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II.—*Descriptions of some new Species of African Solifugæ and Araneæ.* By R. I. POCKOCK.

[Plates II. & III.]

WITH the exception of the first species mentioned in this paper, all the new forms here recorded have been received within the last few years from South Africa. Most of them were collected by Miss Leppan. Those obtained by Mrs. White were sent to the British Museum by Dr. Schönland, Curator of the Albany Museum, Grahamstown.

Order SOLIFUGÆ.

Genus DÆSIA, Koch.

Dæsia bellula, sp. n. (Pl. II. figs. 1, 1 a.)

♀.—*Colour.* Mandibles yellow, with dorsal brown stripes; head brown, with oval yellow median patch; abdomen yellowish, with three narrow tergal stripes; palpi from the distal half of the femur to the end infusate; first and second legs only weakly infusate, third and fourth (especially the fourth) more strongly infusate, except at the base and apex, which are pale.

Carapace a little shorter than patella of fourth leg, equal to that of palp, a little shorter than tibia and tarsus of palp. Of the four distal teeth on the upper jaw of the *mandible* the first is smaller than the second, the second and fourth are about equal and largest, and the third smallest; one intermediate tooth on the lower jaw.

Palpi entirely without spines, clothed with short hairs and long bristles, which, at least on the lower border of the patella, show a symmetrically paired arrangement.

♂.—Smaller than female, but like it in colour except for the indistinctness of the mandibular bands.

Carapace only about two thirds the length of the patella or tibio-tarsus of palp.

Flagellum oval, with narrowed upcurled extremity, its dorsal border folded over, and a small tuft of short hairs at its proximal end. Upper jaw of *mandible* furnished with a deep oval hollow behind the terminal fang, which distally extends forwards as a narrow channel on each side of the fang, the two being separated by a longitudinal crest; the internal edge of the hollow deeply notched posteriorly, and behind the notch are some small teeth which precede the large principal

tooth; behind the latter follow four subequal external cheek-teeth; lower jaw toothed as in the female. Patella of *palp* with long setæ beneath; tibia with five inner and three outer strong spines at its distal end.

Measurements in millimetres.—♀. Total length 15; width of head 4; length of palpus 13.5, of fourth leg 20.

♂. Total length 13; width of head 2.5; length of palpus 15.

Loc. Egypt: Wady Sikait (D. Macalister).

Evidently nearly related to another Egyptian species, *D. Ehrenbergi*, Simon, which has a similar hollow on the upper jaw of the mandible. In the latter, however, the hollow is a complete oval, not divided in front and without a notch on its internal edge. The first long tooth, too, is relatively much shorter. The female seems to differ principally in colour from that of *Ehrenbergi*, *tunetana*, and *velox*.

Genus BROOMIELLA, nov.

Allied to *Dæsia* in having the tarsi of second and third legs bisegmented, the distal segment not half the length of the proximal, but differing in that the tarsus of the fourth is also bisegmented, with the distal segment one third the length of the proximal.

In *Dæsia* the segment that corresponds to the proximal segment of *Broomiella* has a couple of complete joints near its distal end, so that there are four distinct tarsal segments on the fourth leg.

Type *Broomiella lineata*.

Broomiella lineata, sp. n. (Pl. II. figs. 3, 3 a, 3 b.)

♂.—*Colour*. Carapace infusate, mesially pale; tergites with three brown spots, forming a median and a right and left lateral stripe on the back; ventral surface and bases of appendages quite pale; palpi infusate, legs also infusate, with pale extremities; mandibles with lightly defined dark stripes.

Width of *carapace* less than length of patella or tibia of palp, about equal to tibia of fourth leg.

Mandible with upper jaw strong, stout, distally pointed, hollowed out on its inner side, projecting nearly straight forwards, strongly toothed, the first tooth represented by a small excrescence, the second large, third minute, fourth long; lower jaw with two long principal teeth, one minute inner tooth behind the proximal of these and one between them.

Flagellum with lower edge straight, upcurled, upper edge strongly convex proximally.

Palpi clothed with fine short hairs and furnished with long bristles; the tibia without cylindrical bristles, armed below with four pairs of spines or spiniform bristles; the three distal of these on the inner side and the one distal on the outer are short spines, and the rest are apically setiform.

Protarsus of third *leg* armed with five upper spines and three inferior, two of which are apical, the other anterior; the proximal tarsal segment with two anterior spines; third *leg* similarly armed, except that two of the dorsal protarsal spines take a posterior position; fourth *leg* without the dorsal protarsal spines, but otherwise similarly armed with an additional small spine on the base of the proximal tarsal segment in front.

Second sternal plate of abdomen with numerous short and stout clavate bristles clustered on each side of the middle line.

Measurements in millimetres.—Total length 14; width of head 3.5; length of palpus 15, of fourth *leg* 18 (both measured from base of femur).

Loc. Pearston, in Cape Colony (*Dr. R. Broom*).

A single male example.

Genus CEROMA, Karsch.

Ceroma pictulum, sp. n. (Pl. II. fig. 2.)

♂.—*Colour* yellow; mandibles with three black stripes; carapace with black ocular tubercle, two ill-defined black stripes behind it and a broader irregular one on each side; abdomen with three sharply defined narrow black stripes above; legs and palpi infusate, pale basally, quite pale laterally and below.

Flagellum of male very long, reaching to the middle of the thoracic portion of the carapace, not curved inwards, but ending in a slightly enlarged tip, which appears to be minutely forcipate(?); base of flagellum on inner side protected by seven feathery bristles. Upper fang of *mandible* slender, excavated, lightly curved, armed with only two small teeth in addition to the cheek-teeth, one near the base and the other nearly halfway along the fang on the inner rim of the excavation. Lower jaw armed with two relatively small and close-set teeth, the distal of which is smaller; beyond the latter the cutting-edge is convex and sinuous. Tibia of second and third *legs* with three dorsal spines. *Pulvillus* deeply cleft.

Total length 15 millim.

Loc. Tea Fountain, near Grahamstown (*Miss Leppan*).

Resembling *C. Sclateri*, Purc., in colour, spine-armature of second and third legs, deeply divided pulvillus, &c., but differing entirely in the weak dentition of the mandibles.

Order ARANEÆ.

Family Ctenizidæ.

Genus ACANTHODON, Guér.

Acanthodon ochreolum, sp. n. (Pl. II. figs. 5, 5 a.)

♂.—Of about the size, colour, and general appearance of *A. Thorellii*, Cambr. (P. Z. S. 1870, p. 156, pl. viii. fig. 6; also Pocock, Ann. & Mag. Nat. Hist. (7) i. p. 320, 1898), but with the protarsus of the first leg arcuate in its basal half, with concavity looking inwards, geniculate just past the middle, the remainder of the segment running straight forwards; the tibial spurs, too, are very unequal, the distal being long, twice as long as the proximal, which is short and conical; the tibia is armed beneath with four spines, the protarsus with two. Except that the patella and tibia are more inflated, the palpus has much the same form in the two species. Anterior median eyes much larger than in *A. Thorellii*, hardly more than half a diameter apart, less than a diameter from the posterior laterals, which are barely half their area.

Total length 9 millim.; carapace 3.5; first leg 13, fourth 13.5.

Loc. Jansenville (*Miss Leppan*).

Genus STASIMOPUS, Simon.

Stasimopus palpiger, sp. n. (Pl. II. figs. 4, 4 a.)

♂.—*Colour.* Blackish above, the extremities of the palpi and anterior two pairs of legs distally pale; third and fourth legs yellowish brown, the basal half of each segment darker than the proximal; lower surface pale.

Carapace granular, a little longer than tibia of first leg, equal to protarsus of fourth, shorter than patella and tibia of fourth. *Eyes* of anterior line a little procurved, subequal in size and subequally spaced; eyes of posterior line slightly recurved, small, subequal, the posterior lateral much smaller than anterior lateral and widely separated from it.

Labium and *maxillæ* unarmed.

Palpi unarmed, exceedingly long and slender, about three and a half times as long as carapace, and extending as far as the tip of the first pair of legs; the trochanter cylindrical,

four to five times as long as wide; the patella and tibia subequal and nearly as long as the femur; tarsus short, truncate; organ as in fig. (Pl. II. fig. 4 a).

Legs of first and second pairs very long and slender, with tarsi scopulate and tibia and protarsi spined beneath; tarsi with one or two spines only; claws with a single basally curved row of eight to ten teeth; third leg with a few short spines on the anterior side of the patella and of the tibia at its distal end; protarsus spined beneath; tarsus scopulate, claw with only two or three strong teeth at the base; fourth leg with patella armed with short spines in front, a few also on the tibia; long spines beneath the distal end of the protarsus and many spines on the tarsus, which is not scopulate and has the claws armed basally with a few large teeth and distally with some small denticles.

Measurements in millimetres.—Total length 10; carapace 5; length of palpus 19, of first leg 19, of second 15, of third 12.5, of fourth 19.

Loc. Graaf Reinet (*Miss Leppan*).

Apart from the greater length of its palpi and legs and less coarse sculpturing of carapace, the male of this species may be distinguished from that of *S. insculptus*, Poc., from King William's Town (Ann. & Mag. Nat. Hist. (7) vii. p. 285), by the following amongst other particulars:—

- a. Lateral eyes on each side separated by a space which equals about the long diameter of the anterior and twice the long diameter of the posterior; posterior medians less than their diameter from posterior laterals and barely more than that from anterior laterals *insculptus*, Poc.
- b. Lateral eyes on each side separated by a space which is much greater than the long diameter of the anterior and about four times that of the posterior; posterior medians at least twice their diameter from the laterals and about four times that from the anterior medians *palpiger*, sp. n.

Stasimopus artifex, sp. n.

In disposition of eyes closely resembling *S. oculatus*, Poc., from Bloemfontein (P. Z. S. 1897, p. 728), as also in the presence of spines on the apex of the protarsus of the third leg beneath and the presence of nearly a dozen spines, the anterior of which are irregularly arranged, upon the apex of the infero-posterior side of the protarsus of the fourth leg; but differing in that the spines on the protarsus are only about six instead of about fifteen in number, and weak instead of

strong. Moreover, the labium is furnished with eight cusps instead of two. The legs also are longer, the carapace being shorter and not longer than the patella + tibia + protarsus of the second leg, and only slightly exceeding the tibia + protarsus of the fourth.

Total length 35 millim.; carapace 15; second leg 28, its pat., tib., and prot. 16; fourth leg 33, its tibia and protarsus 14.5.

Loc. Cuylerville, near Grahamstown (*Dr. Schönland*).

(The single specimen of this species bears the ticket "Collected Feb. 28th, 1898, by Mr. A. E. C. W.")

Stasimopus Schönlandi, Poc. (Ann. & Mag. Nat. Hist. (7) vi. p. 319, 1900), differs from *S. oculatus* and *S. artifex* principally in the following particulars:—The ocular area is typically relatively very flat, the tubercles of the anterior lateral eyes being small and low and the anterior median eyes but little raised. The anterior laterals are, as a rule, small and no larger than the anterior medians or posterior laterals, and all the eyes are widely spaced, the distance between the anterior medians and laterals being equal to about three or four times the diameter of the clear area of the medians and always greater than the long diameter of the laterals. The distance between anterior median and anterior lateral about equal to that between the two laterals on each side. The eyes, however, vary considerably, being larger, and therefore apparently much closer together in younger specimens than in the old. There are no spines on the apex of the underside of the protarsus on the third leg, and the comb on the postero-inferior side of the fourth protarsus consists of a compact single row of about six or seven spines. The carapace is as long as the pat. + tib. + prot. of first leg, longer than those of the second, and nearly as long as the tib. + prot. + tarsus of fourth.

Measurements in millimetres (of large specimen).—Total length 33; carapace 14.5; second leg 22.5, its pat. + tib. + prot. 13.5; fourth leg 33.

The British Museum has received a large number of specimens of this species from Grahamstown (*Dr. Schönland*) and Brak Kloof, near Grahamstown (*Mrs. White*).

Stasimopus astutus, sp. n.

♀.—Very nearly allied to *S. Schönlandi*, but distinguishable by the relative size of the eyes of the anterior line. The laterals transversely elongated, reniform, their long diameter exceeding that of the medians, the space between the lateral

and median generally noticeably less than the diameter of the median, and always less, generally very much less, than the long diameter of the lateral; distance between the anterior and posterior lateral eyes on each side much greater than that between the anterior lateral and anterior medians.

Loc. Pearston (*Dr. R. Broom*) and Jansenville (*Miss Leppan*).

Although the relative size of the eyes and the distances between them are subject to considerable variation both with age and individuals, the six specimens presenting the above-described features may be at once distinguished from all the examples of *S. Schönlandi* that I have seen.

The females of this genus known up to the present time may be diagnosed as follows:—

- a. No comb of spines on apex of protarsus of fourth leg beneath on the posterior side *rufidens*, Auss.
- b. A comb of spines on apex of protarsus of fourth leg beneath on the posterior side.
 - a¹. Some spines on apex of protarsus of third leg beneath; comb on fourth protarsus consisting of about a dozen spines, the anterior of which are irregularly arranged and intermixed with adjacent setæ.
 - a². About fifteen strong spines on apex of third protarsus beneath; labial cusps 2; legs shorter *oculatus*, Poc.
 - b². About half a dozen weak spines on apex of third protarsus beneath; labial cusps 8; legs longer *artifex*, sp. n.
 - b¹. No spines on apex of third protarsus beneath; comb on fourth protarsus formed of a single definite series of 6-7 spines.
 - a³. Distance between the two lateral eyes on each side about equal to the long diameter of the posterior; anterior laterals much larger than anterior medians, the space between them less than the diameter of the medians. *astutus*, sp. n.
 - b³. Distance between the two lateral eyes never less than twice the long diameter of the posterior, and that between the anterior median and lateral not less than twice the diameter of the anterior median *Schönlandi*, Poc.

Genus PELMATORYCTER, nov.

Allied to *Cyртаuchenius*, but with the ocular area scarcely narrowed in front, the posterior line of eyes only the merest fraction wider than the anterior.

Eyes of the anterior line a little procurved, the anterior

edge of the medians about their own diameter behind a line touching the anterior edge of the laterals.

Spinning-mamillæ longish, the second segment longer than wide, the third nearly or quite as long as the second and longer than wide, acuminate, all the segments of both pairs of mamillæ studded below with numerous stout spinning-papillæ.

A rastellum of many spines on the distal end of the femur and the proximal end of the patella of the fourth leg.

Type *C. flaviceps*, Poc.*

Pelmatorycter colonix, sp. n.

Colour yellowish brown; mandibles darker than head; femora of anterior legs and palpi much darker than distal portion of the appendages.

Carapace a little longer than patella, tibia, and tarsus of palp and than tibia and protarsus of fourth leg, about equal to tibia, protarsus, and tarsus of first leg, nearly one fourth longer than wide, the width about equal to the patella + tibia of first leg.

Eyes of anterior line slightly procurved, subequally spaced, about a diameter of the medians apart, the laterals considerably larger than the medians and much larger than the posterior laterals, which are a little less than their own long diameter from the anterior laterals; posterior medians about midway between the anterior medians and posterior laterals.

Labium and *maxillæ* unarmed.

Mandible with an inner row of strong teeth and many smaller teeth irregularly arranged in two or three rows on the fang-groove. *Palpi* and anterior *legs* weak; tibia of palp armed below with strong spiniform setæ, the tarsus scopulate laterally and with a few spines below. Protarsus of first leg scantily scopulate, armed below with two basal and three distal spines, the tibia with only spiniform setæ below; claws with two complete rows of six or seven teeth. Second leg like the first, but with only two inferior distal protarsal spines. Third leg with patella armed in front with many short spines and a few above; tibia with many in front, four or five above, of which three form a definite series, and two or three distally behind, and one distal and setiform beneath; protarsus with two bands above, each consisting of about fourteen spines, three spines beneath (one proximal, two distal), and about three above the latter; tarsus with two rows of spines above, the anterior

* *Cyrtachenius flaviceps*, Poc. P. Z. S. 1898, p. 506, from British East Africa.

of three, the posterior of six, and with about eight spines below and in front. Fourth leg with its femur furnished distally above and in front with a rastellum consisting of many close-set curved spines; a few similar but shorter spines on the adjacent area of the patella; tibia with one setiform spine below; protarsus and tarsus with numerous spines below and in front, the former with one or two superior spines and the latter with none or one. Claws of third and fourth legs reduced in number, but still showing biserial arrangement. Second segment of posterior spinners longer than wide; third segment much longer than wide, nearly as long as the second and tapering.

Total length 18 millim.; carapace 7; first leg 14, second 13, third 10·5, fourth 15·5.

Loc. Jansenville (*Miss Leppan*).

The two species of this genus known to me may be diagnosed as follows:—

- a. Space between anterior and posterior lateral eyes on each side narrow, about one fourth only of the long diameter of the posterior lateral, the anterior not much higher and scarcely longer than the posterior; protarsus of first and second legs with 2+2 proximal spines; tibia of third with 3 spines in front, the upperside of its tarsus with 2 spines in front and 1 behind *flaviceps*, [Poc.
- b. Lateral eyes very unequal in size, anterior much longer and higher than posterior, space between them equal to at least half the long diameter of the posterior; protarsi of first and second legs with 1+1 proximal spines below; tibia of third with more than a dozen anterior spines, its tarsus with 3+5 spines above [sp. n. *colonæ*,

Genus HERMACHASTES, Poc.

Hermachastes fuliginus, sp. n.

♀.—*Colour.* Carapace and legs ashy black or ashy brown, upperside of abdomen paler ashy brown, without pattern of pale stripes; under surface pale.

Eyes of anterior line slightly procurved, subequally spaced, or the medians a little nearer the laterals than to each other, distance between them barely a diameter; laterals much larger than medians and larger than the posterior laterals, the space between them more than half the long diameter of the posteriors; posterior medians close to posterior laterals, almost as large as anterior medians, from which they are separated by a space a little exceeding the diameter of the anterior medians.

Carapace slightly longer than pat. + tib. of first or of fourth leg and than prot. + tarsus of these same appendages, distinctly shorter than tib. + protarsus of these same appendages.

Protarsus of first and second *legs* armed beneath with one basal, two submedian, and three apical spines, their tibiæ unspined.

Measurements in millimetres.—Total length 20 ; carapace 8 ; first leg 21, fourth leg 20.

Loc. Brak Kloof, near Grahamstown (*Mrs. White*).

This species differs from *H. collinus*, Poc. (Ann. & Mag. Nat. Hist. (7) vi. p. 319, 1900), from Table Mountain, principally in its uniformly blackish-grey colouring. The male will no doubt reveal other distinctive features.

Family Pisauridæ.

Thalassius Rossii, sp. n. (Pl. III. fig. 1.)

♀.—*Colour*. Carapace castaneous, the whole of the middle of the upperside covered with a mixture of red and white hairs, the red predominating ; a broad rich dark brown band on each side extending from the sides of the clypeus, which is separated from the lateral border by a yellow band formed of red and white hairs, the white predominating. Legs marked above with brown and white ; the patella and distal half of tibia brown ; femora of first and second whitish, of third and fourth white distally ; palpi covered with rusty-red hairs intermixed with white. Integument of upperside of abdomen yellow, thickly covered with a mixture of red and white hairs, the white predominating ; this pale field bounded laterally by a broad, sinuous, rich brown band ; the whole of the under-side tolerably uniformly testaceous.

Carapace rather low, slightly raised in the cephalic region, very distinctly longer than broad, longer than tibia of fourth leg, about as long as that of first ; ocular quadrangle very slightly narrowed anteriorly and slightly longer than wide. Anterior median eyes a diameter apart and about the same distance from the anterior laterals and a diameter and a half from the posterior medians, which are a little larger and barely a diameter apart.

Vulva transversely elongate, the lobes meeting in a longish median suture.

Measurements in millimetres.—Total length 14 ; carapace 6 ; first leg 22, fourth leg 24.

Loc. Durban (*A. Ross*).

This species resembles in its mottled coloration some West-

African species, but is distinguishable from all by the form of the vulva &c.

In addition to the spider here described, Mr. Ross sent to Mr. W. L. Distant, who kindly handed them on to me to determine, examples of the following species from Durban:—*Nephila pilipes*, *Cyrtophora citricola*, *Argyropeira Antinorii*, *Aranea nautica*, *Sparassus Spenceri*, and *Sparassus rufilatus*. With the exception of *Aranea nautica* and *Sparassus rufilatus*, all these species were recorded from Durban in my paper on the Arachnida of Natal published in 1898 (Ann. & Mag. Nat. Hist. (7) ii. pp. 197–226). *Sparassus rufilatus* is a particularly interesting capture, the species having been found previously only in the Cameroons. It was described by myself in 1899 (P. Z. S. p. 878) from a single male example. Mr. Ross also sent a male example from Natal. Slight differences are observable in the size of the eyes between the two, but the differences are not sufficient to justify the formation of a new species for the Natal specimen on the material available for comparison. In the synopsis of West-African species of *Sparassus* published in the above-cited work *S. rufilatus* is erroneously accredited with three pairs of inferior tibial spines on the first and second legs and *S. benitensis* with two pairs, instead of the other way about.

Rothus lineatus, sp. n. (Pl. III. fig. 2.)

As large as *R. catenulatus*, Sim. (Ann. Soc. Ent. Belg. xlii. p. 15, 1898), from Kimberley, and *R. auratus*, Poc., from Namaqualand. Colour variable, but apparently not different from that of a species from various parts of Cape Colony which I judge to be *R. vittatus*, Sim. Distinguishable from the other species by the form of the vulva.

In *R. auratus* and *vittatus* the rim of the vulva is thick and the median trilobate sclerite has its lateral lobes not impressed, and the anterior median fovea either scarcely invades the anterior border of the sclerite, which is thus superficially flat (*vittatus*), or extends only about as far as, or a little farther than, the middle of its area. In *R. lineatus*, on the contrary, the anterior fovea is large, semielliptical, and spreads backwards over the middle of the trilobate sclerite almost to its posterior border, dividing it completely into a right and left portion, each of which bears a deep impression; or perhaps the vulva might be appropriately described as having the median trilobate sclerite marked with three deep impressions; rim of vulva narrow, as compared with that of *R. auratus* and *vittatus*.

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6a.

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12.

R. catenulatus of Simon, which is unknown to me, is described as having the vulva impressed with a hairy, semi-circular, posteriorly thickly marginate fovea.

Measurements in millimetres.—Total length 15; carapace 5; first and fourth legs 23.

Loc. Queenstown, Cape Colony (*E. T. Wells*).

The British Museum has specimens that I refer to *R. vittatus* from Grahamstown (*Dr. Schönland*); Tea Fountain and Graaf Reinet (*Miss Leppan*).

Spencerella signata, sp. n. (Pl. III. figs. 4, 4a.)

♀.—*Colour.* Carapace with a broad median white band, covered with olive-yellow hairs laterally, whiter towards the margin; head and clypeus white; mandible covered with white hairs above; legs with greyish whitish-yellow hairs; upperside of abdomen with a broad median white band, olive-yellow at sides; under surface whitish, speckled; sternum with median white stripe.

Anterior lateral eyes more than two diameters apart, each about equidistant from its fellow and from the lateral angle of head; anterior medians small, a trifle more than a diameter apart and about two diameters from the posterior medians, whose radius they equal in size; quadrangle formed by the posterior median and anterior lateral eyes parallel-sided, about twice as long as wide, the anterior medians near the middle of the quadrangle, with their centres in a line with the inner edge of the posterior medians.

Vulva consisting of a subquadrate plate flanked on each side by an S-shaped sclerite, and with its anterior border deeply emarginate.

Measurements in millimetres.—Total length 13; carapace 4; first leg 18, fourth leg 17.

Loc. Grahamstown (*Dr. Schönland*).

Distinguished from *S. lineata*, Poc., from Durban (*Ann. & Mag. Nat. Hist.* (7) ii. p. 215, 1898), by having the anterior lateral eyes two diameters instead of one diameter apart, the anterior medians about a diameter instead of half a diameter apart, and only equal to the radius of the posterior medians, &c. (see Pl. III. fig. 5).

The genus *Spencerella* is very nearly related to *Maypaci* of Simon, which has representatives in tropical Africa and Madagascar; but, according to Simon's description of *Maypaci*, its species differ from those of *Spencerella* in having only two instead of three teeth on the posterior border of the fang-groove. *Maypaci* has two months' priority over *Spencerella*.

Euprosthénops pulchellus, sp. n.
(Pl. III. figs. 6, 6 a.)

Colour.—Integument of carapace deep brown, clothed with olive-black hairs, ornamented on each side with a narrow white stripe separated from the margin by a dark band exceeding it in width; cephalic region with a thin median stripe extending from between the posterior median eyes and a curved white line passing from the tubercles over the anterior median eyes; clypeus yellow, clothed with snow-white hairs; mandibles also yellow, naked below, and clothed externally and above with snow-white hairs; palpi and legs yellowish brown, clothed with a mixture of yellowish-brown and whitish hairs; coxæ yellow, spotted, clothed with white hairs like the sternum, which is black with a large pale median spot; abdomen blackish above, clothed with dark olive hairs, the dark field relieved by a thin median and a marginal silvery sinuous line; sides of abdomen blackish and silvery, lower surface pale, silvered, with two indistinct yellow bands.

Eyes of ocular quadrangle subequal, the quadrangle very noticeably longer than broad, the posterior eyes more, the anterior less, than a diameter apart, the posterior twice their diameter from the tubercle of the posterior lateral eye; quadrangle formed by the four posterior eyes not much wider behind than it is long.

Measurements in millimetres.—Total length 11; carapace 5; first and second legs 20, third 18, fourth 24.

Loc. Tea Fountain, near Grahamstown (*Miss Leppan*, type); Graaf Reinet (*Miss Leppan*).

Apart from the difference in colour and the form of the vulva, this species is easily distinguishable from *E. australis*, Sim. In the latter the eyes of the ocular quadrangle are very unequal; the ocular quadrangle is a little longer than wide, much narrowed in front, its anterior width being about half its posterior width; the anterior median eyes are much smaller than the posterior medians; posterior median eyes less than a diameter apart and about the same distance from the base of the tubercle of the posterior lateral eyes; quadrangle formed by the four posterior eyes about twice as wide as long, &c. Total length of adult female 24 millim.; carapace 9; fourth leg 50.

Family **Palpimanidæ**.

Palpimanus Leppanæ, sp. n.

♀.—At once distinguishable from the rest of the South-African species by the arrangement of the eyes; the posterior

line is straight and lies far back, the posterior medians are about five or six diameters apart, the distance between them is about two thirds the distance between either and the posterior laterals of the same side; median quadrangle very narrowed in front, very long, considerably more than twice as long as its posterior width and more than four times its anterior width. Eyes of anterior line close-set, procurved, lower edge of medians only a little higher than upper edge of laterals, which are much smaller; clypeus low, only about equal to the height of the quadrangle formed by the eyes of the anterior line, the laterals of which are about twice their diameter above it.

Length 7 millim.

Loc. Jansenville (*Miss Leppan*).

Family Drassidæ.

Platyoides pictus, sp. n. (Pl. III. fig. 7.)

♀.—Carapace and mandibles almost coral-red or pale yellow in the young; legs pale brownish red or yellow; abdomen ashy white, the upperside with a broad marginal black band and a median black, anteriorly bifurcating stripe; sternum with a dark marginal band.

Anterior median *eyes* a little larger than the laterals, slightly more than a diameter apart, a little nearer to each other than either is to the lateral; posterior medians large, larger than the anterior medians, elliptical, a little more than their long diameter apart, about twice as far from the posterior laterals as from each other.

Mandible with tooth below.

Legs without spines or long hairs; tarsi and protarsi lightly scopulate.

Horny plate of *vulva* impressed with a pair of semioval pits, opening behind and separated in front by a V-shaped process; between the lateral lobes of the vulva a somewhat tongue-shaped sclerite is traceable.

Total length 8 millim.; length of carapace 3, width 2.5.

Loc. Tea Fountain, near Grahamstown, Cape Colony (*Miss Leppan*).

Platyoides Leppanæ, sp. n. (Pl. III. fig. 8.)

♀.—*Colour.* Carapace and mandibles deep blackish brown; legs testaceous, infusate beneath and at extremities; sternum reddish brown, with a black rim; abdomen ashy or creamy white in alcohol, with a broad marginal black band and a median, posteriorly narrowing, black stripe.

Eyes of the anterior line subequal, medians barely a diameter apart and about three diameters from the laterals; posterior medians small, smaller than anterior medians, about four diameters apart and nearly six diameters from the posterior laterals.

Mandibles armed below with two strongish teeth.

Legs bristly, more thickly hairy distally, the tarsi and protarsi of the anterior pairs lightly scopulate beneath, the bristles on the base of the legs on the upperside spiniform.

Area of *vulva* with a median T-shaped horny plate, the upright of the T pointed at the bottom, each half of the cross-bar lightly arched and curled backwards at the extremity, circumscribing a shallow, irregularly transversely oval depression.

♂.—Like the female in colour. Legs longer. Palpus with patella and tibia short; tarsus large and inflated, furnished with a long filiform flagellum and below with a forwardly-directed spine ending in a small apical hook.

Measurements in millimetres.—♀. Total length 11·5; length of carapace 4·5, width 3·8; first leg 12·5, second 15, third 13, fourth 14.

♂. Length of carapace 3·5; length of first leg 14, of second 16, of third 13, of fourth 14·5.

Loc. Tea Fountain near Grahamstown (*Miss Leppan*).

Differs from the foregoing and from *P. laterigradus* and *pusillus* in colour, in having two mandibular teeth, and in the form of the vulva.

Apart from their coloration, the four South-African species of this genus known to me may be distinguished as follows:—

- a. Legs very smooth, without bristles or long hairs, clothed with short downy hair; protarsi and tarsi of first and second pairs with scopula of clavate hairs..... *pictus*, sp. n.
- b. Legs furnished with long bristles.
 - a². Eyes of anterior line not very unequally spaced, distance between median and lateral a little more than the diameter of the median; tibia and protarsus of first leg spined below..... *pusillus*, Poc.
 - b². Eyes of anterior line very unequally spaced, distance between median and lateral at least twice the diameter of the median; no spines, only bristles on the tibia and protarsus of first leg.
 - a³. Tibia and protarsus of first and second leg with short scopula of clavate bristles; distance between median and lateral eye on each side about twice the diameter of the median [Poc. *laterigradus*,
 - b³. Tibia and protarsus of first and second leg without scopula; distance between median and lateral eye on each side about three times the diameter of the median..... [sp. n. *Leppanæ*,

Family Heteropodidæ.

Selenops Marshalli, sp. n. (Pl. II. fig. 6.)

♂.—*Colour*. Integument ochre-brown, covered with a mixture of golden-yellow and blackish hairs; legs mixed with blackish.

Eyes as in *S. atomarius* and *Spenceri*; those of the median quadrangle strongly recurved, the posterior medians twice the diameter of the anterior medians, with their lower edges only a little lower than the upper edges of the anterior medians, the latter equidistant from each other and from the edge of the clypeus, *i. e.* a little more than their own radius; anterior lateral standing high above the edge of the clypeus, about on a level with the lower border of the posterior medians.

Tibixæ of first and second legs with seven pairs of inferior spines, protarsi with three pairs.

Palp with its tibia armed with four apophyses—one inferior, large, and irregularly quadrate; one projecting externally almost at right angles and somewhat conical in shape; and two much thinner and somewhat spiniform, which run forwards to abut against the outer side of the base of the tarsus—of these the outer is blade-like, straighter and shorter, being a little more than half the length of the inner, which is sinuous and upcurled apically; to abut against its upcurled apical portion the tarsus is furnished externally and basally with a distinct angular prominence.

Measurements in millimetres.—Total length 11; length of carapace 5.5, of first leg 26, of second 28.5, of third 30.

Loc. Estcourt (4000 feet), in Natal (*G. A. K. Marshall*).

Selenops Whiteæ, sp. n. (Pl. II. fig. 7.)

♂.—Nearly allied to the foregoing, but distinguishable by the structure of the palpal spurs &c. The lower tibial apophysis has a much wider and deeper notch on its outer side near the base, and its distal edge, instead of being straight and transverse as in *S. Marshalli*, is more oblique, the whole apophysis being longer than in that species; the external apophysis, moreover, has its apex not curved downwards and forwards, but directed straight externally; of the two forwardly-directed apophyses the outer is thinner, more cylindrical, and less blade-like than in *S. Marshalli*, while the inner has its upper margin convex in its basal half and concave in the distal, not evenly concave throughout as in *S. Marshalli*; and, lastly, in *S. Whiteæ* there is no

angular prominence on the base of the tarsus, only a small excrescence.

Measurements in millimetres.—Total length 12; carapace 5.5; first leg 29, second leg 30, third leg 32, fourth leg 36.5.

Loc. Brak Kloof, near Grahamstown (*Mrs. White*).

Selenops Schönlandi, sp. n. (Pl. III. fig. 15.)

Resembling *S. atomarius*, Sim., in having five pairs of inferior tibial spines on the first and second pairs of legs*, but much larger and with the eyes of the median quadrangle less strongly recurved, the posterior medians one fourth larger than the anterior medians, standing less than their own diameter above the clypeus, with their lower edge about on a level with the centres of the latter; the distance between the anterior medians a little greater than their radius and a little greater than the distance between the anterior and posterior medians.

Vulva consisting of a horny plate, marked on each side posteriorly with a crest twisted like a ram's horn, and separated by a median quadrate area which anteriorly expands and is furnished with a right and left anguliform prominence. In *atomarius* the crests are sinuous or lightly sigmoid, without the strong ram's-horn curvature.

Total length 16 millim.; carapace 6.5.

Hab. Cape Colony, Jansenville (*Dr. Schönland*, type) and Pearston (*Dr. Broom*); Graaf Reinet (*Miss Leppan*).

The British Museum has examples of *S. atomarius* from Port Elizabeth (*H. A. Spencer* and *Dr. Broom*) and from Brak Kloof, Grahamstown (*Mrs. White*).

The African species of *Selenops* occurring south of the Zambesi may be grouped as follows by the spine-armature of their anterior legs:—

A. Protarsi of first and second legs with 2 pairs of spines; tibiae with 3 pairs.....	<i>radiatus</i> , Latr.
B. Protarsi of first and second legs with 3 pairs of spines.	
a. Tibiae of first and second legs with 4 pairs of spines	<i>parvulus</i> , Poc.
b. Tibiae of first and second legs with 5 pairs of spines	<i>atomarius</i> , Sim.; <i>Broomi</i> , Poc.; <i>Schönlandi</i> , sp. n.

* In Ann. & Mag. Nat. Hist. (7) vii. p. 288 (1901), I forgetfully assigned seven pairs of tibial spines to *S. atomarius* in comparing it with *S. basutus*.

- c. Tibiæ of first and second legs with 6
pairs of spines *Kraussii*, Poc.
d. Tibiæ of first and second legs with 7
pairs of spines *Spenceri*, Poc.; *basutus*,
Poc.; *Marshalli*, sp. n.;
Whiteæ, sp. n.

Palystes Leppanæ, sp. n. (Pl. III. fig. 9.)

Dorsal integument palely castaneous, covered with hairs of a greyish-olive hue, with silky lustre, darker on the abdomen and mixed with white spots and blackish lines; clypeus with a yellow band; mandible with two similarly coloured bands above; sternum and coxæ clothed with bright golden-yellow hairs, the former with a pair of mesially interrupted transverse dark stripes; femora covered with olive-yellow hairs, speckled with clear yellow spots; patella yellowish white below; tibia with two yellowish-white and two black bands; abdomen with epigastric area covered with clear yellow hairs, a transverse black crescentic band behind the fold, and the rest of its area covered with a rich umber-red, mottled with numerous small yellow spots.

Vulva of the same type as that of *P. perornatus* (see Pl. III. fig. 10), but with the median sclerite heart-shaped, as wide as long, rounded laterally, bluntly pointed behind and stalked in front.

Total length 24 millim.; carapace 12; first leg 44, fourth 41.

Loc. Tea Fountain, near Grahamstown (*Miss Leppan*).

Belonging to the same category as *P. perornatus*, Poc. (Ann. & Mag. Nat. Hist. (7) vi. p. 331, 1900), but differing in the structure of the vulva and slightly in colouring, the white spots on the underside of the femora and abdomen being smaller and more numerous.

These two species and *lunatus*, Poc. (Ann. & Mag. Nat. Hist. (6) xvii. p. 60, pl. viii. fig. 5, 1896), which are evidently nearly related, to judge by the form of the vulva, may be distinguished as follows:—

- a. Sternum with two bands; femora unspotted; median
lobe of vulva very long. *lunatus*, Poc.
b. Sternum with a single anterior band; femora richly
spotted with white; median lobe of vulva short.
a¹. Median lobe of vulva longer than wide, its sides
straight; spots on abdominal femora fewer *perornatus*, Poc.
b¹. Median lobe of vulva as wide as long, heart-
shaped, with rounded sides *Leppanæ*, sp. n.

Palystes Whiteæ, sp. n. (Pl. III. fig. 11.)

♂.—Upperside of carapace and abdomen mottled with yellowish and brown hairs, the abdomen with a median, posteriorly obsolete, laterally angular band; some white hairs above the anterior eyes, no white clypeal band below them; mandibles black, without white bands, clothed with long greyish-yellow hairs above; upperside of appendages matching the carapace in tint; mouth-parts black; sternum black, with posterior angle pale; coxæ of legs yellowish red, spotted with black; femora olive, spotted with paler yellow and with an apical blood-red patch; patella white; tibia with a median and distal white band, for the rest black; scopulæ dusky olive-grey; lower side of abdomen pinkish yellow, marbled with black; a black patch in front of spinners.

Eyes of posterior line slightly recurved, of the anterior line straight by their centres, the medians about half the diameter of the laterals.

Palp with two tibial spurs, as in *P. cultrifer* (see Pl. III. figs. 12 & 12 a), one being external, just behind the middle, and quadrate in shape, the other distal, but short, stoutish, directed forwards with a slight upward inclination and a lightly hooked extremity; palpal organ furnished with two short processes running straight forwards from the bulb—an outer (the spine), stout, apically pointed, and hooked; the inner (the conductor) membranous, with an expanded, horny, flattened extremity.

Total length 15 millim.; carapace 8.5.

Loc. Brak Kloof, near Grahamstown (*Mrs. White*).

This species is nearly allied to *P. cultrifer*, Poc., and *P. lycosinus*, Poc. (Ann. & Mag. Nat. Hist. (7) vi. pp. 330-331, 1900), the three resembling each other in colour, except that in *P. Whiteæ* there is no black band behind the epigastric fold as in the other two, and there is a blood-red patch on the apex of the femora. Further approaching *cultrifer* in having two tibial spurs on the palpus of the male, but the posterior is short and quadrate, the distal also short and but little upcurled. Again, in *P. cultrifer* the style of the palpal organ is short and pointed, while the conductor is horny throughout, black, and hollowed.

Palystes scutatus, sp. n. (Pl. III. fig. 13.)

♀.—Resembling *Palystes distictus*, Poc., in colour. Posterior median *eyes* about a diameter and a half apart, a little further away from the laterals, the eyes of this line recurved, the centres of the laterals about on a level with the

posterior edge of the medians, subequal ; eyes of anterior line straight by their inferior edges, the laterals one fourth longer than the medians ; quadrangle scarcely narrowed in front, a little longer than wide.

Vulva smaller than that of *P. distictus*, formed of a horse-shoe-shaped sclerite, with a median piece wedged in between the two arms and filling the posterior half of its space, the anterior half being left empty and semilunar in shape.

Measurements in millimetres.—Total length 13 ; length of carapace 7, of first leg 26, of fourth leg 25.

Loc. Brak Kloof, Grahamstown (*Mrs. White*).

Neither of these species falls, strictly speaking, into the genus *Palystes*, and it is probable that they will have to constitute a separate genus by themselves. The eyes of the posterior line are distinctly recurved ; the ocular quadrangle is only a little longer than wide and only a little wider behind than in front ; the posterior lateral eyes are not elevated and the anterior lateral eyes are only a little larger than the anterior medians, which are as large as the posterior medians. There is, however, considerable variation in the eyes in the various species referred to this genus. The colouring, again, of the two known species is quite unlike that of all the South-African *Palystes*. The latter apparently may be grouped as follows :—

1. *P. castaneus*, *lycosinus*, *cultrifer*, *Whiteæ*, *mega-cephalus*, *Chaperi*.
2. *P. lunatus*, *perornatus*, *Leppanæ*.
3. *P. natalius* (= *Spenceri*), *Ellioti*, *Johnstoni*, *Höhneli*, *Fornasinii*.
4. *P. distictus*, *scutatus*.

Sparassus fonticola, sp. n. (Pl. III. fig. 14.)

Colour. Integument of the cephalothorax, jaws, and limbs reddish yellow, scantily clothed with pale hairs ; abdomen greyish yellow, faintly mottled.

Carapace as wide as long, a little shorter than patella + tibia of fourth leg and than tibia of second, and about equal to patella + tibia of third. Eyes of posterior line subequally spaced, scarcely procurved, laterals a little larger ; medians about four diameters apart ; quadrangle wider than long, narrowed in front ; anterior medians larger than posterior medians ; eyes of anterior line straight by their centres, subequally spaced ; medians larger than laterals, a little more than a diameter apart.

Legs 2, 1, 4, 3 in length; patellæ unspined; tibia of third with 1 superior subdistal spine, tibia of first and second pairs with 2+2 inferior spines; no apical pair of spines.

Vulva very large, consisting of a long cavity, open behind, with parallel sides, and an expanded and semicircularly rounded anterior extremity; this cavity is filled by a median flat sclerite with slightly expanded and rounded anterior extremity, parallel sides, and a truncate posterior extremity bearing a median tubercular prominence.

Total length 7 millim.; length and width of carapace 4; length of first leg 14·5, of second 16·5, of third 11, of fourth 13.

Loc. Tea Fountain, near Grahamstown (*Miss Leppan*).

EXPLANATION OF THE PLATES.

PLATE II.

Fig. 1. Outer view of right mandible of *Daesia bellula*, the form of the flagellum shown in outline.

Fig. 1 a. Apex of upper jaw of the same from beneath.

Fig. 2. Outer view of right mandible of *Ceroma pictulum*; flagellum cut short, its proximal end shown in outline.

Fig. 3. Outer view of jaws of *Broomiella lineata*.

Fig. 3 a. Inner view of upper jaw of same, to show flagellum.

Fig. 3 b. Tarsi of third and fourth legs of the same.

Fig. 4. Right palp of *Stasimopus palpiiger*, ♂.

Fig. 4 a. Distal end of the same.

Fig. 5. Outer view of tibia and tarsus of right palp of *Acanthodon ochreolum*.

Fig. 5 a. Distal end of tibia and proximal end of protarsus of first leg of the same.

Fig. 6. Outer view of tibia of palp of *Selenops Marshalli*, ♂.

Fig. 7. Outer view of tibia of palp of *Selenops Whiteæ*, ♂.

PLATE III.

Fig. 1. *Thalassius Rossii*, sp. n. Vulva.

Fig. 2. *Rothus lineatus*, sp. n. Vulva.

Fig. 3. *Rothus auratus*, Poc. Vulva.

Fig. 4. *Spencerella signata*, sp. n. Vulva.

Fig. 4 a. Ditto. Eyes represented in a horizontal plane.

Fig. 5. *Spencerella lineata*, Poc. Eyes represented in a horizontal plane.

Fig. 6. *Euprostenops pulchellus*, sp. n. Vulva.

Fig. 6 a. Ditto. Eyes represented in a horizontal plane.

Fig. 7. *Platyoides pictus*, sp. n. Vulva.

Fig. 8. *Platyoides Leppanæ*, sp. n. Vulva.

Fig. 9. *Palystes Leppanæ*, sp. n. Vulva.

Fig. 10. *Palystes perornatus*, sp. n. Vulva.

Fig. 11. *Palystes Whiteæ*, sp. n. Outer view of tibia of palp of ♂.

Fig. 12. *Palystes cultrifer*, Poc. Outer view of tibia of palp of ♂.

Fig. 12 a. Ditto. Vulva.

Fig. 13. *Palystes scutatus*, sp. n. Vulva.

Fig. 14. *Sparassus fonticola*, sp. n. Vulva.

Fig. 15. *Selenops Schönlandi*, sp. n. Vulva.

NOTE.

During the passage of this paper through the press I received a small consignment of Arachnida from Mr. Richard Crawshay, who collected them in Basutoland. Amongst them were two examples of a new species of *Palystes* which may be diagnosed as follows:—

Palystes Crawshayi, sp. n.

♀.—Colour of dorsal surface a fairly uniform greyish brown, obscurely mottled like the back of tarsi; pale clypeal band on base and two superior external pale bands on mandible; sternum yellow, with two black bands; coxæ yellow; femora greyish black below, conspicuously spotted with yellowish grey; epigastric area yellow; a transverse black band behind the epigastric fold, the rest of the lower surface dark red variegated with white spots.

Vulva with a deep and wide excavation, which is almost as wide as long, with its lateral margins converging and almost meeting in the posterior middle line; the anterior half of the space occupied by a skeletal piece, which is irregularly transversely oblong in shape and attached by a narrow "stalk" running from the middle of its anterior border to the adjacent anterior rim of the excavation, and laterally by a membranous piece to the anterior part of the lateral rim.

Total length 25 millim.; length of carapace 11.

Loc. Maseru, in Basutoland.

Closely allied in colouring &c. to *P. lunatus*, *perornatus*, and *Leppanæ* (see p. 23, *antea*), but differing in the form of the median sclerite of the vulva, which has its posterior border transverse and not produced. It resembles *lunatus* in the presence of two sternal bands and the other two in the spotting of the femora.

III.—Notes on some Recent Publications concerning Diatoms.

By P. T. CLEVE and C. MERESCHKOWSKY.

1. G. KARSTEN. "Die Diatomeen der Kieler Bucht." Wissenschaftliche Meeresuntersuchungen herausgegeben von der Kommission in Kiel: 1889, 4to.

This in many respects important publication will no doubt be for a long time a *vade mecum* for all students of living diatoms. The observations of the author concerning the formation of auxospores cannot be overestimated, and the