

Cyphocerastis sp. n. and Brainia sp. n. from sub-saharan Africa

(Acridoidea: Coptacridinae and Gomphocerinae)

by

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Abstract: Descriptions and figures of *Cyphocerastis ulugurensis* sp. n. (*Coptacridinae*) from Uluguru Mts., Tanzania and *Brainia holmi* sp. n. (*Gomphocerinae*) from SW Namibia.

Cyphocerastis ulugurensis sp. nov.

Fig. 1-2 (*Coptacridinae*)

Material: 1 female holotype (unique) labelled: „Tanzania, Uluguru Mts. Kimboza Forest 300 m. 1-XII-1984 M. Stoltze leg. Zool. Museum, Copenhagen". The holotype is kept in the mentioned museum.

Description of female holotype:

Antennae 24-jointed, long and thin, reaching to base of hind femur, slightly widened in apical third; all joints of flagellum depressed, especially in its apical third.

Compound eyes in lateral view egg-shaped.

Fastigium of vertex sloping forwards, with a central shallow depression, without median carinula, somewhat truncate anteriorly, its lateral carinulae not well marked except in the interocular space, where the carinulae meet, forming a narrow fissure between themselves. Interocular space very narrow, only as wide as pedicellus. Frontal ridge flat, coarsely punctured, somewhat widened between antennae, below with rather parallel sides but vanishing some distance above clypeus.

Pronotum in prozona subcylindrical, in metazona flattened laterally on disc, crossed by three very deep sulci; entire integument coarsely pitted; metazona a little shorter than prozona, its disc obtuseangular behind. Median carina not well marked on pronotum and only present in metazona. Prosternal process oval in cross section, tapered to a rounded apex. Mesosternal interspace transverse. Metasternal interspace spathulate in outline. Meso- and metasternal integument with scattered small pits and areas with fine longitudinal wrinkles.

Tegmen and wing in resting position just surpassing apex of abdomen, but not of ovipositor. Tegmen narrow, tapered towards rounded apex. Wing with expanded vannus giving a rather squarish impression, its ratio length to width 1.6, in resting position reaching as far as tegmen.

Hind femur rather robust, its ratio length to depth 3.5. Hind tibia much shorter than hind femur, pilose with 9 inner and 7 outer spines, the outer

terminal spine absent, the spurs short. All aroliae large, but shorter than claws.

Ovipositor valves long, slender and straight without teeth or terminal hook.

Measurements: Length of body 22.7, pronotum 4.5, tegmen 14.8, hind femur 12.2 and of hind tibia 8.9 mm.

Coloration generally shiny black and bright yellow. Antennal scapus and pedicellus with outer half yellowish and inner half blackish; flagellum generally blackish, joints 1-10 with pale, narrow ring apically, joints 11-23 all blackish, ultimate small joint pale. Compound eye pale brownish. On head, thorax, tegmen and hind femur the black design is evident from the figures; and the white in the figures A, C & I represent bright yellow. The first and middle pair of legs are of a more dirty yellow colour. Hind tibia mainly blue, at base black followed by a pale, narrow annulus; the apex black. Abdomen mottled with the terga brownish in upper part and more yellowish in the lower part; tergal hind margins lined with greyish blue. Frontal ridge with black design along its midline. The black design of outer side of hind femur continues, on a yellow background, to its inner side, where the two transverse black bands in the middle section of femur cover upper marginal area and inner medial area; the basal black fascia of outer side continues on inner side on upper inner marginal area only, but changes from black to blue on inner side; the knee region black as on outer side.

Tegmen black and yellow with the black forming three longitudinal lines. Hind wing with disc pale blue; outer half of its front margin narrowly infuscated, its hind margin from apex to inner hind angle rather widely infuscated.

Male unknown.

Differential diagnosis. The sp. n. is different from *laeta* KARSCH, 1891, in the absence of red colour on inner side of hind femur and in the non-hooked ovipositor valves and the sp. n. is different from *tristis* KARSCH, 1891, in the blue colour of hind tibia (red in *tristis*). The sp. n. is different from *pulcherrima* RAMME, 1929, in the much longer tegmen and wing. The sp. n. is different from *hopei* BRUNNER, 1920, in the longer tegmina, in the blue disc of wing and in the blue hind tibia. The sp. n. is different from *clavareui* I. BOLIVAR, 1909, in the transverse black bands of outer side of hind femur (in *clavareui* longitudinal brown stripe). The sp. n. is different from *falcifera* (REHN, 1914) in the more robust hind femur of quite different colour design. The sp. n. is different from *stipatus* (WALKER, 1870) in the bicoloured tegmen and inner side of hind femur as well as in the blue hind tibia. The sp. n. is different from *elegans* RAMME, 1929 in the bicoloured lateral lobe of pronotum (unicolourous in *elegans*) and in the blue hind tibia with antebasal pale annulus. Finally the sp. n. is different from *scheunemanni* RAMME, 1929, in the blue hind tibia, in the more extended infuscation of hind margin of wing reaching to inner edge (in *scheune-*

manni at most halfway) and in the separation of the black design of outer medial area of hind femur (coherent in *scheunemanni*).

Discussion. When studying the distribution (DIRSH 1965, 1970. JOHNSTON 1968. DESCAMPS and DONSKOFF 1968. GILLON 1974. JOHNSEN 1981) of the nine previously recognized species of the genus the sp. n. appears to be disjunct from the other members of the genus. *C. pulcherrima* is restricted to the western „forest block“ of W. Africa (Guinea, Sierra Leone, Ivory Coast), *scheunemanni*, *laeta* and *hopei* have only been recorded from Cameroun, *tristis* from Cameroun, Equatorial Guinea and Congo Republic; *elegans* is only known from Zaire, *clavareui*, *stipatus* and *falcifera* occur in both Zaire and Angola - *falcifera* in Uganda as well. Last mentioned species is the one recorded closest to Uluguru Mts. - but still more than 1000 km from these mountains. Thus the sp. n. might be considered as an isolated E. African remnant of an otherwise W. and Central African forest genus.

The rather special development of the ovipositor valves in the n. sp. might be an adaption to egg-laying in humid and soft media. A similar ovipositor with slender and straight valves without terminal hook is found in other forest *Acridoidea*. This is the case in the Malaysian genus *Anacranae* MILLER, 1934 (*Catantopinae* s. l.) living in the interior of jungle (WILLEMSE 1957), and also in some neotropical genera of forest grasshoppers classed among *Romaleidae*: *Bactrophorinae* and *Acrididae*: *Proctolabiinae* and *Omatolampinae* (according to figs. in DESCAMPS 1976, 1977 & 1978).

Brainia holmi sp. nov.

Fig. 3 (*Gomphocerinae*)

Material: Male holotype (unique) in the Transvaal Museum, Pretoria, Rep. of S. Africa, labelled: „NO van Oranjemund SE 2816 Cb VII-1982 E. HOLM“. This locality NE of Oranjemund is in the SW corner of Namibia.

Description of male holotype:

Head subglobular with fastigium strongly sloping forwards and roundly merging into frons. Along upper, anterior edge of the compound eyes with strongly raised but relatively short carinulae; these end just above the lateral ocelli. The inter-ocular distance twice the width of scapus. Frontal ridge in upper part depressed between its lateral carinae; below median ocellus the ridge with vanishing lateral carinae. Genae and frons with sparse white hairs.

Antennae 21-jointed, somewhat shorter than combined length of head and pronotum, in dorsal view markedly widened in apical third.

Pronotum with few scattered white hairs; its length about equal to length of head; constricted in the middle, somewhat saddle shaped but disc very flat, especially in metazona; without lateral carinae; metazona somewhat longer than prozona; all sulci, except typical, only vaguely indicated; metazonal disc laterally, close to its hind margin, with a pair of callous elevations of oval outline; hind margin of pronotum obtusely rounded.

Mesosternal interspace transverse, in the middle more than four times as wide as long.

Tegmen along its front margin rather excurved, widest apically to its middle, its apex abruptly tapered; medial area somewhat expanded and with transverse veinlets only, i.e. with one row of cells only.

Thorax with very few, white hairs standing well apart; the femora especially the middle pair pilose.

Hind femur exceed apex of abdomen and is surpassed by the folded tegmina; the ratio length to depth of hind femur 4. The stridulatory file is extremely well developed for the small size of the species and consists of 72-74 close set, conical pegs.

Hind tibia with 8 outer and 11 inner spines; the inner spurs, of equal length, reach to apex of 1st joint of tarsus; these spurs hollowed dorsally - apparently adapted for digging. Aroliae of all legs shorter than the claws.

Cerci laterally compressed, incurved, in profile tapering toward apex, but before apex suddenly and obliquely as if „cut off“. Supraanal plate rounded behind, basally with a pair of flat tubercles. Subgenital plate short, hemispherical.

Measurements. Length of body 8.1, of hind femur 6.4, of tegmen 7.6, and of hind tibia 5.6 mm.

Coloration. General coloration pale ochre. Hind femur with outer side and lower inner area approaching whitish, its knee region dorsally brownish. Pronotal disc with a pair of brownish spots laterally at anterior margin and a similar pair at posterior margin. A blackish spot on lateral lobe of pronotum in the oblique, central suture. Tegmen mainly transparent with few scattered blackish spots. Wings transparent and colourless. Front tibia and middle femur and tibia rather vaguely annulated with blackish. Hind tibia uniform pale whitish except ventral side of apex, which is blackish.

Female: Unknown.

Etymology: The new species has been named after the collector, prof. Erik Holm, Department of Entomology, University of Pretoria, Rep. of South Africa.

Differential diagnosis of male. The only species previously known in this genus was *B. hirsuta* UVAROV, 1922, described in the female sex only. Later the male was described by SJÖSTEDT (1932) and depicted by DIRSH (1965). *B. holmi* is very much like *hirsuta*, but is different from the latter in the more rounded pronotal hind margin (more angulate in *hirsuta*), in the strongly widened apical part of antenna (slightly thickening towards apex in *hirsuta*), in the single row of cells in medial area of tegmen (two rows in *hirsuta*), in the longer inner spurs of hind tibia, in the scattered blackish spots of tegmen (two transverse brown bands in *hirsuta*), and in the whitish hind tibia (bluish in *hirsuta*).

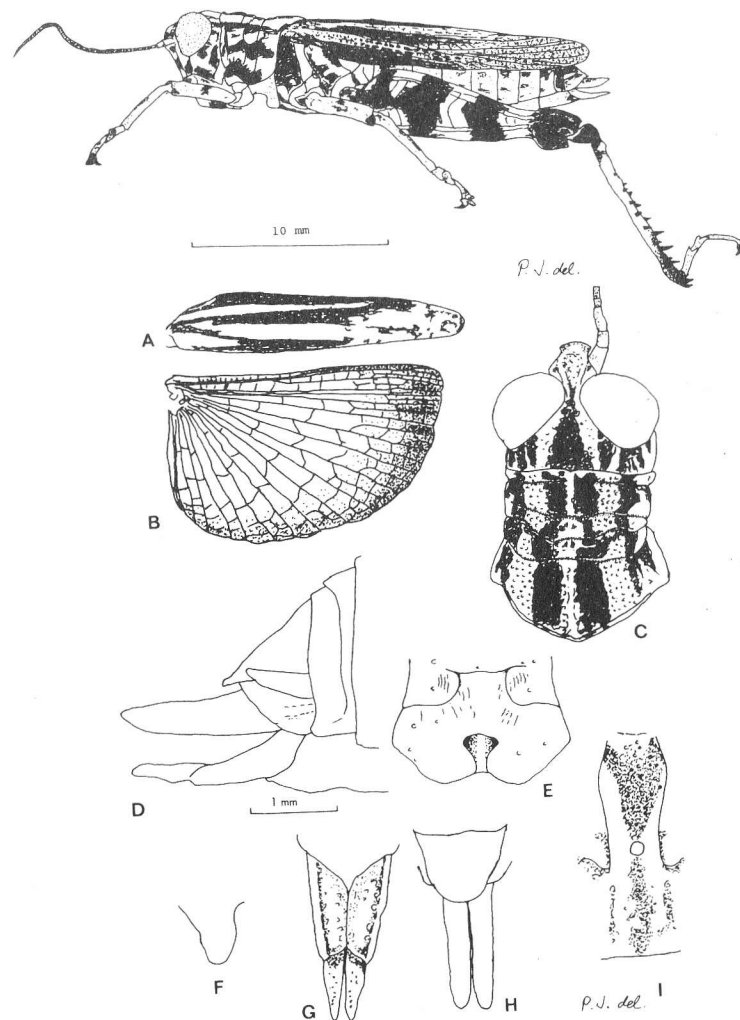


Fig. 1. *Cyphocerastis ulugurensis* sp. n. Female habitus. Holotype.
Fig. 2. *Cyphocerastis ulugurensis* sp. n. Female holotype. A: Tegmen, outline and pigmented design. B: Wing, dotted represent infumation. C: Head and pronotum, dorsal view. D: Apex of abdomen, lateral view. E: Meso- und metasternal interspace. F: Prosternal process, apex, lateral view from left side. G: Lower ovipositor valves, ventral view. H: Upper ovipositor valves and supra-anal plate, dorsal view. I: Frontal ridge, dotted fields show blackish pigmentation.

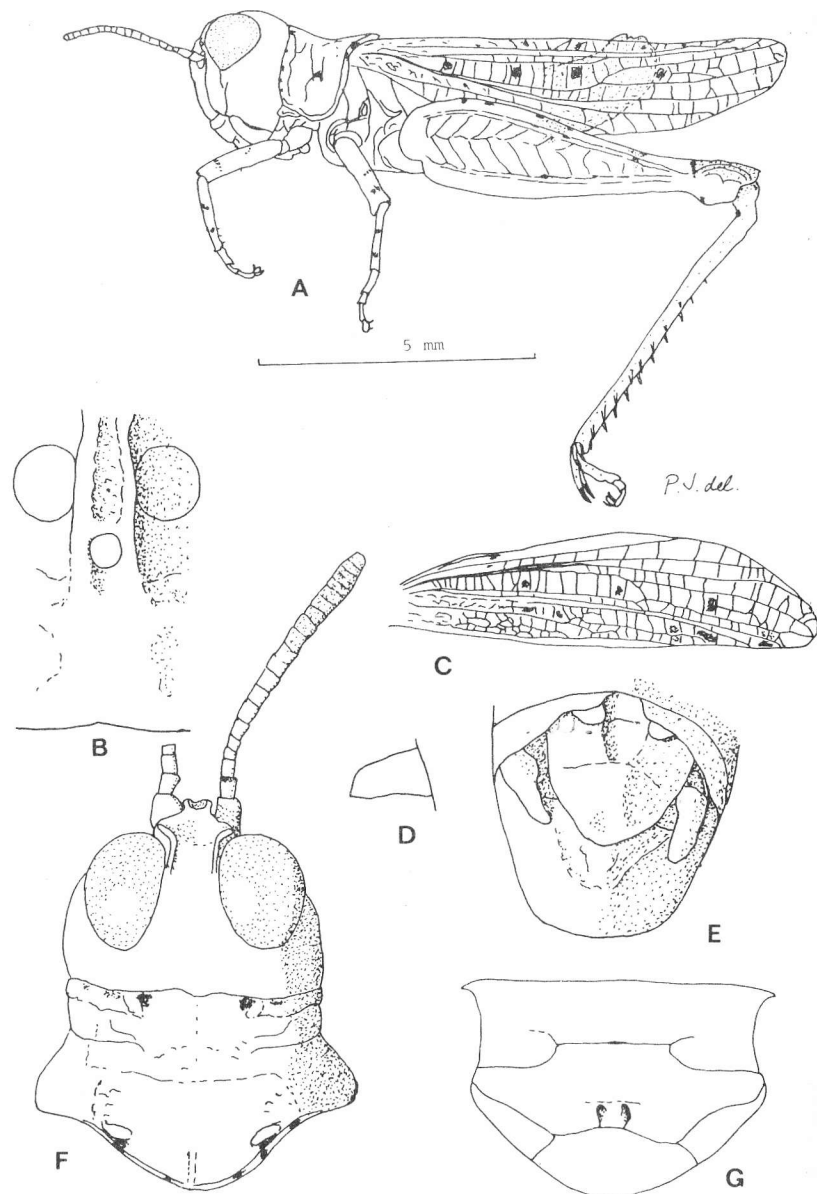


Fig. 3. *Brainia holmi* sp. n. Male holotype. A: Habitus. B: Frontal ridge. C: Tegmen. D: Left cercus, lateral view. E: Apex of abdomen. F: Head and pronotum. G: Meso-metasternum.

The existing measurements indicate the n. sp. to be a smaller species than *hirsuta*, but intraspecific variation is unknown in both species.

References

- DESCAMPS, M., 1976. La faune dendrophile neotropicale I. *Acrida* 5: 63-167.
- DESCAMPS, M., 1977. Etude des ecosystemes guyanais I. *Annls. Soc. ent. Fr. (N.S.)* 13(2): 193-236.
- DESCAMPS, M., 1978. La faune dendrophile neotropicale II. *Bull. Mus. natn. Hist. nat. Paris 3^e Ser.*, no. 517. *Zoologie* 355: 371-476.
- DESCAMPS, M. & DONSKOFF, M. (1968). Contributions a la faune du Congo (Brazzaville). *Bull. IFAN* 30(A) (3): 1198-1235.
- DIRSH, V., 1965. The African genera of Acridoidea. Cambridge Univ. Press. 579 pp.
- DIRSH, V., 1970. Acridoidea of the Congo. *Mus. R. d l'Afrique Centrale. Ann. Ser. in -8^o. Sc. Zool.* no. 182: 1-605.
- JOHNSEN, P., 1981. Notes on West African *Acridomorpha* DIRSH 1966. *Ent. Scand.* 12: 151-157.
- JOHNSTON, H.B., 1968. Annotated Catalogue of African Grasshoppers. Suppl. Cambridge Univ. Press.
- SJÖSTEDT, Y., 1932. *Acridoidea* aus Südwest-Afrika, Klein Karas. *Soc. Ent. Fr. Livre centenaire*.
- UVAROV, B., 1922. On some new or little known South African Grasshoppers. *Ann. & Mag. nat. Hist.* (9) 9: 99-113.
- WILLEMSE, C., 1957. Synopsis of the *Acridoidea* of the Indo-Malayan and adjacent regions Part II. *Publicaties van het Natuurhist. Genotschap in Limburg.* Reeks X.

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