

Dimensions. Width of headplate 2.6; length of chelicera 4; pedipalp 11.5; leg IV, 17 (femur 6 and tibia-tarsus 11); total length 16.4 mm.

The species resembles *Unguiblossia cauduliger* in the ctenidia, undivided fourth tarsus and the spination of metatarsus and tibia II but differs completely in having normal claws without an elongate unguiculus; in the dentition and lengthening of the jaws it resembles *Unguiblossia* and *Daesiella* but in view of the claw character there seems to be no alternative to placing it in the genus *Lawrencega*; a distinctive feature of the species is the length and slenderness of the legs, especially the fourth pair.

Family DAESIIDAE

EBERLANZIA FLAVA Roewer

1 ♀, Desert Research Station, Gobabeb, South West Africa; collected by C. Koch, Nov. 1966.

The colouring of this female differs from my description (1962, p. 215) only in having the tergites of the dorsal surface of abdomen bisected by a fine purple longitudinal stripe composed of a narrow bar on each tergite; the last 2 or 3 tergites with a small blackish quadrilateral marking in the middle.

Family HEXISOPIDAE

HEXISOPUS FUMOSUS sp.n.

Fig. 7

Type, 1 ♂, in the Marienfluss between Otjinungua-Orupembe, N.W. Kaokoveld, South West Africa, collected by W. G. H. Coaton (T. 467), 24th April, 1966. Found running over coarse sand of dry stream bed at 6 p.m.

Colour. — Chelicerae and headplate dull reddish brown with an indistinct pattern of darker markings, e.g. headplate with a blackish anterior margin, behind this fine reticulation, a pair of narrow darker stripes diverging widely behind the ocular tubercle, headplate bisected by a narrow light stripe.

Three anterior tergites of abdomen darker than the others, smoky slate grey covered with blackish hairs, posterior segments light grey, all with a narrow posterior blackish margination, in the last seven segments these with a single regular row of brown setae, the remainder of the segment covered with long, fine, silky white hairs; ventral surface in general brown, lighter than dorsal surface, 3—4 basal segments of leg IV quite light, malleoli white.

Pedipalps dark brown, the tarsi much lighter, orange, but more or less infuscated at the base above; all legs brown, tarsi a little lighter, I and IV

especially so, with an orange tinge; all spines reddish brown.

Dentition. — Dorsal jaw with 3 well formed teeth, the second longest, the basal rather low and sub-tuberculiform, Fig. 7a. Ventral jaw without teeth, more or less as in *nigrolunatus* Kraepelin, one angular prominence anteriorly, the cutting edge fairly straight posterior to this and near the base a pointed tubercle which is not however distinctly dentiform, Fig. 7d. Outer surface of ventral jaw with fairly small close granules as in Roewers' fig. 241a of *nigrolunatus* except that his figure shows the inner surface. Seen from above, Fig. 7c, dorsal jaw at its apex as in *nigrolunatus* (fig. 241 a2, loc. cit.) and *swarti*, the inner process however not so large.

Flagellum as in Figs. 7a, 7e seen from inner and outer sides, in general resembling *lanatus* C. L. Koch and *swarti* Lawrence in having the basal half expanded and lamelliform but much more strongly so than in either of these species.

Setation resembling that of *swarti* in general; stridulatory organ with about 15 short weak lamelliform ridges, 3 or 4 more incomplete ones between them, the whole organ much longer (vertically) than wide horizontally. Both surfaces of dorsal jaw and inner surface of ventral jaw in basal half, thickly covered with long fine silky setae, obscuring the dentition.

Dimensions: Length of chelicerae (non in situ) 8; greatest width of headplate 8; length of abdomen 11.5; pedipalp 11.5; total length 21.3 mm.

The species agrees with *swarti* in the colouring of the trunk (but not of the appendages); in shape of ventral jaw it resembles *nigrolunatus* rather than the other species; the flagellum is like that of *swarti* and *lanatus* differing in detail from both of them. In the dentition of the dorsal jaw it resembles the females of *lanatus* Koch and *jodiens* Simon, with more strongly developed teeth than the males of most of the other species.

Order Scorpiones

OPISTHOPHTHALMUS CHRYSITES sp.n.

Fig. 6 (b, c)

Types, 1 ♂, 1 ♀, 30 miles N.W. of Ouhandjo, Kaokoveld, South West Africa, collected by W. D. Haacke, May, 1966.

A species of *Opisthophthalmus* C. L. Koch, belonging to the *wahlbergi* group in Hewitt's section (2), and probably most nearly related to *wahlbergi* Thorell.

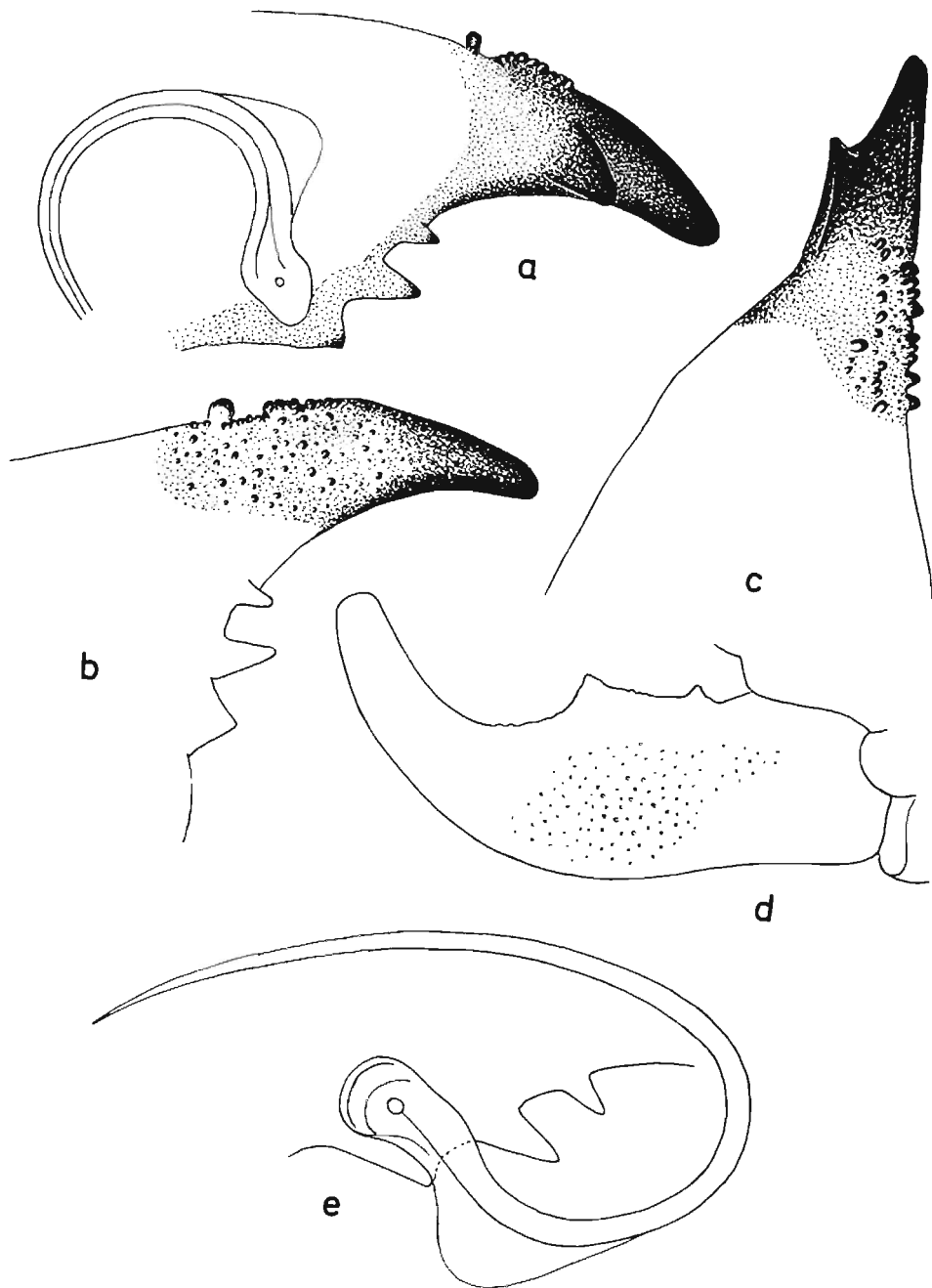


Fig. 7. *Hexisopus fumosus* sp.n. ♂. a, dorsal jaw and flagellum, inner view; b, apex of dorsal jaw, outer view; c, the same from above; d, ventral jaw, outer view; e, flagellum enlarged, inner view.

Male:

Colour. — Appendages and tail golden yellow, carapace similar but with a faint greenish tinge, tergites light olive green, sternites a little lighter.

Carapace. — Median eyes almost in the middle, a little nearer to posterior than to anterior margin; carapace a little longer than wide, the granules at sides and posterior to ocular tubercle moderately large, round, evenly distributed; interocular area shiny, almost entirely smooth, with a few minute scattered granules but more numerous just in front of ocular tubercle; anteriorly the median groove very weak, with no trace of a fork.

Abdomen. — Tergites shagreened, with fine regular dust-like granulation, V with enlarged granules laterally and posteriorly, an indistinct keel on each side composed of 5—6 granules; sternites smooth except for fine granules along their lateral margins, IV and V with some fairly distinct transverse, shallow, wavy grooves, the anterior sternites with only faint indications of these.

Cauda long and slender, especially segment V seen from the side; inferior surface of I and II smooth, III with faint indications of inferior keels which are distinct and granular in IV; I inferiorly with transverse grooves similar to those of sternite V; superior keels distinct but not strong, no enlarged posterior tooth, V with distinct superior and inferior keels, the superior much weaker in distal than in proximal half, the surfaces between them smooth (superior), almost smooth (lateral) or with irregular, fairly coarse scattered granules (inferior surface); infero-posterior edge with a collar-like transverse row of 11 small blunt equal sized granules; vesicle long, the bulb wider than segment V, with rather numerous long setae and a few weak low granules; aculeus long and slender.

Legs. — Neither tarsus III or IV with outer spines, inner surface with 4, lobes with 3 outer, 5 inner spines.

Pectines with the scape sharply angular at the base, a little more than 90°, toothed along its whole length, Fig. 6c; 21—23 teeth.

Pedipalp upper surface of humerus with a cluster of about 30 round granules in the middle, smooth at both ends; upper surface of hand almost flat forming a little more than a right angle with the outer surface, both surfaces thickly and uniformly covered with rather small sharp granules, not tubercles, some minute scattered ones amongst them; inner edge with a serrate row of larger projecting granules, finger keel well defined and strongly raised, with smooth granules in basal half; hand

parallel sided, distinctly longer than wide, handback about $1\frac{1}{3}$ as long as width of hand, movable finger $1\frac{1}{3}$ — $1\frac{1}{2}$ as long as handback.

Dimensions: Length of carapace 11.2, greatest width 10; handback 7.8, width of hand 5.8; tail 46, total length 78 mm.

Female:

Colour as in ♂, granulation of carapace at back and sides irregular, much weaker than that of ♂, composed of small granules intermingled with dust like granulation, interocular area completely smooth and shiny; tergites quite smooth, shiny, not shagreened except V which has minute dust-like lateral granulation; all sternites quite smooth, shiny; inferior surface of caudal segments I—III quite smooth and shiny, IV with indications of weak inferior keels; superior keels very weak, represented by rows of minute weak granules, those of V obsolete, consisting of an indistinct row of minute granules but inferior surface with 3 distinct granular keels, some dust-like granulation between them; granulation of inferior surface of vesicle, though stronger than in the ♂, still weak, with long scattered setae much sparser than in the ♂.

Legs. — Lobes of tarsus IV with 3 spines on each side, inner surface with 4 spines, outer with 0.

Pectines. — Almost half of the scape (basal portion) toothless, Fig. 6b; pectinal teeth 12—12.

Pedipalps. — Upper surface of hand weakly but distinctly rounded, not flat, the granules weaker than in the ♂, less regular, not so sharp, tending to be more tuberculiform and confluent, the whole surface nevertheless distinctly and completely covered with granules; upper and outer surfaces forming a more obtuse angle than in the ♂, finger keel strong but less raised; length of handback distinctly greater than its width, but only a little less than the movable finger.

Dimensions: Length of carapace 10.6, width 9.5; handback 7.5, width of hand 6; tail 37, total length 67 mm.

Additional material. — 1 ♀, Okotusu area, N.W. dunefield, South West Africa, with 10—11 pectinal teeth, the upper surface of hand a little less strongly granular but in all other respects identical with the type; total length 65 mm. 1 subadult individual from the same locality as the type, with 11 pectinal teeth; all collected by W. D. Haacke, May, 1966.

The species differs from typical *wahlbergi*, in its smaller size, smaller number of pectinal teeth,

grooved sternites of the ♂, granular upper surface of the hand in both sexes and a number of other details. It is probably nearest to Monard's *O. lundensis* (1937) as it differs from *wahlbergi* in the same characters, e.g. the number of pectinal teeth, as does this species. It can be distinguished from *lundensis* especially in the structure of the male, which is however not fully described. Monard however states that the sternites in both sexes are quite smooth which is not the case in *O. chrysites*, while the granules of the upper surface of the hand are arranged in "lignes reticulées". The colouring also appears to be somewhat different.

OPISTHOPHTHALMUS WAHLBERGI Thorell.

A single full grown male (total length 105 mm.) from Twee Rivieren, Kalahari (National Gemsbok Park), collected by C. Coetzee, Jan., 1966.

The specimen agrees fairly well with the description of typical *wahlbergi* except that the last sternite, though otherwise quite smooth and shiny, has a few indistinct transverse ripple-like wrinkles, especially in the posterior half; pectinal teeth 28—28.

It does not seem to be excessively hairy as claimed for this species by Hewitt (1935, p. 471). The specimen does not agree well with Penther's description of *O. betschuanicus* (1900, p. 160) which seems to have been based on an immature ♀. Hewitt's surmise that *betschuanicus* is a subspecies of *glabrifrons* is I think mistaken; it is much more closely related to *wahlbergi* as stated by the author and may be a subspecies of this form which seems to have produced quite a number of subspecific variations.

OPISTHOPHTHALMUS FLAVESCENS Purcell.

One adult ♀ collected by Dr. C. Koch on the sand dunes at Gobabeb.

This little known and peculiar species was first described by Purcell in 1898 from Walvis Bay. The eyes are unusually far back on the carapace, twice as far from its anterior as from its posterior margin. The superior terminal process on the posterior tarsi of legs is very thick and the claws are peculiar in being of different lengths and, unlike those of most species, long and almost straight, resembling in this respect *O. adustus longiceps* Lawrence from Orange-mund. The peculiar claw character at least must I think be attributed to an existence on sand.

Other recently recorded localities for the species are: Rooibank on the Kuiseb river; 9 miles N. of the Ugab river; an undefined locality E. of Luderitz.

Order Amblypygi

Subfamily PHRYNINAE

Genus HEMIPHRYNUS Pocock

Hemiphrynus Pocock, 1902, *Ann. Mag. Nat. Hist.*
(7) LX, p. 161.

HEMIPHRYNUS MACHADOI Fage

H. machadoi Fage, 1951, *Publ. Cult. Compan. Diam.*
Angola, Sep. N. 13, p. 13, fig. 5.

Figs. 6 (*d, e*) and 8 (*b*)

One almost mature ♂, Otjinunga, N.W. Kaokoveld, South West Africa, collected by W. D. Haacke, 9-V-1966. Specimen in the collection of the Transvaal Museum.

This species is recorded for the first time from Southern Africa.

Colour. — Carapace dark brown, pedipalps except tarsus blackish brown, pedipalp tarsus and chelicerae reddish, abdomen above brown with olive green tinge, legs similar, I with reddish tinge.

Carapace with small granules evenly distributed over whole surface except interocular areas, much fewer, smaller and more widely separated than those of pedipalp; anterior margin quite smooth, granules only present at antero-lateral angles and in a row along the lateral margins, disappearing behind the level of the lateral eye tubercles, these granules distinct and pointed. Median tubercle separated by less than $\frac{1}{3}$ its diameter, lateral ones by distinctly more than their diameter, from edge of the carapace.

Pedipalps covered by small round granules, not dense but very regularly spaced, similar to but larger than those of the carapace. Tibia distinctly exceeding length of carapace, a little shorter than width of carapace which is equal to tibia and $\frac{1}{7}$ tarsus, its antero-superior edge with 9 spines, the fourth from proximal and fourth from distal ends longest, about equal to height of segment, the spine between them next longest, on each side of it a small spine; at distal apex 3 short spines, the middle largest. Inferior edge with 5 spines, the third from base longest, between the main spines a comb-like row of short pointed spines.

Femur with six small to moderate spines on its dorsal edge, the second and fourth moderately long but shorter than those of ventral row; ventral edge with 4 or 5 spines, only the first and third long, a little less than height of segment, the first longer than third, between these 13—15 much shorter triangular pointed spines.