deeming 1975
2			Deeming 1977
10	7		Deeming 1979
9	7	1	Deeming 1981
1			Deeming & Overman 1987
6	4		Deeming 1987
4			Dike 1989a
3		1	Dike 1989b
	2		Deeming 2000
1	1		Pont & Deeming 2001
3			Couri, Pont & Penny 2006
25	2	25	Present paper
<b>150</b>	<b>69</b>	<b>28</b>	

\*All historically described as new species. Some have since been synonymised.

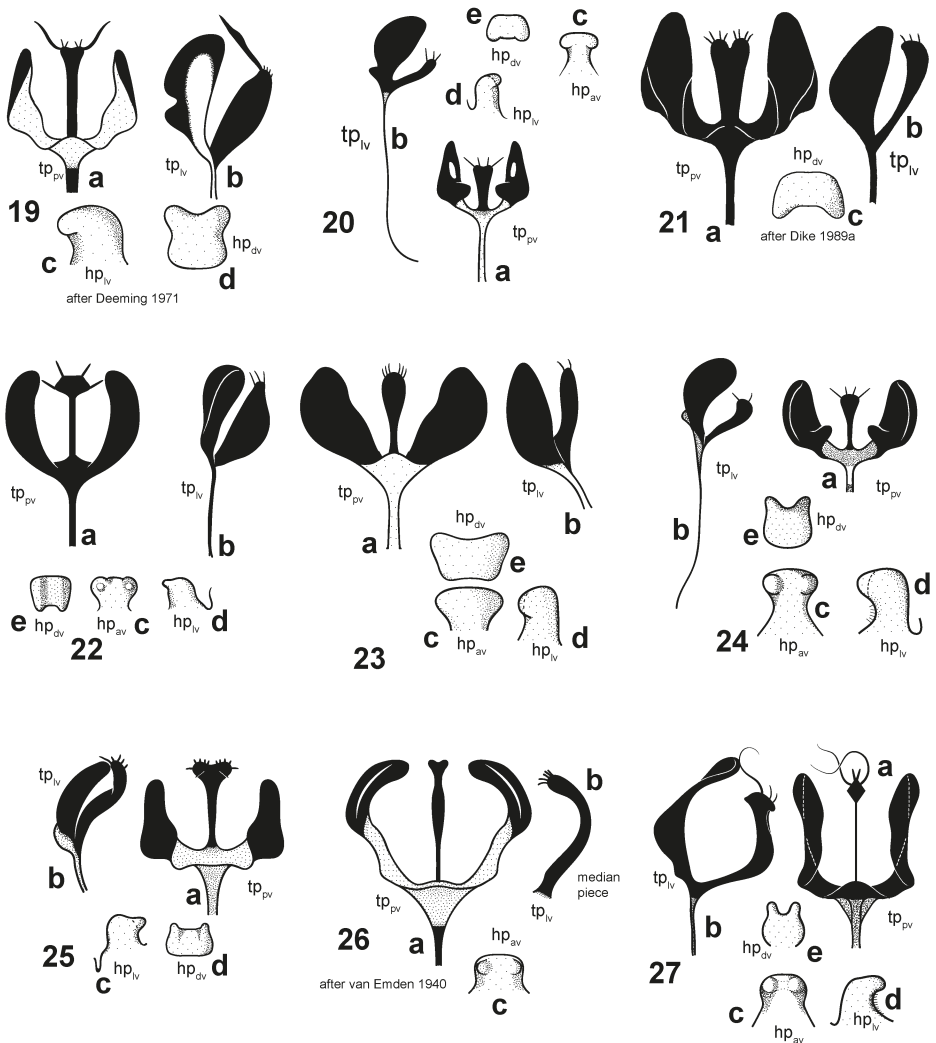


Figs 1–9. *Atherigona* spp.: trifoliate process and hypopygial prominence of (1) *A. divergens* Stein; (2) *A. tetrastigma* Paterson; (3) *A. parviclivis* sp. n.; (4) *A. parvihumilata* sp. n.; (5) *A. angulata* Deeming; (6) *A. pulla* (Wiedemann); (7) *A. laevigata* (Loew); (8) *A. bimaculata* Stein; (9) *A. univitatta* Deeming & Overman. Not to scale.

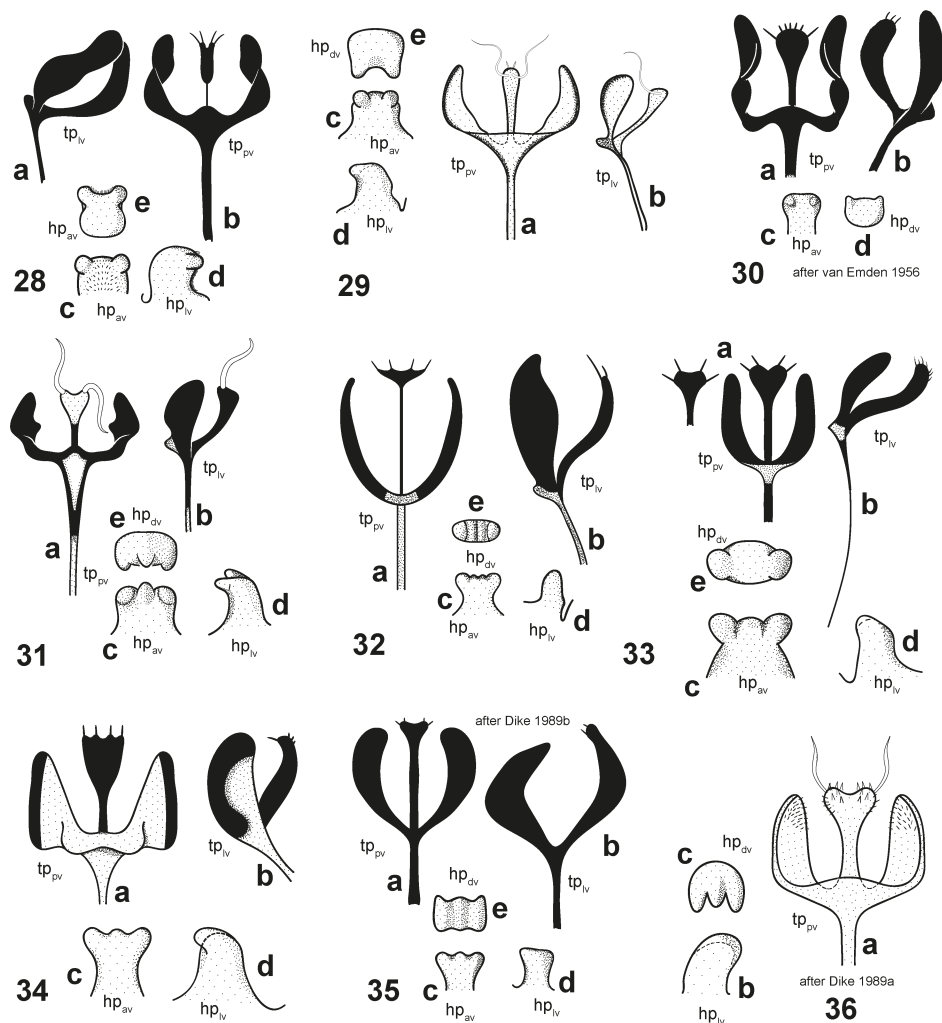


Figs 10–18. *Atherigona* spp.: trifoliate process and hypopygial prominence of (10) *A. nigrapicalis* Deeming; (11) *A. longifolia* van Emden; (12) *A. aurifacies* van Emden; (13) *A. griseiventris* van Emden; (14) *A. capitulata* sp. n.; (15) *A. umbonata* sp. n.; (16) *A. flavifinis* sp. n.; (17) *A. heteropalpata* sp. n., also palpus; (18) *A. aster* van Emden. Not to scale.

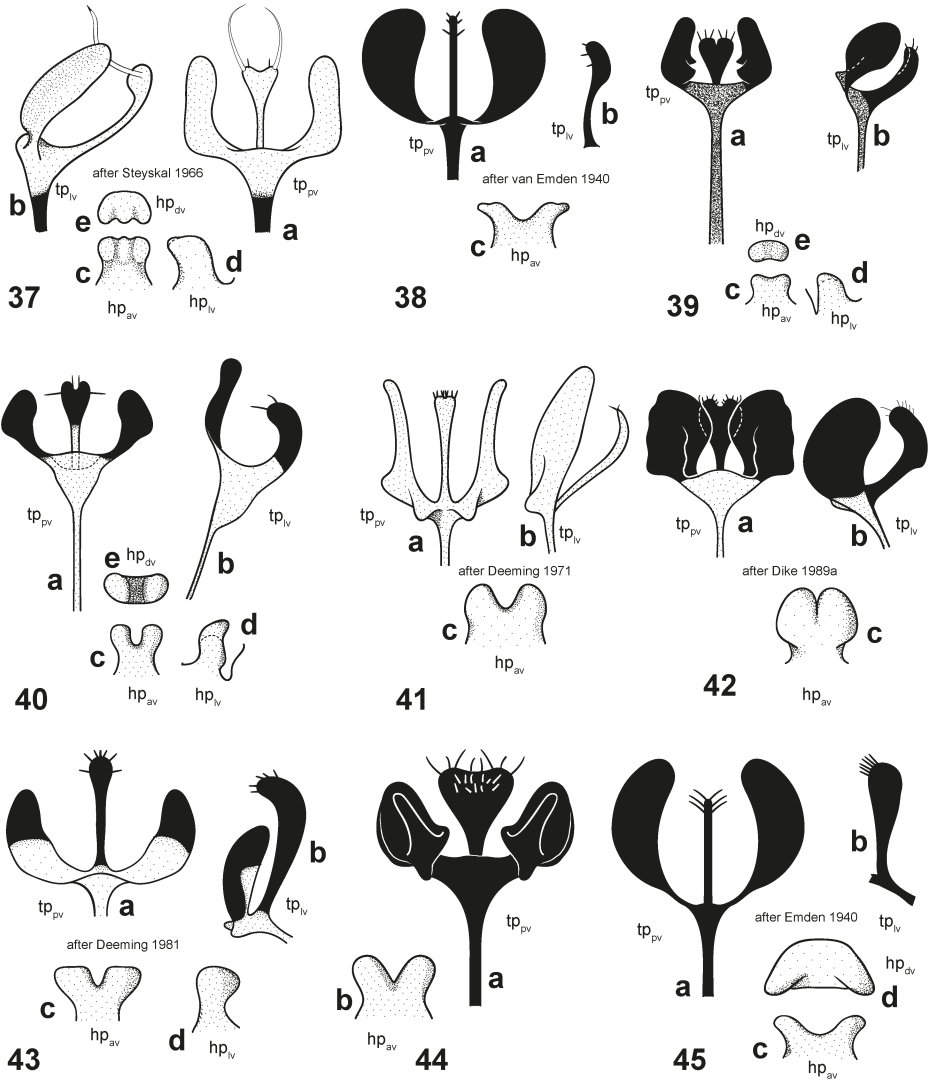




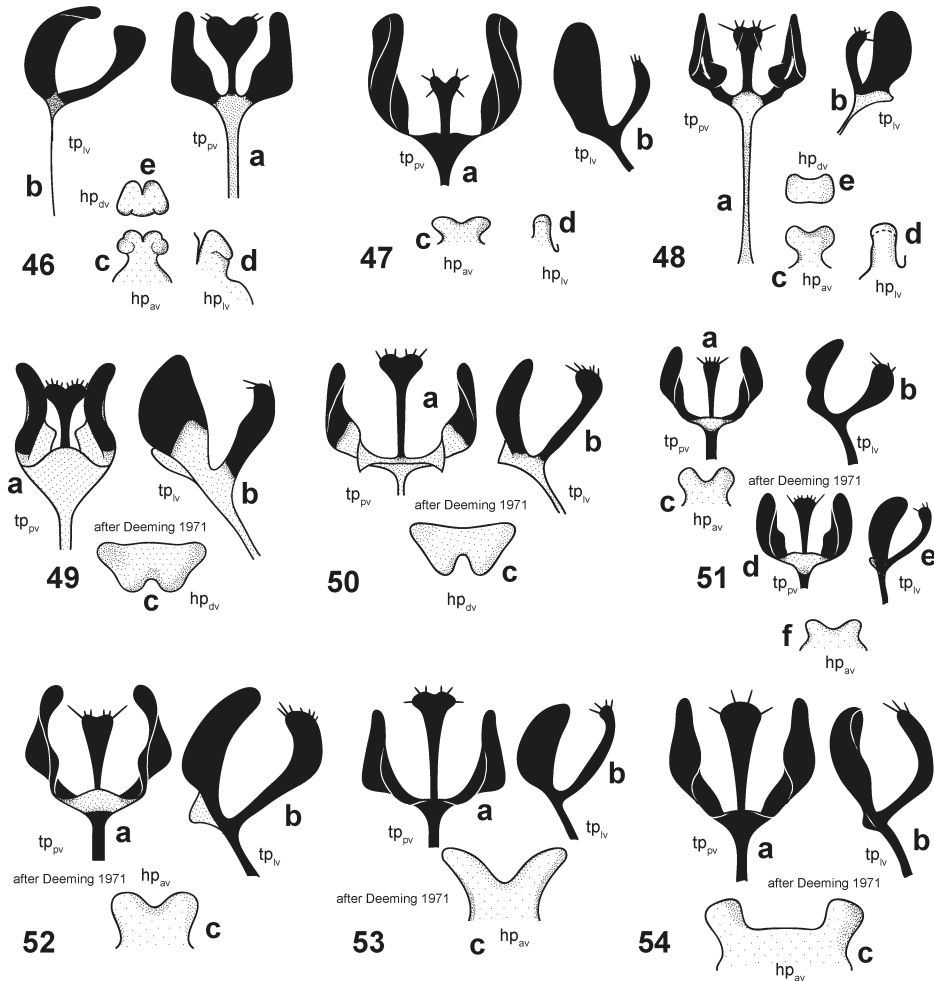
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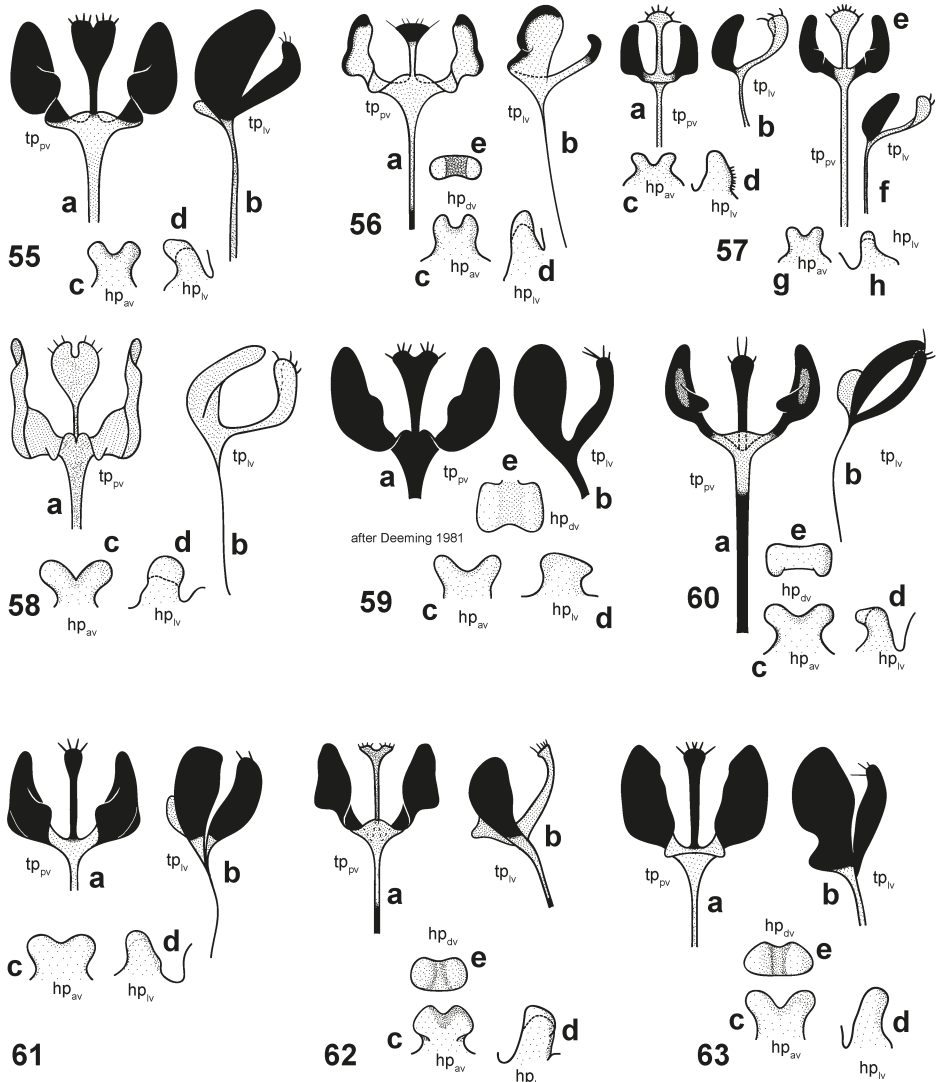
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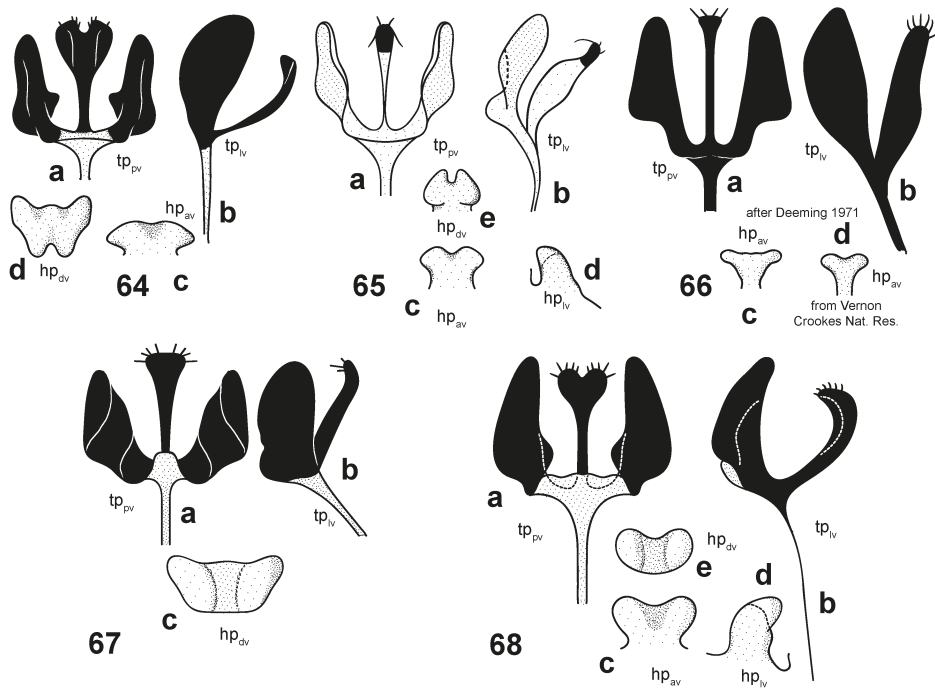
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