

ON SOME EGG-PARASITES FROM AFRICA.

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Family EUPELMIDAE.

Anastatus blattidarum, sp. n. (fig. 1, *a* & *b*).

♀. Head shining green; face and front with purplish shine. Thorax orange-yellow, with a small black spot on each side of the pronotum; mesopleurae and propodeon slightly brownish. Abdomen aeneous-black, with dark green shine near the end; first segment (except two brown spots at the sides) and second segment (except hind border) whitish. Valvae of ovipositor white. Antennae brown, with scape and pedicel yellow. Wings dark brown, with the base and a bent stripe in the middle hyaline. Legs brownish yellow, with the trochanters and tip of tibiae and tarsi clearer yellow; base of hind coxae and a stripe on the inner side of middle and hind femora dark brown.

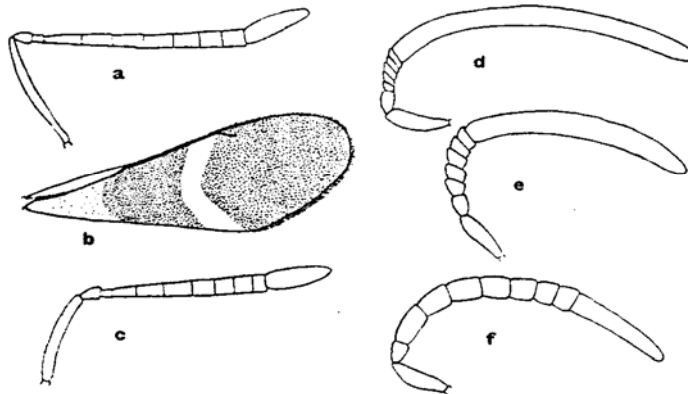


Fig. 1. *Anastatus blattidarum*, sp. n., ♀: *a*, antenna; *b*, forewing. *Anastatus bifasciatus*, Fonsc., antenna of: *c*, ♀; *d*, var. *longiclava*, n., ♂; *e*, var. *antestiae*, n., ♂; *f*, var. *hancocki*, n., ♂.

♀. Head finely shagreened, more rugulose in the antennal furrow, and with very fine longitudinal striae behind the eyes and the cheeks. Antennal furrow surrounded by a small carina. Middle ocellus situated above the antennal furrow; lateral ocelli very near the eyes. Cheeks almost as long as the eyes, with a longitudinal furrow between the eye and the mandible. Antennae inserted a little under the level of the lower margin of the eyes. Scape narrow, elongate, as long as the annellus and the three first funicle joints together; pedicel not broader than scape, more than twice as long as broad; annellus small, almost quadrate; 1st funicle joint narrower than the pedicel and almost twice as long; the following joints gradually increasing in breadth and diminishing in length, but all longer than broad, the 6th and 7th only slightly so; club with three joints, not much broader than the funicle, not quite as long as the three preceding joints together. Thorax almost entirely smooth and

shining; only the anterior part of the median lobe of the mesonotum dull and ruguloso-punctate. Scutellum and axillae very finely longitudinally striate; axillae separated from each other, on the hind margin of the mesonotum, by a length equal to the third of their breadth. Propodeon very short in the middle, the lateral margins somewhat inflated. Wings with the marginal vein as long as the submarginal; the postmarginal vein about half the length of the marginal; the stigmal vein shorter than half the length of the postmarginal. The hyaline band, under the distal third of the marginal vein, has the inner margin regularly curved and the outer margin angulated in the middle. Legs long and slender; femora and tibiae a little thickened near the tip; median tarsi with small black teeth under the metatarsus and at the end of the 2nd and 3rd joints; the other tarsi more elongate, the anterior longer than, the posterior as long as, their tibiae. *Abdomen* smooth, finely shagreened, as long as the thorax, narrow at the base, widening to the 5th segment, where it is as broad as the thorax, then strongly narrowed to the tip. Ovipositor only slightly protruding.

Length, 2.6 mm.

ANGLO-EGYPTIAN SUDAN: Khartoum, 2 ♀♀, 5.i.1925, 1 ♀, 3.viii.1924 (*R. Cottam*).

Host. Bred from an egg-case of a cockroach.

Another species, *A. blattidifurax*, Girault, is known to attack cockroach-eggs in Australia. It differs from the African species especially in the coloration, the body being entirely dark metallic blue, except for a white band at the base of the abdomen, and the forewings are infuscated from the bend of the submarginal vein to the tip, with only a narrow curved transverse stripe in the middle. *A. blattidarum* may be easily recognised by its green head, reddish thorax, and aeneous abdomen, and by the slender antennae and legs.

***Anastatus bifasciatus*, Fonsc.**

Cynips bifasciata, Fonscolombe, Ann. Sc. Nat., xxvi, 1832, p. 294.

Anastatus bifasciatus (Fonsc.), Ruschka, Verh. zool.-bot. Ges. Wien, 1921, p. 264;

Bolivar y Pieltain, Rev. de Fitopatologia, 1923, p. 116.

Specimens received from East Africa agree almost exactly with the descriptions of this European species given by Ruschka and Bolivar. As it is interesting to find this species in tropical Africa, and as there are some varieties, especially among the males, some of which have, curiously enough, been bred from eggs of an Hemipteron, we think it better to give here short descriptions of each form.

♀. The same as the European type; the thorax is more greenish without violet coloration, but the vertex, scutellum, axillae and abdomen have also a bronze colour. The second segment of the abdomen is not distinctly whitish at the end, but is only slightly clearer, more or less translucent. The relative length of the antennal joints the same, except that the 2nd joint of the funicle is a little shorter, being not much more than twice as long as broad (fig. 1 c). The transverse hyaline stripe in the middle of the forewings a little narrower.

Length, 3 mm.

UGANDA: Kampala, 3 ♀♀, 1926 (*H. Hargreaves*).

Host. From eggs of a Lasiocampid moth, *Gonometa fasciata*.

♂♂. Though agreeing in size and coloration with the European type, they all differ in antennal characters. By the form of the antennae they may be separated into three varieties, as follows:—

***A. bifasciatus* var. *antestiae*, nov.**

Antennae with the five funicle joints all transverse; 1st and 2nd about one and a half times, the 4th and 5th more than twice, as broad as long; club almost twice as long as the rest of the antenna (fig. 1 e). Hind tibiae with the extreme base white.

Length, 1.3–1.4 mm.

UGANDA: Toro, 11 ♂♂, vi. 1925 (*G. L. R. Hancock*).

Host. From eggs of a Pentatomid, *Antestia lineaticollis*, Stål.

In the typical male of *bifasciatus* the 1st funicle joint is longer than broad, the 2nd and 3rd about quadrate, and only the 4th and 5th strongly transverse.

A. bifasciatus var. **hancocki**, nov.

Antennae with seven funicle joints; the 1st twice as long as broad, the following decreasing gradually in length, the 6th quadrate, the 7th broader than long; club distinctly longer than the four preceding joints together (fig. 1 *f*). Hind tibiae with the basal third white.

Length, 1.3–1.4 mm.

UGANDA: Toro, 6 ♂♂, vi. 1925 (*G. L. R. Hancock*).

Host. From eggs of a Pentatomid, *Antestia lineaticollis*, Stål.

Bred from the same host and at the same time as var. *antestiae*, this variety belongs undoubtedly to the same species. On account of the seven funicle joints it would seem to be more closely related to *A. disparis*, Ruschka, but in that species the club is much shorter, being only as long as the three preceding joints together.

A. bifasciatus var. **longiclava**, nov.

Antennae with five funicle joints, all strongly transverse and together much shorter than the scape; the club very much elongate, more than two and a half times as long as the rest of the antenna (fig. 1 *d*). Legs as in var. *antestiae*.

Length, 1.6 mm.

UGANDA: Toro, 6 ♂♂, 1925 (*G. L. R. Hancock*).

Host unknown.

This variety, with its body less shining, the clear parts of the legs more yellowish than white, and the extraordinary form of the antennae, which are more ciliate than in the other varieties, will probably prove to be a distinct species.

Mesocomys pulchriceps, Cam.

Mesocomys pulchriceps, Cameron, Proc. S. Afr. Philos. Soc., xv, 1905, p. 210.

The genus *Mesocomys*, Cam., is related to *Anastatus*, Motsch., from which it can be readily distinguished by the two grooves at the base of the scutellum in the female, by the shorter antennae with subquadrate or transverse funicle joints, the pedicel being as long as the first three funicle joints together, and by the wings, which are entirely infuscated with only the base hyaline and two whitish rounded spots, one under the marginal vein, the other opposite near the hind margin of the wing. The wings of the male are entirely hyaline.

The only known species seems to be widely distributed throughout South Africa. Cameron gives as host the larva of a Calliphorid fly, *Chrysomyia chloropyga*, but his information was probably erroneous, as all specimens found later have been bred from Lepidopterous eggs.

In the British Museum is a series determined by Dr. Waterston of ♂♂ and ♀♀ from NORTHERN NIGERIA (*H. Liddiard*), bred from eggs of a Bombycid. The following series have been received by the Imperial Bureau of Entomology:—NATAL: New Hanover, 23 ♀♀, 10 ♂♂, 1915 (*C. B. Hardenberg*); host not mentioned. ORANGE FREE STATE: Bloemfontein, 2 ♀♀, 2 ♂♂ (*H. K. Munro*); host unknown. CAPE PROVINCE: Dohne, 5 ♀♀, 31 ♂♂, xiii. 1921 (*H. K. Munro*); from eggs of *Gonimbrasia tyrrhea*, Cramer (Saturniidae).

The morphological characters are very constant and there are only slight variations in the coloration. The specimens from Bloemfontein are more bluish purple and have the antennae entirely yellow, with only the pedicel dark.

Anastatus vuilleti, Crawford 1912, from French Sudan, Koulikoro, reared from the eggs of *Cerina butyrospermi*, Vuillet, belongs to the genus *Mesocomys*. From the description it differs somewhat in its smaller size and in the coloration but it is probably only a variety of *Mesocomys pulchriceps*, Cam.

Family EULOPHIDAE.

***Tetrastichus ovulorum*, sp. n. (fig. 2).**

♂. Body black, without metallic shine. Abdomen with a large rounded yellow spot near the base, this spot being more conspicuous in the female than in the male. Antennae brown, scape and pedicel yellow. Legs entirely clear yellow, except the anterior coxae which are partly brownish. Wing nerves very pale yellow.

♀. *Head* short, vertex narrow, with the ocelli disposed in a low triangle, the lateral ocelli as far from each other as from the eye-margins. Eyes short oval, the cheeks almost as long as the diameter of the eyes. Mandibles with two acute teeth

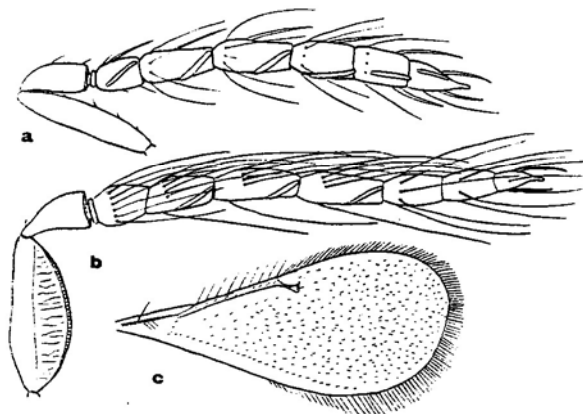


Fig. 2. *Tetrastichus ovulorum*, sp. n.: a, antenna of ♀; b, antenna of ♂; c, forewing.

of equal length, the lower margin rounded below the second tooth. Palpi rather long and slender, the maxillary palpi three times as long as the labial. Antennae inserted in the middle of the face, a little above the level of the base of the eyes. Scape narrow, reaching to the front ocellus, longer than the pedicel and the 1st funicle joint together; pedicel more than twice as long as broad; two small transverse anelli; 1st funicle joint much shorter than the pedicel, not much longer than half the next joint; 2nd joint longer than the pedicel; 3rd as long as 2nd; club almost as long as the three funicle joints together, with three elongated joints, the first two as long as the pedicel, the 3rd a little shorter, much pointed at the end. Each joint of the funicle and of the club bears at the base a few long bristles as long as the joint itself, and on the side a shorter thickened hair; each joint also with a large, obliquely placed sensillus, and sometimes with a short straight sensillus on the other side. *Thorax* rounded, not

much longer than broad, almost smooth and shining; with a stronger lens the mesonotum and scutellum are seen to be very finely striate. Parapsidal furrows strong; the longitudinal furrows on mesonotum and scutellum very weakly marked and not easily seen. Propodeon short, angled at the sides, with rather large, rounded spiracles. Wings large, as long as the body, and broadly rounded at tip. Submarginal vein with a single bristle on the upper side and two to four bristles directed downward; marginal vein somewhat thickened, twice as long as the submarginal; stigmal vein elongate, thin at the base, oval at the end, about as long as one-fourth the marginal vein. The discal cilia short and not very dense, forming a regular row near the lower margin of the wing; length of marginal hairs about one-sixth the width of wing. Hind wings narrow, the marginal hairs as long as the greatest width of the wing. Legs slender, almost bare, with only few very short hairs; tibiae longer than femora; the tarsal joints subequal in length, except on the anterior tarsi, where the 1st joint is shorter than the following. *Abdomen* short, rounded, not much longer than the thorax, the segments transverse. Ovipositor slightly protruding.

♂. Similar to the female in size and form. Antennae more elongate; scape strongly broadened below and oval, owing to the great development of the sense-organ, which covers all the lower part of the scape and is almost broader than the rest of the joint; pedicel shorter than half the scape, and twice as long as broad; annellus short, transverse; 1st funicle joint short, not much longer than broad; 2nd distinctly longer, as long as the pedicel; 3rd and 4th longer and narrower than the 2nd, subequal in length; club as long as the two preceding joints together, with three narrow and elongated joints, the 3rd pyriform and pointed at tip. Each funicle joint bears a whirl of very long bristles, which are as long as two joints together; on the club the bristles are a little shorter and not so dense; the last joint with two thick hairs reaching beyond the tip of the antenna; 2nd-4th joints each with a large obliquely placed sensillus. Abdomen narrower than in the female, with a long protruding penis.

Length, ♀♂, 0.9-1.0 mm.

SIERRA LEONE: Njala, many ♀♀ and ♂♂, 5.ix.1928 (*E. Hargreaves*).

Host. From eggs of a Coccinellid beetle, *Epilachna chrysomelina*, F.

This species is characterised by its small size, by the form of the antennae, in which the 1st funicle joint is much shorter than the 2nd joint and than the pedicel, and by the great development of the sense-organ of the male, which gives to the scape an enlarged and almost foliaceous form. Through the presence of only one bristle upon the submarginal vein, this species is a true *Tetrastichus*, Hal., according to the divisions of Kurdjumov.

This species must not be confused with *T. epilachnae*, Giard, or *T. coccinellae*, Kurdj., both parasites of Coccinellids in Europe; morphologically, the size, form of antennae and coloration are quite different, and biologically, the two European species are known to parasitise the nymphs of COCCINELLIDAE, whereas we have here a real egg-parasite.

Family TRICHOGRAMMIDAE.

Trichogramma lutea, Gir.

Trichogrammatoidea lutea, Girault, Trans. Amer. Ent. Soc., xxxvii, 1911, p. 19.

Girault established the genus *Trichogrammatoidea* for the species *Chaetostricha nana*, Zehnt., from Java, a parasite of *Diatraea saccharalis*, and for this South African species, bred from eggs of *Cydia (Carpocapsa) pomonella*. The first species has been recognised by different authors to belong to the genus *Trichogramma*, Westw., and the second, of which we have received specimens from Natal, is also referable to this latter genus.

The genus *Trichogrammatoidea* is characterised by Girault in the following terms :

“ A genus closely allied with and resembling *Pentarthron*, Riley, but differing from it in having slightly narrower fore wings which lack the short oblique line of discal cilia running proximo-caudad from the stigmal vein and which have longer marginal cilia, especially distad, somewhat as in *Oligosita*, Haliday, of the other subfamily, but not so long. Further than these, the male antennae are distinctly segmented, not nodular, 8-jointed, and the antennae of both sexes, in the type species at least, bear peculiar minute bladder-like appendages on the funicle joints which have not as yet been found to occur in any other genus.”

Considering these characters, we find that the short oblique line of cilia under the stigmal vein may be present in larger specimens and absent in smaller ; the marginal cilia are also a little shorter in large specimens, but they are still always longer than in *T. evanescens*, Westw. ; the antennae of the male are as in *Trichogramma* with an elongate distal joint, the folds of which may be taken for divisions between different joints ; lastly, the minute bladder-like appendages, which break off very easily, may be found on the funicle joints of other species ; we have seen them on the antennae of many females of *T. evanescens*, Westw.

Trichogrammatoidea, Girault, is thus a synonym of *Trichogramma*, Westw. (*Pentarthron*, Riley) and *T. lutea*, Gir., may be characterised by its entirely yellow coloration, by the longer marginal hairs of the wings, the largest of which are about as long as a fifth of the width of the wing, and by the more scattered discal cilia on the fore wings, arranged in 12 to 15 rows of not many hairs. Length, ♀ 0.45-0.70 mm., ♂ 0.30 mm.

The specimens examined are 3 ♀♀, 1 ♂, from Magut, Natal (*F. S. Parsons*), from eggs of *Diparopsis castanea*, Hampson.

Family MYMARIDAE.

Anaphoidea gonipteri, sp. n. (fig. 3).

♂♂. Body brownish black. Antennae brown with the pedicel clearer. Legs with black coxae and femora, brown middle and hind tibiae (yellowish at the base), and yellow trochanters, anterior tibiae, and tarsi, the latter darker at tip. Wings hyaline, with a curved brownish stripe which stretches from the base of the wing to the marginal vein, where it is thinnest, and from there to the hind margin of the wing, leaving under the marginal vein a rounded hyaline spot ; this stripe continues, less visible and narrow, along the hind margin. Wing veins brown.

♀. *Head* transverse. Cheeks as long as the diameter of the eyes. Antennae inserted a little above the middle of the face, with 10 joints, finely ciliate. Scape broadened in the middle, but not broader, and only slightly longer, than the pedicel ; pedicel about one and a half times as long as broad ; 1st funicle joint annuliform, half as long and as broad as the pedicel ; 2nd joint much longer, more than twice as long as the pedicel ; the following joints a little shorter ; club with two joints, a little longer than the two preceding joints together. The relative length of the joints as follows : Scape 16 ; pedicel 10 ; funicle 5, 24, 22, 22, 21, 17 ; club 42. *Thorax* smooth, longer than broad. Wings very large, longer than the body, broadened at the end, the stigmal vein at one-third the length of the wing. Marginal vein longer than broad, continued straight by the stigmal vein, which is parallel to the wing margin. Surface of wing densely covered with small cilia from an oblique line under the marginal vein ; base of wing, and two small narrow areas below and behind the stigmal vein hairless. Marginal hairs regular, a little longer at the lower end, where they are still shorter than half the greatest width of the wing. Hind wings petiolate, narrow, with margins almost parallel ; marginal hairs three times as long as the width of the blade. Legs slender and long ; tarsi with four joints. *Abdomen* short oval, much shorter than the thorax. Ovipositor not protruding.

♂. Similar to the female, but the antennae much longer than the body, with 13 joints; scape slightly broadened in the middle; pedicel a little longer than broad; 1st funicle joint very small, annuliform; all the following 10 joints subequal in length, about four times as long as broad.

Length, ♀♂, 0.85–1.0 mm.

TRANSVAAL: Pretoria, 22 ♀♀, 15 ♂♂, ix. 1926.

Host. From eggs of *Gonipterus scutellatus*, Gyll., from material sent from Australia.

This parasite of the gum-tree weevil has been discovered in Australia and introduced into South Africa, where it seems to be now established. According to Miller (N.Z. Jn. Agr., xxxv, 1927, p. 283) it has also been sent from Australia to New Zealand, where a second egg-parasite of the weevil has been bred.

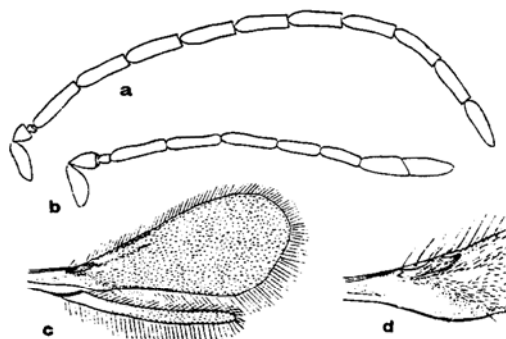


Fig. 3. *Anaphoidea gonipteri*, sp. n.: a, antenna of ♂; b, antenna of ♀; c, wings; d, base of forewing.

Four other species of *Anaphoidea* have already been described by Girault from Australia, each from single specimens taken by sweeping or on windows. As far as can be ascertained from the short descriptions, *A. gonipteri* may be distinguished from the other Australian species by the following key:—

1. Wings hyaline, as broad as in *Stethynium*; 2nd funicle joint globular, much shorter than 3rd; body black with a broad whitish band around base of abdomen *A. harveyi*, Gir.
- Wings more or less infuscate, at least at base; 2nd funicle joint not shorter than 3rd; body quite black 2.
2. Wings hyaline with slightly infuscated transverse stripes below the marginal and submarginal veins; funicle joints (except the small 1st) almost equal in length, the 2nd a little longer than the 3rd, the 6th the shortest *A. gonipteri*, sp. n.
- Wings uniformly infuscated, except at base 3.
3. Legs pale yellow, funicle joints short *A. linnaci*, Gir.
- Legs dusky, subpallid at trochanters; funicle joints elongate 4.
4. Second funicle joint distinctly longer than 3rd *A. galtoni*, Gir.
- Second and 3rd funicle joints equal in length *A. australia*, Gir.

A. gonipteri differs also from the other European and North American species in the coloration and form of the forewings and in the relative lengths of the antennal joints.

Anagrus cicadulinae, sp. n. (fig. 4).

♀♂. Body entirely yellow or orange-yellow. Antennae and legs paler. Eyes and ocelli reddish.

♀. Head a little broader than the thorax. Ocelli forming a small triangle, the distance between them shorter than their own breadth and much shorter than their distance to the eyes. Eyes almost rounded, cheeks large. Antennae inserted in the middle of the face, with 9 joints; scape somewhat broadened in the middle; pedicel as broad as the scape, but shorter, about twice as long as broad; 1st funicle joint very short, half as long as the pedicel and narrower; 2nd joint elongate, almost as long as the scape and more than four times as long as broad; 3rd a little shorter than 2nd; the following joints subequal in length, longer than the 2nd and broadening slightly

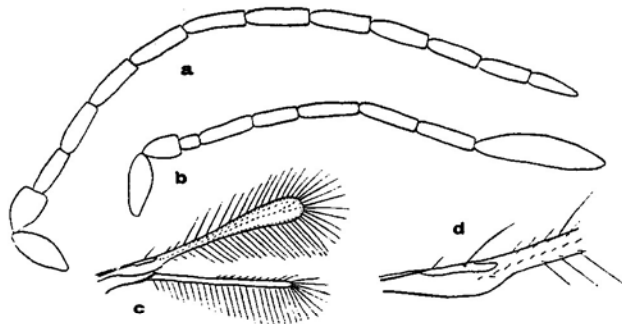


Fig. 4. *Anagrus cicadulinae*, sp. n.: a, antenna of ♂; b, antenna of ♀; c, wings; d, base of forewing.

toward apex, the 6th more than three times as long as broad; club ovate, a little longer than the two preceding joints together. The length of the joints (in 1/1000 of mm.) as follows: 62, 36, 20, 53, 45, 58, 56, 56, 122. Thorax narrow, elongate. Prothorax strongly narrowed in front; mesonotum longer than broad, with distinct parapsidal furrows; scutellum short, transverse, truncate posteriorly; propodeon large, longer than the scutellum, the spiracles small and oval. Wings narrow, longer than the body, only a little broadened and rounded at apex; marginal vein at the first quarter of the wing, short; stigmal vein in a straight line with the marginal, and little differentiated from it. The discal cilia sparse, except near the end where they are more dense; marginal hairs very long; at the lower end they are three times as long as the greatest width of the wing. Hind wings almost as long as the fore wings, but very narrow, linear, and petiolate at base; marginal hairs about six times as long as the width of the wing. Legs slender; tarsi as long as their tibiae, with four joints. Abdomen as long as head and thorax united, very much pointed at the end, the ovipositor slightly protruding.

♂. Similar to the female. Antennae with 13 joints; scape short, oval, about twice as long as broad; pedicel of the same breadth, but shorter; 1st funicle joint as long as the pedicel, but distinctly narrower; 2nd joint a little longer; the following 9 joints subequal in length, only the last shorter. Abdomen not longer than the thorax.

Length, ♀ 0.55 mm., ♂ 0.45 mm.

NATAL: Durban, 8 ♀♀, 2 ♂♂, 27.iii.1925 (C. P. van der Merwe).

Host. From eggs of *Cicadulina (Balclutha) mbila*, Naudé, on *Zea mays*.

This Jassid egg-parasite, the first of this genus from Africa, is very similar to *Anagrus armatus*, Ashm., another widely distributed parasite of JASSIDAE. It may, however, be separated from it by the following characters, taking the description of *armatus* given by Girault (Trans. Amer. Ent. Soc., xxxvii, 1911, p. 289).

A. armatus, Ashm.

Body more or less shaded and dusky above on thorax and abdomen.

Antennae with scape as long as the following three joints combined.

Second funicle joint longer than 3rd, and distinctly longer than 6th, which is sub-equal in length to 3rd.

Forewings enlarging distad to a pear-shaped apical head, the discal ciliation forming 5-6 longitudinal lines before apex.

The longest marginal cilia 1.75 times as long as the greatest wing width.

A. cicadulinae, sp. n.

Body uniformly orange-yellow.

Scape shorter than the two following joints combined.

Second funicle joint longer than 3rd, but shorter than 6th, which is distinctly longer than 3rd.

Fore wings less broad distad, the discal ciliation forming three longitudinal rows.

The longest marginal cilia 2.5 times as the greatest wing width.

Alaptus andersoni, sp. n. (fig. 5, a & b).

♀. Body brownish, clearer on vertex and on middle of thorax, almost black between the ocelli and near the tip of the abdomen. Antennae and legs clear yellow, club more brownish. Eyes and ocelli dark reddish.

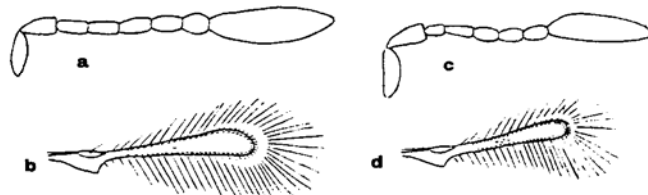


Fig. 5. *Alaptus andersoni*, sp. n. : a, antenna of ♀; b, forewing. *Alaptus caccilli*, Gir. c, antenna of ♀; d, forewing.

♀. *Head* as broad as the thorax; vertex broad, with the ocelli forming a low triangle, the lateral ocelli very near the occipital margin of the vertex and as far from the eyes as their own breadth. Between the eyes and the ocelli runs the ordinary carina of *Alaptus*, alternately black and white; the transverse carina above the frons largely black in the middle and clearer only near both ends; behind the head the carina follows the posterior margin of the eyes. Antennae relatively long, a little longer than the body, with 8 joints; scape with one side straight, the other strongly rounded, somewhat broader than the pedicel; pedicel about as long as two-thirds of the scape; 1st funicle joint narrower, but not much shorter than the pedicel; the following joints widening gradually, all of about the same size as the 1st, except the 5th which is shorter and rounded; club large, oval, as long as the four preceding joints together. The length of the joints (in 1/1,000 of mm.) as follows: 44, 31, 29, 29, 29, 29, 27, 116. *Thorax* short, rounded, as long as broad, almost smooth; the parapsidal furrows very faintly indicated. Wings very long, almost one and a half times as long as the body; with the ordinary form for the genus, the posterior margin denticiform near the base and the marginal vein elongate. The longest marginal cilia about three times as long as the width of the wing; along the inside of the margin of the

wing a narrow brownish stripe with small cilia, the disc itself quite hyaline with a single small hair in the middle. The white ring, formed by the decolorated base of the marginal cilia around the end of the wing, well marked. Hind wings narrow, not much shorter than the fore wings; on the hind margin the marginal cilia have the same length as those on the fore wings; disc with a single row of short cilia. Legs slender and long. *Abdomen* shorter than the thorax, rounded at the end. Ovipositor protruding, almost as long as one-third of the abdomen.

Length, 0.28 mm.; wing expanse (excluding cilia), 1.0 mm.

KENYA COLONY: Kabete, 3 ♀♀♀, vii.1917 (*T. J. Anderson*).

Host. Reared from eggs on coffee leaf. The small eggs, which have been preserved with the parasites, are laid in a cluster of 34 near the middle rib of the leaf; they are the eggs of a Psocid.

This species, the first of the genus found in Africa, may be distinguished by its small size, with relatively long antennae and wings, by its coloration, by the relative length of the antennal joints, and by the presence of only one small discal cilia on the fore wings.

***Alaptus caecilii*, Gir. (fig. 5, c & d).**

Alaptus caecilii, Girault, Ann. Ent. Soc. Amer., i, 1908, p. 189.

We have another species from Africa, which we are not able to distinguish from the American *A. caecilii*, Gir., when comparing it with the original description of the species. It differs specially from the preceding African species in the following characters.

Body entirely yellow; antennae and legs concolorous; eyes and ocelli reddish. Antennae shorter than the body; pedicel broad, two-thirds the length of the scape and twice as long as the 1st funicle joint, which latter is distinctly shorter than all other joints; 2nd joint about 0.75 times as long as the pedicel, and as long as the 3rd; 4th and 5th a little shorter than the 3rd and subequal in length; club as long as the combined lengths of three preceding joints together with about half the 2nd joint. The length of the joints (in 1/1,000 of mm.) as follows: 51, 36, 20, 27, 25, 24, 24, 87. Fore wings as long as the body; with a row of four discal cilia.

Length, 0.32-0.37 mm.; wing expanse (excluding cilia), 0.90 mm.

KENYA COLONY: Doondu, 6 ♀♀, iv.1926 (*T. W. Kirkpatrick*).

Host. "Bred from coffee prunings attacked by Coccid."

As is known, many Psocids live among the Coccid colonies, and this species is very probably, like the American *caecilii* and other species, a parasite in eggs of PSOCIDAE.

Family SCELIONIDAE.

***Scelio zolotarevskyi*, sp. n. (fig. 6).**

♂♂. Body black, partly covered with small white cilia, especially behind the eyes and on the sides of the prothorax, propodeon and abdomen; on the propodeon they are shorter, thinner and more dense. Antennae of ♀ with scape and pedicel reddish brown, flagellum black; of ♂ with the flagellum orange-yellow, the scape and pedicel more brownish red. Legs reddish, only the coxae black, the posterior femora of ♀ somewhat brownish in the middle. Fore wings of ♀ slightly infuscate, hyaline at base; wings of ♂ entirely hyaline.

♀. *Head* large, seen from above twice as broad as long, a little broadened behind the eyes; occiput largely excavated. Seen from in front, the head is rounded, the inner eye margin diverging downward; cheeks a little longer than half the length of the eyes. Anterior ocellus situated above the front, lateral ocelli on the vertex

near the eyes. Face and vertex irregularly but strongly reticulated. Antennae inserted above the clypeus, on each side of a chitinous protuberance; scape elongate, but not reaching the front ocellus; pedicel two and a half times as long as broad, about as long as one-fourth of the scape; 1st joint of the flagellum as long as the pedicel, but narrower, not much broadened at the tip; the following joints form a large club of nine joints, broader in the middle than at the ends; all the club joints transverse, the 1st small, the following of the same length but broader, the 4th distinctly larger than the others. *Thorax* longer than broad, strongly reticulated. On the mesonotum the longitudinal carinae are stronger and more regular than the transverse; the parapsidal furrows indicated by a row of grooves bordered by a stronger carina. Scutellum as strongly reticulated as the mesonotum. Meso- and metapleurae with a finer structure, the reticulation smaller than on the mesonotum. Metanotum with a row of large grooves separated by transverse carinae. Propodeon strongly reticulated anteriorly, the sides covered with dense small hairs; posteriorly it is hollowed, with few longitudinal carinae, and with a large truncate tooth on each

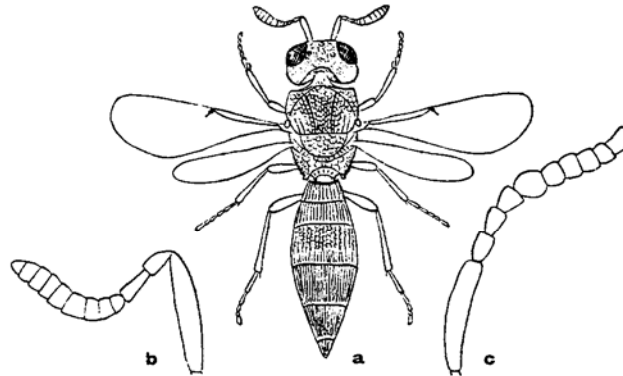


Fig. 6. *Scelio zolotarevskiy*, sp. n.: a. adult ♀; b. antenna of ♀, and c. of ♂.

side. Wings slightly infuscated, covered with brownish cilia, except at base which is hairless. Submarginal vein not reaching the anterior margin but ending in a sort of stigma formed by the thickened, rounded marginal vein, from which emerges the stigmal vein; the latter almost as long as the diameter of this stigma. The other veins indicated by folds in the wing. At rest, the wings do not reach the end of the abdomen. Hind wings large, quite hyaline. Legs short, femora a little thickened in their apical half. Pilosity very sparse on the femora, denser on tibiae and tarsi. *Abdomen* oval, elongate, distinctly longer than head and thorax combined. First segment short, transverse, truncate anteriorly; 2nd broader but little longer; 3rd almost twice as long as 2nd; 4th as long as 3rd but narrower; 5th shorter and narrower; 6th short and triangular; 7th very small. Each segment longitudinally striate from base to end, except for a narrow smooth band along the hind margin of the segments; the 1st segment with about 11 longitudinal striae, the 2nd with about 15 finer striae, the following segments with the striae thinner and closer together. These longitudinal striae are formed by regular carinae, between which are small transverse carinae, generally very thin, except at the base of the 3rd segment where the structure is more reticulated. Ovipositor not protruding.

♂. Quite similar to the female in size, coloration and reticulation of the body. Abdomen a little shorter and rounded at tip. The essential difference is only in the form of the antennae: scape straight, somewhat enlarged at the end; pedicel about twice as long as broad; 1st funicle joint slightly longer and broader than the pedicel; 2nd shorter but still broader, cupuliform; 3rd larger than all other joints, as long as the 1st, but more than twice as broad, rounded; the following joints shorter than broad, rounded at the sides; last joint pyriform, pointed at tip.

Length, ♀ 5.7 mm., ♂ 5.5 mm.

MADAGASCAR: Ejeda, 9 ♀♀, 1 ♂, and some pupae, 18.ii.1928 (B. Zolotarevsky).

Host. From eggs of *Locusta migratoria*, L., subsp. *migratorioides*, R. & F.

These parasites were sent by Mr. Zolotarevsky to Mr. B. P. Uvarov, from whom I received them for study.

All species of *Scelio* are probably parasitic in eggs of ACRIDIDAE, and other species have already been bred from eggs of *Locusta migratoria*, L., in different countries.

This species seems to be specially related to the African *S. howardi*, Crawford, from the Zambesi River, a parasite of *Nomadacris septemfasciata*, Serv. It may, however, be distinguished by the larger size, the coloration of the antennae and legs, in which the scapes and femora are almost quite reddish and only the hind femora brownish in the middle, the 9-jointed antennal club, the distinct parapsidal furrows, the scale-like hairs which are scattered over the head, thorax, and sides of abdomen, and by the clear brown fore wings with hyaline base.