

O. W. RICHARDS

Imperial College of Science and Technology - London

New species of Sphaeroceridae (Diptera) found with Driver
Ants (Dorylinae) by S. Patrizi and F. Meneghetti.

I have been much indebted to Marquis S. PATRIZI for the opportunity to examine some flies which he collected in Kenya in association with driver ants of the genus *Anomma*. He also observed a fly very similar to one of the new species here described associating with the same genus of ants in Abyssinia and he kindly allows me to publish the beautiful drawing of this species which he made on the spot.

Safaria gen. n.

Character in general those of *Sphaerocera* Latr. except: Inner orbit produced into an angular, warty prominence at the centre of the dorsal eye-margin and in a second much smaller one (not shown in DUDA's figure, 1925: fig. 1) on the occiput; central area of face depressed with an approximately pentagonal raised margin, as in *S. crenata* Mg. etc., but with a strong obtuse central heel on the upper two-thirds; thorax at the sides with the humeri and an anterior and posterior area behind the suture each separately convex, mid-dorsal profile also regularly and very strongly convex, central area with four complete straight rows of backwardly curved, stout black spines with short whitish bristle-like structures at their tips, surface between these rows weakly shining, very finely granulate but without trace of warts. Abdomen abnormal, male third sternite with a very large process which can be apposed to the greatly incurved genitalia; female with a pair of prominences on the posteriorly narrowed fifth tergite.

Type of the genus *S. forcipata* sp. n.

In the structure of the face, in the very large clypeus and in the very distinct rows of wart-like structure on the thorax, the species of this genus show affinities to *Sphaerocera crenata* Meigen and its allies, but differ in having prominences on the head, in the convex thorax with regular rows without intervening scattered warts, and in the abdomen. Also in the myrmecophilous habit.

Safaria forcipata sp. n.

Agrees in every particular with the description of *Sphaerocera cornuta* Duda, 1925 except: anterior fronto-orbital prominence possibly somewhat higher and more angular, the posterior one is mentioned in DUDA's description though not shown in his figure. Antennae separated by a raised, anteriorly somewhat narrowed area bearing a deep longitudinal furrow. Eyes circular. Pteropleurite with a stout spine. Mesopleuron with a vertical row of about six small warts at the level of the wingroot and another row parallel to it but a little more anterior.

Abdomen in female (fig. I) with first segment short and rather narrow, second broadening considerably and about three times as long, third and fourth of same length as second but not clearly separated from one another, fourth narrowing a little posteriorly, surface finely granulate, a little shining, especially on the disk, lateral quarter somewhat cal-

lose; fifth connected to the fourth by a wide membrane, about half as wide and nearly twice as long as the fourth, somewhat narrowed posteriorly where it bears two hemispherical prominences; sixth segment about one-fifth as long, approximately crescentic and fitting round end of fifth; first sternite, as always, reduced, second very short, third about quadrate, fourth one-quarter broader than long, these sternites all connected to tergites by

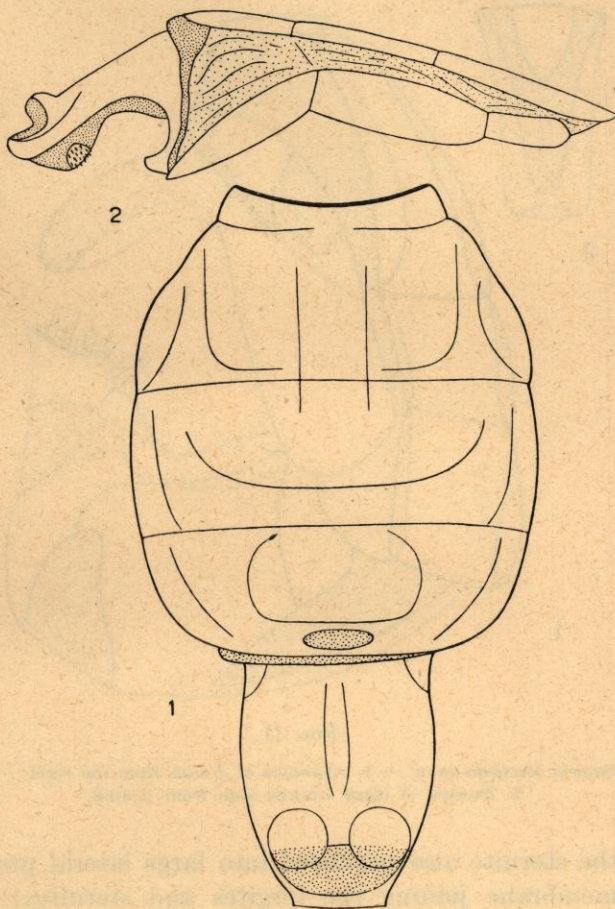


FIG. I.

Safaria forcipata sp. n. — 1. Abdomen of ♀ in dorsal view. —
2. The abdomen seen from the right side.

a wide pale membrane; fifth sternite reflexed so as to be almost at right angles to the end of the fourth, produced into a large conical central knob apparently apposable against two brown warty knobs on the membranes of sixth sternite.

Abdomen in male (fig. II, III 1) with first four tergites as in female; fifth ring-like, half as long as fourth from which it is separated by a wide

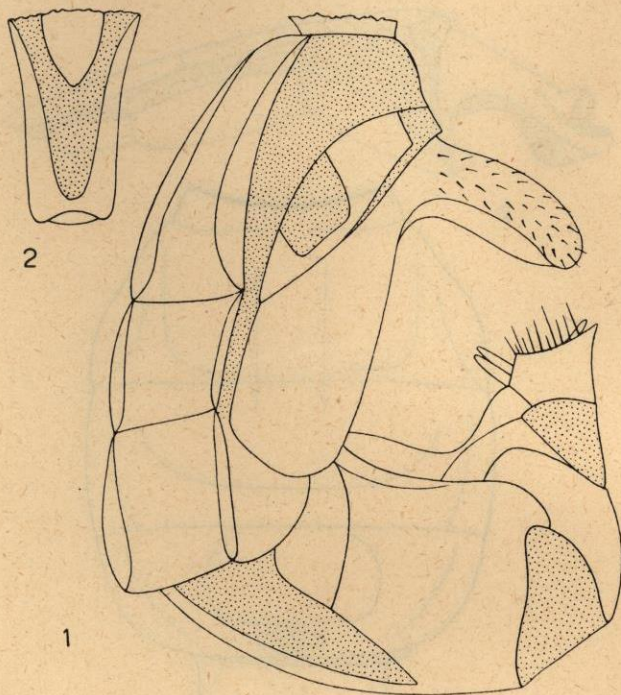


FIG. II.

Safaria forcipata sp. n. — 1. Abdomen of ♂ seen from the right. —
2. Process of third sternite seen from behind.

the sternite also produced into large lateral processes which lie in the wide membrane joining the tergites and sternites; fourth sternite semi-elliptic (narrowed forwards) deeply hollowed out, separated by wide membrane from the third; fifth flat, about as long as broad. Black, a little shining where not warty, mesopleuron with a triangular patch of grey tomentum above and behind the fore coxae; legs yellow, tibiae and tarsi a little darker, distal half of femora indefinitely brown; halteres whitish-yellow; wings light greyish; female with a transverse oval reddish patch before end of fourth tergite; length 3.0 - 3.5 mm.

Kenya : Nairobi, associating with *Anomma* (MENEGHETTI) type ♂ 10.xii.1944; allotype ♀ 15.xii.1944; paratypes 6♂♂ (one headless) 1♀ 4-17.xii.1944, 4♂♂ 30.x.42.

pale membrane, sixth squarish in dorsal or lateral view, genitalia enlarged, bent under abdomen so as to extend to centre of third tergite, ending in two spikes; these spikes are at the dorsal end of a white membranous depression bounded laterally by sharp keels but unenclosed ventrally above the forceps; the keels bear a row of bristles; forceps short, blunt, straight, shining brown; first and second sternites invisible, third produced into a large process apposable against the genitalia, end of process truncate but a little hollowed out, shining, anterior surface with scattered short pale bristles,

2♂♂ 1♀ paratypes will be deposited in the collection of the British Museum the other specimens, including the type, in the «Istituto di Entomologia» of Bologna University.

Safaria chelata sp. n.

Apparently identical with *S. forcipata* except in the male characters. Fourth tergite posteriorly widely but shallowly emarginate. Dorsal margin of genitalia (fig. III, 3) not produced into two spikes, keels bounding the membranous depression less sharp, similarly surmounted by a row of long

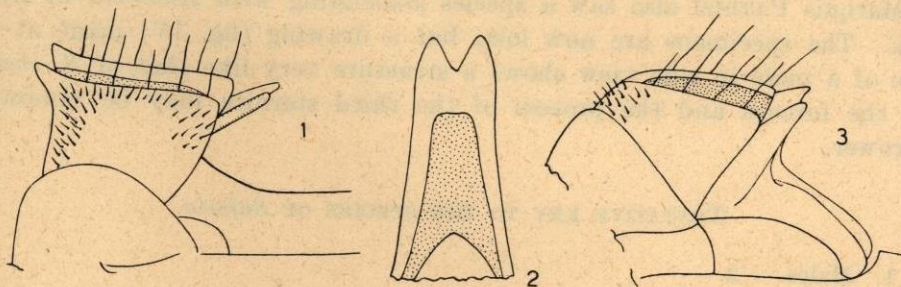


FIG. III.

Safaria forcipata sp. n. ♂ — 1. Genitalia seen from left. — 2. *Safaria chelata* sp. n. ♂ Process of third sternite seen from behind. — 3. *Safaria chelata* sp. n. The genitalia, seen from the left side.

bristles, depression closed ventrally by a pair of converging blunt shining triangular processes which seem to be dorsal projections from the forcipces; forceps brown, much longer and stouter, as long as rest of genitalia; process of third sternite (fig. III, 2) narrower and, in side view, thinner, emarginate at end and produced into two distinct though somewhat blunt points.

Colour similar, but mesopleuron apparently without the patch of tomentum. Length 3.5 mm.

Type ♂ Kenya: Londiani, vii.1944. (S. PATRIZI).

In the collection of the «Istituto di Entomologia» of Bologna University.

Safaria cornuta (Duda, 1925).

It is possible that the warts on the mesopleuron and the spike on the pteropleurite were present although not mentioned in the description; according to DUDA, the antennae almost touch one another; in the two species described above they are separated by fairly broad process bearing a central furrow; in view of the great accuracy of DUDA's work, it is perhaps hazardous to suggest tath he mistook the sides of the process for part of the antennae and that the antennae were really more widely separated than he suggests. DUDA saw three females and no male. In his species, the

fifth tergite is described as long as the fourth, much narrowed posteriorly, with two small but quite distinct knobs at the hind margin; no special features are mentioned for the sternites; his specimens were preserved in spirit and this may explain slight differences in colour. Since DUDA's specimens were collected at Stanleyville by REICHENSPERGER and were received through Father H. SCHMITZ, it is probable that they had some relation to ants, though this is not noted in the description.

Safaria sp.

Marquis PATRIZI also saw a species associating with *Anomma* in Abyssinia. The specimens are now lost, but a drawing (fig. IV) made at the time of a male in side view shows a structure very like that of *S. chelata* but the forceps and the process of the third sternite may be somewhat narrower.

TENTATIVE KEY TO THE SPECIES OF *Safaria*.

1. Males. 2.
Females. 3.

2. Dorsal margin of genitalia produced into two spikes; forceps small, much shorter than the main part of the genitalia; process of third sternite a little hollowed out at end but essentially truncate. *S. forcipata* sp. n.

— Dorsal margin of genitalia not produced into spikes; forceps longer and stouter, about as long as main part of genitalia; process of third sternite bifid. *S. chelata* sp. n.

3. Fifth tergite much longer than the fourth, with two large rounded knobs at its posterior margin: Hind margin of fifth sternite produced into a triangular process. *S. forcipata* sp. n.

— Fifth tergite as long as the fourth, with two small knobs. Hind margin of fifth sternite apparently simple. *S. cornuta* (Duda)

Acuminiseta Duda, 1925.

DUDA founded this genus for six species of which four were oriental, one S. American, and one African. The last named is the type of the genus (designation of RICHARDS, 1930) and five specimens were found seated on a species of *Julus*, at Brazzaville. The habits of the other species are unknown. DUDA points out the difficulty of separating the genus from *Anommonia* Schmitz, 1917. The two originally described species of this genus were associated with *Anomma* in the Cameroons but DUDA describes a third species of unknown habits from the East Indies. DUDA felt that it was better to keep the species known to be associated with ants separate

from those of which the habits were mainly unknown. He retained *Anommonia* for species with a process or a very strong bristle at the corner of the second abdominal tergite.

The first species obtained by Marquis PATRIZI apparently had no distinct process on the second segment (1) but was found associating with *Anomma*.

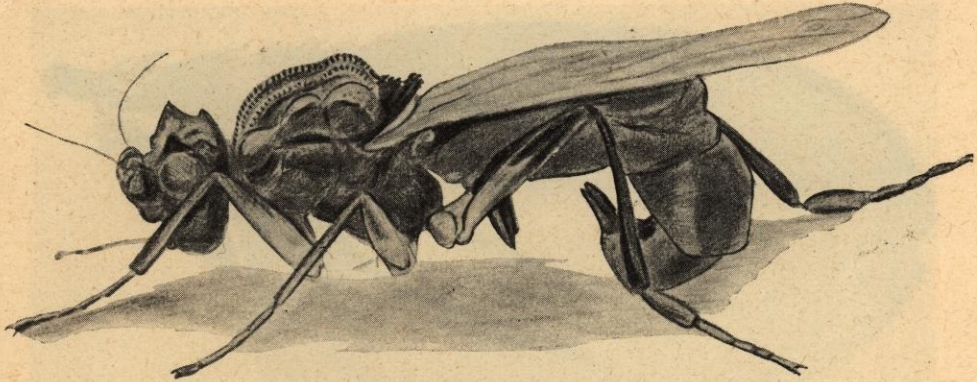


FIG. IV.

Safaria sp. ♂ of the Abyssinian (Drawing by Marquis PATRIZI).

The second species has a small process not visible in dried material. The boundary between the two genera becomes therefore even more obscure but they are retained for the present since a proper revision would require the re-examination of all the species.

Acuminiseta Patrizii sp. n.

Male. Shining black, pleura and legs duller brown; stalk of halteres pale yellow; wings slightly infuscate; length 1.7 mm. Facial knob little projecting, not visible from the side. Four or five small interfrontal bristles, other head bristles normal but postverticals parallel not convergent, ocellar bristles somewhat more divergent than usual, inner orbits and frontal triangle more shining than the intervening areas. Eyes rather small, somewhat elliptic, long axis vertical, width of jowls a little more than half the height of the eye, jowlar bristle long, incurved. Antennae with rather dense pale pubescence, third segment conical, one and a half times as long as broad, with a small sensory bristle at the tip, arista inserted a little before the tip, basal segment a little thickened, arista twice as long as an-

(1) It would be necessary to macerate the abdomen to be certain there was not a small process. There is certainly nothing conspicuous.

tenna with moderately long cilia. Prescutellar dorsocentral bristle long and stout but no others developed, microchaetes of mesonotum numerous but not arranged in rows but anteriorly about twelve in the dorsocentral region, one sternopleural bristle, four long scutellar bristles. Fore and hind legs normal; mid femur with only the usual apical anterior bristle; mid

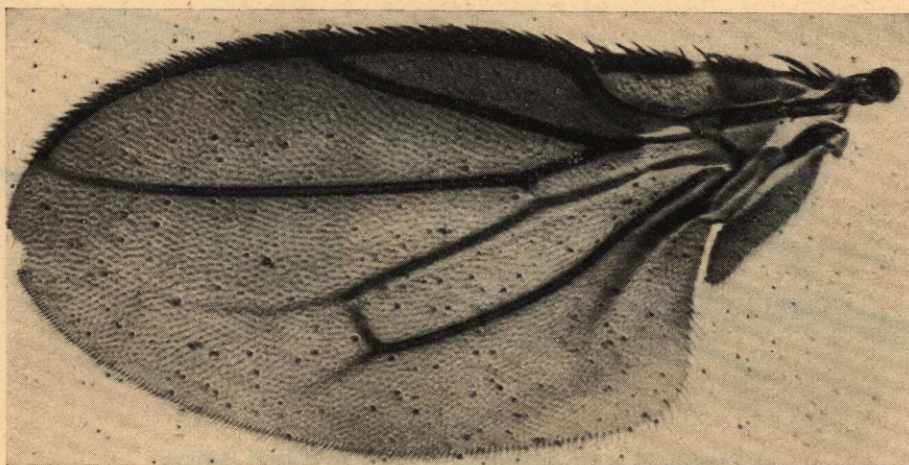


FIG. V.

Acuminiseta Patrizii sp. n. — The wing (Photo J. W. SIDDORN).

tibia with an antero dorsal bristle at $1/3$, a posterodorsal bristle just above $1/2$, a dorsal bristle at $4/5$, a mid-ventral bristle but no apical ventral bristle; mid basitarsus rather more than half as long as the tibia, with very short bristles. Wings (fig. V) rather broad, with costa not overpassing R_{4+5} ; second sector about as long as third, first sector with short bristles only; R_{2+3} nearly straight, at its end moderately bent onto the costa; R_{4+5} at first nearly straight, then distinctly bent forwards, ending a little in front of the wing-tip; hyaline part of M_{1+2} after the intermedian cross-vein strongly bent forwards but not reaching the margin, posterior corner of median cell weakly angular, M_{3+4} slightly produced; anal vein regularly and rather strongly curved posteriorly; alula narrow, pointed. Abdomen apparently normal, somewhat thickened posteriorly but with no process or strong bristle on the second segment, a small upcurved hook visible, projecting from the genitalia.

Type ♂, paratype ♂ Kenya: Nairobi, 6.xii.1942 (MENEGHETTI). Type in the « Istituto di Entomologia » of Bologna University, paratype in the collection of the British Museum.

In DUDA's key (1925: 121) it would run to couplet 2; it differs from the East Indian *A. elegantula* Duda in the less curved R_{4+5} and the black head; from the S. American *A. prominens* Duda in not having a strongly

protruding face. *A. pallicornis* (Villeneuve) the only described African species has spotted wings; the other three Oriental species all have R_{4+5} straight. It would differ from species of *Anommonia* in lacking a process from the corner of second abdominal tergite but this might not be easy to see in dried specimens. *Anommonia appendicigera* Schmitz and *A.*

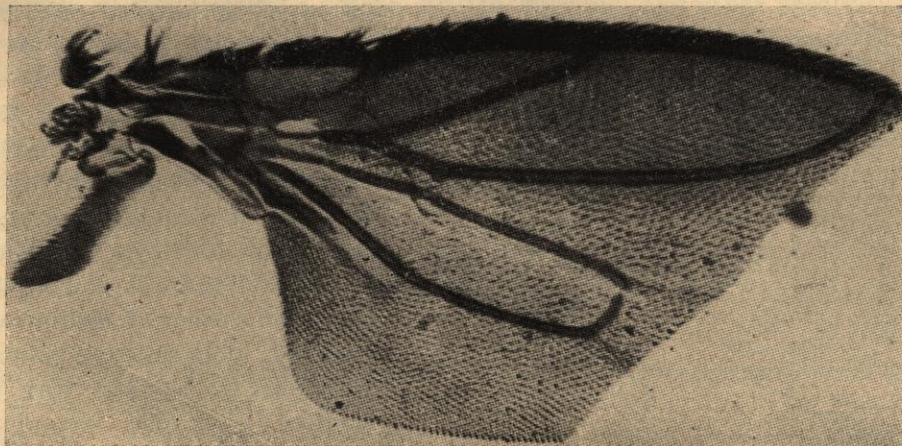


FIG. VI.

Anommonia nudipes sp. n. — The wing (Photo J. W. SIDDORN).

schwabi Schmitz, however, have 3 anterodorsal and 4 posterodorsal bristles on the mid tibia; *A. flavifrons* Duda has its head mainly yellow and *A. nudipes*, described below, has only two small bristles on the outer side of the mid tibia.

Anommonia nudipes sp. n.

Male and female. Shining black, pleura and legs dull brown; stalk of halteres yellow; wings distinctly brown; length 1.4 mm. Facial knob not visible in side view. Four or five small interfrontal bristles, postverticals very short, a little convergent, ocellar bristles more divergent than in *Leptocera* inner orbits and frontal triangle rather more shining than intervening areas. Eyes rather small, elliptic, long axis vertical, width of jowls a little more than half height of eye, jowlar bristle long incurved. Antennae with rather dense pale pubescence, third segment subconical, somewhat longer than broad, with a sensory bristle at tip, arista inserted a little before the tip, basal segment a little thickened, arista $2\frac{1}{2}$ -3 times as long as antenna, with moderately long pale cilia. Thoracic bristles unusually stout, prescutellar dorsocentral bristle long and stout but no others developed, prescutellar pair of acrostichals a little enlarged, microchaetae of

mesonotum in fairly regular rows, 6-8 in the dorsocentral region anteriorly, one sternopleural, four long scutellar bristles. Fore and hind legs normal; mid femur with only the usual apical anterior bristle; mid tibia with traces of a dorsal bristle at $1/2$ (in ♀), and an apical ventral bristle; legs rather long, mid basitarsus about half as long as tibia, with very short bristles.

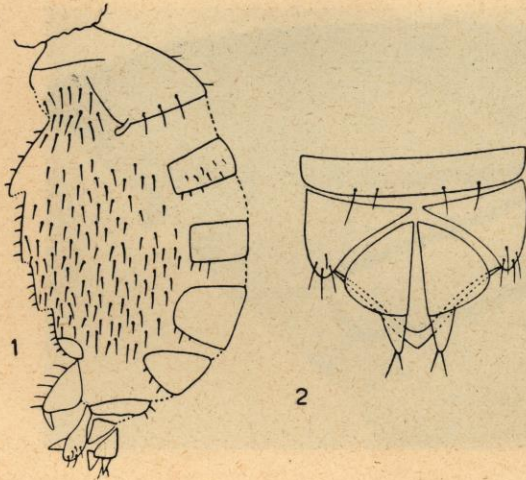


FIG. VII.

Anommonia nudipes sp. n. ♀ — 1. The abdomen seen from the left. — 2. Dorsal view of apex of abdomen.

Wings (fig. VI) with tip broken off in all specimens, costa not overpassing R_{4+5} , second sector three-quarters as long as the third, first sector only with short bristles; R_{2+3} almost straight, very little bent onto the costa; R_{4+5} rather strongly and regularly bent forwards, evidently ending well in front of wing-tip; posterior corner of median cell rounded; alula narrow, pointed. Abdomen in female with the tergites after the second all rather reduced, membrane, especially in the pleural region, correspondingly enlarged; in a macerated specimen it can be seen (fig. VII 1) that the first tergite is transverse with a strong lateral line, the second is about twice as broad as long with a small sclerotized projection from each posterior corner, the third is very transverse and hardly more than one-third as long as the second, the fourth is a little longer and shallowly emarginate posteriorly, the fifth is fully twice as long as the third and rounded posteriorly, the sixth is about as long as the third but only half as broad; the rest of the tergites form a complex (fig. VII 2) supporting the small triangular cerci which each bear two very small bristles; the enlarged pleural membrane bears numerous backwardly directed bristles, more or less arranged in vertical rows, about 12 bristles in the row in the central region; ventrally five simple sternites are visible, the second and third longer than the others, and a sixth which is more convex transversely and more sclerotized and bears a small bilobed flap in the centre of its posterior margin; the part of the abdomen after the fifth segment is considerably more sclerotized; there are three spermathecae, one on a long thin stalk, the other two connected by short stalks to a common stem. Male abdomen with second tergite produced into a small process at its posterior corner, as in female; other tergites not conspicuously modified; pleural membrane considerably enlarged with 4-5 rows of backwardly directed microchaetae; genitalia without special features, in the dry

state appearing a little swollen, sometimes with a small upwardly curved black hook visible; in a macerated specimen two small spikes can be seen projecting from the centre of the posterior margin of the fifth sternite.

Type ♂ Kenya: Nairobi, 9.iv.1944. (MENEGHETTI). Allotype ♀, Nairobi, 23.i.1944 (MENEGHETTI). Paratypes, 1♂ with data of type, 2♀♀ (one headless) 1♂ with date of allotype, 1♀ 15.xii.1944. One male and two female paratypes in the collection of the British Museum, the other specimens in the collection of the « Istituto di Entomologia » of Bologna University.

Differs from the three other species of *Anommonia* in having only two small dorsal bristles on the mid tibia. The same character distinguishes it from any species of *Acuminiseta*, except possibly *A. flavicornis* Duda, of Annam, in which R_{4+5} is straight.

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