

Afrotropical species of the genus *Condylostylus* Bigot (Diptera: Dolichopodidae)

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C. galinae sp. n. from Uganda, male of *C. paricoxa* Parent from Kenya are described. Catalogue and a key to 12 known species of *Condylostylus* are given.

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Key words. Diptera, Dolichopodidae, *Condylostylus*, Tropical Africa.

Introduction

The genus *Condylostylus* is a wide spread pantropical taxon. It contains approximately 308 described species with a huge diversity in Neotropical Region (230 species) and a small number of species in southern Nearctic, far-eastern Palearctic and other Regions (Bickel, 1994). Twelve species of the genus occur throughout Africa south of latitude 10 centigrades North including Madagascar. Probably a few afrotropical species of *Condylostylus* await description. The species of *Condylostylus*, contrary to that of other sciapodine genera, are well recognized by strongly recurved vein M_1 , four strong scutellar and five pairs of strong dorsocentral bristles, and setose mound on the frons, bearing vertical seta. Males of afrotropical species of the genus sometimes have abnormal wing venation (*C. pateraeformis* group), very narrow face and greatly reduced hairs on the frontal mound (the same group and *C. burgeoni* group), relatively short (*C. paricoxa*) or bifurcated (*C. selectus*) cercus. In this paper first descriptions of *C. galinae* sp. n. and male *C. paricoxa* Parent, and new records for known species are given on the basis of the collections from the Natural History Museum, London (NHML), the Hungarian Natural History Museum (HNHM), and the Institut Royal des Sciences Naturelles, Brussels (IRSN). Holotype and paratypes of the new species, as well as a male of *C. paricoxa*, are conserved in the Natural History Museum (London).

List of known species of *Condylostylus* (for references see Dyte & Smith, 1980)

- Condylostylus* Bigot, 1859: 215. Type species *Psilopus bituberculatus* Macquart, 1842, original designation.
- angustipennnis* Loew, 1858: 372 (1860: 346) (*Psilopus*) — South Africa.
- beckeri* Speiser, 1920: 218 — Cameroun.
- burgeoni* Parent, 1935: 115 — Zaire, Tanzania, Kenya (!), Ruanda (!).
- congensis* Curran, 1927: 263 — Congo, Cameroun, Zaire, South Africa, (?) Madagascar, Uganda (!), Tanzania (!).
- degener* Parent, 1934: 119 — South Africa.
- galinae* sp. n. — Uganda.
- imitator* Curran, 1924: 221 — Zaire, Kenya, Tanzania, Malawi, Zimbabwe, Mozambique, South Africa, Angola (!), Namibia (!).
- = *imitans* Curran, 1925: 114 (replacement).
- kivuensis* Vanschuytbroeck, 1964: 136 — Zaire.
- paricoxa* Parent, 1939: 267 — Kenya, Zimbabwe, Tanzania (!).
- pateraeformis* Becker, 1923: 38 — Cameroun, Nigeria, Zaire, Uganda, Tanzania, South Africa, (?) Madagascar, Kenya (!).
- = *alter* Becker, 1923: 38.
- selectus* Parent, 1931: 43 — Malawi, Zaire.
- stenurus* Loew, 1858: 377 (1860: 346) (*Psilopus*) — South Africa, Zimbabwe (!).
- = *sicatrix* Curran, 1926: 389.

Key to known species of *Condylostylus*

Males

1. Fore tibia with two long apicoventral setae, half as long as fore basitarsomere *paricoxa* Parent
- Fore tibia without such setae, at most with a long apicoventral hair 2
2. Cercus bifurcated, with long narrow branches *selectus* Parent
- Cercus not bifurcated, usually long, sometimes short, with prominence 3
3. Middle tibia with a row of long dorsal setae, femora bare 4
- Middle tibia with a few usual anterodorsal and posterodorsal bristles, or femora with long hairs 5
4. Cercus nearly twice as long as 7th tergum and epandrium together *burgeoni* Parent
- Cercus nearly thrice as long as 7th tergum and epandrium together *galinae* sp. n.
5. Hind tibia with black ventral cicatrix (callus-like swelling) in basal third, covered with light hairs *stenurus* Loew
- Hind tibia without such cicatrix 6
6. Pedicel with long ventral and dorsal setae, as long as three antennal segments together; costa with curvature in front of R_1 ; posterior wing edge sinuous *angustipennis* Loew
- Pedicel with usual setae, at most as long as scape and pedicel together; costa without curvature 7
7. Wing with normal female-type venation *degener* Parent
- Venation abnormal: M_{1+2} curved towards posterior wing border, M_1 continued nearly in the same line as M_2 8
8. Fore tibia enlarged, fore tarsus simple *beckeri* Speiser
- Fore tibia simple, fore basitarsomere enlarged 9
9. M_{1+2} and M_1 form acute angle *pateraeformis* Becker
- M_{1+2} and M_1 form right angle 10
10. Fore coxa brown, middle and hind coxae black, legs brown, first tarsomere of fore tarsus longer and wider than in *C. congensis* and *C. imitator*, cercus longer, than in those species *kivuensis* Vanshuytbroeck
- Other combination of features 11
11. Fore coxa black at least in basal half; fore femora brown-black *congensis* Curran
- Fore coxa and femora yellow *imitator* Curran

Females

1. Middle coxa mostly yellow . . . *paricoxa* Parent
- At least middle coxa mostly brown or black . . 2
2. Squamae with black ciliae *stenurus* Loew
- Squamae with yellow ciliae 3
3. Wing anal lobe and angle absent *burgeoni* Parent, *galinae* sp. n.
- Wing anal lobe present, anal angle obtuse or acute 4
4. Hind femora yellow, at most with black spot on apex *imitator* Curran
- Hind femora partly black 5
5. Frons blue-violet *pateraeformis* Becker
- Frons green *congensis* Curran

Descriptions and new records

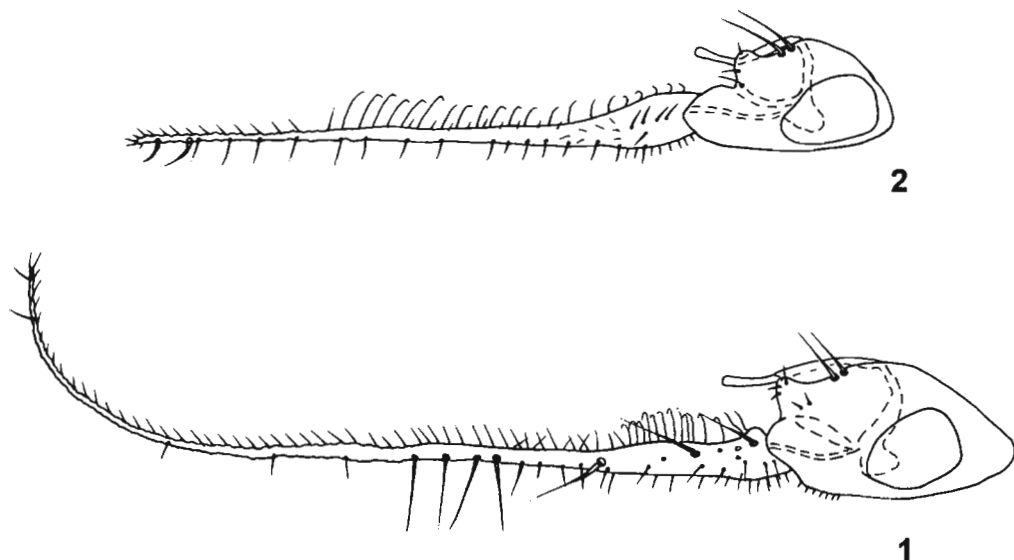
Condylostylus galinae sp. n.

(Fig. 1)

Holotype. Male. **Uganda**: Ruwenzori Range, XII. 1934—I. 1935. B.M.E.Afr. Exp. B.M.1935—203 / Namwamba Valley, 6500 ft (F. W. Edwards).

Paratypes. 2 males and a female, the same labels.

Description. Frons metallic blue-green, mostly white pollinose. A strong front vertical bristle bends forward, arising from small mound; this mound usually bare, at most with one fine dark hair; postvertical bristle is positioned as a linear continuation of the postocular setal row. Ventral postcranium covered with irregular white hairs. Face black, silvery-white pollinose, narrow, 10 times as high as wide in the middle. Bulging clypeus nearly half as wide as epistome under antennae. Proboscis orange-brown, palpi black, with numerous light hairs. Antennae black, as long as height of head. Pedicel with short dorsal and ventral bristles. First flagellomere rounded, as long as its height, densely pubescent. Arista dorsal, microscopically haired. Length ratio of scape to pedicel to first flagellomere to arista — 7 : 6 : 8 : 85. Mesonotum and scutellum brilliantly shining green-violet. Pleura bronze-green, white pollinose. Dorsocentral bristles gradually decreasing in size anteriorly with two strongest posterior pair. Short acrostichals in two rows, restricted to anterior half of mesonotum. Scutellum with two pair of strong bristles, with lateral setae somewhat smaller. Legs dirty-yellow. Middle and hind coxae dark-brown, whitish pollinose, middle and hind femora more or less brownish in apical half, hind tibia brown, hind tarsus and apical segments of other tarsi black. Fore coxa from the front with numerous yellow hairs. Middle and hind coxae from the outside with a few yellow hairs. Femorae without strong or long bristles and hairs. Middle tibia with a posterodorsal bristle. Fore tibia with a



Figs 1, 2. Hypopygium, lateral view.
1, *C. galinae* sp. n.; 2, *C. burgeoni* Parent.

long black apicoventral hair. Fore basitarsomere flattened in apical half. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 1.7 : 2.6 : 3.2 : 2.4 : 0.8 : 0.6 : 0.4 : 0.2. Middle tibia slightly flattened in basal two thirds, with 8—9 long black dorsal hairs in middle half, with irregular ventral pectination in second quarter. Fourth tarsomere enlarged, with a few long black dorsal setae. Fifth tarsomere with a brush of short erected ventral hairs. Length ratio of middle coxa to femora to tibia to tarsus (segments from first to fifth) — 1.4 : 4.0 : 6.0 : 4.3 : 0.7 : 0.4 : 0.3 : 0.9. Last tarsomeres of hind tarsi slightly thickened. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 1.0 : 5.3 : 7.1 : 3.7 : 1.0 : 0.7 : 0.5 : 0.4. Wings hyaline, slightly darkened in anterior part, veins brown. R_{4+5} gently curved to M_1 in apical fifth. M_1 slightly curved basad. Ratio of parts of costa between R_{2+3} and R_{4+5} to those between R_{4+5} and M_1 — 45 : 7. Crossvein $m-cu$ straight. Ratio of crossvein $m-cu$ to apical part of M_{1+2} (fork-handle) to apical part of CuA — 43 : 63 : 18. Anal vein and lobe reduced. Anal angle absent. Squamae yellow, with brown apex and pale bristles. Halteres yellow with brown knob, halter stem thin and long. Abdomen thin and long, mostly black, with short black hairs. First two segments and apical border of third to sixth segments metallic green-violet; first tergum with broad membranous excavation and long white lateral hairs. Unmodified segments together nearly 4 times as long as mesonotum. Hypopygium black, with short black hairs. Cercus long, filiform, brown, laterally with a row of long black

bristles in basal half, ventrally densely setose with short curved light hairs. Cercus nearly thrice as long as seventh tergum and epandrium together. Surstylus and epandrial lobe greatly reduced.

Female. Similar to male except lacking male secondary sexual characters, otherwise as follows: face 5 times as high as wide in the middle. Legs mostly yellow, middle and hind coxae, hind tibia and knee brownish, hind tarsus and apical tarsomeres of other tarsi dark-brown. All coxae with additional 1—2 dark hairs. Middle tibia with one anterodorsal and two posterodorsal bristles. Ratio of first to second tarsomere of fore, middle and hind legs — 9.5 : 2.5; 12.5 : 3.0; 10.3 : 3.5. Wing with indistinct dark spot of shape usual for genus. Ratio of $m-cu$ to apical part of M_{1+2} — 43 : 81. Halteres yellow. Abdomen comparatively short, entirely shining blue-green.

Length: male body 8.4 mm; antenna 1.5 mm; postabdomen 2.6 mm; female body 6.1 mm; wing-length 5.6 mm; wing-width 1.7 mm.

Distribution. West Uganda.

Etymology. The species is named for Ms Galina Grichanova, who had the scrupulous and subtle job of illustrating many authors papers.

Diagnosis. Males of *C. galinae* are closely related to *C. burgeoni* and can be separated by the following combination of attributes: fore femora, fore and middle tibiae yellow, middle and hind femorae mostly yellow; wing fork-handle 1.5 times as long as $m-cu$; cercus nearly thrice as long as seventh tergum and epandrium together, with long bristles in basal half.

Female probably similar to *C. burgeoni*.

***Condylostylus burgeoni* Parent**

(Fig. 2)

Material examined. 2 males & 4 females, **Kenya**: 18—20.XII.1970, A. E. Stubbs, B.M. 1972—211 / Kakamega Forest, 5200 feet; 2 males, Cent. Africa: **Ruanda Urundi**, X.1956, N. L. H. Krauss. B. M. 1957—4.

Diagnosis. *C. burgeoni* is closely related to *C. galinae* sp. n., differing by brown-black middle and hind legs and quantitative characters such as follows: apical part of M_{1+2} (fork-handle) at least twice as long as *m-cu*; cercus nearly twice as long as 7th tergum and epandrium together, with long setae from base up to the apex. Frons usually bare in both sexes, with strong vertical seta and at most with one fine hair on small mound. Despite the description by Parent, wing darkened in anterior part, with indistinct spot of usual for genus shape. Females differ from males by yellow middle femora, middle tibia and (except knee) hind femora, also by darker spot on wing.

Distribution. Zaire, Tanzania, Kenya (!), Ruanda (!).

***Condylostylus paricoxa* Parent**

(Fig. 3)

Material examined. 1 male & 3 females, **Kenya**: Diani Beach, VII.1951, N. L. H. Krauss. B. M. 1951—541; 2 females, **Kenya**: Teita Hills, VI.[19]48, van Someren / Com. Inst. Ent. Coll. No. 13261; 1 female, **Tanganyika**: Amani, 1957, J. G. Halcrow, in forest (20) / C. I. E. Coll. No. 15425 / Pres. by Com. Inst. Ent. B. M. 1969—3.

Description. Male. Corresponds to female described by Parent (1939) with the exception of secondary sexual characters and other features as noted. Frons metallic blue-violet, slightly pollinose, with strong front vertical bristle and white hairs, arising from distinct mound. Face blue-black, silvery-white pollinose, 3 times as high as wide in the middle. Bulging clypeus nearly half as wide as epistome under antennae. Scape and pedicel short, dark yellow, first flagellomere absent. Mesonotum and scutellum brilliantly blue-green. Pleura brown with metallic reflection, white pollinose. 5 long dorsocentral bristles with a hair in front of the first one, 3 pairs of acrostichals. Legs pale-yellow, hind tarsus and apical segments of other tarsi brown. Fore coxa from the front with numerous yellow hairs and 3 preapical black bristles. Middle coxa from the outside with a few yellow and dark hairs, hind coxa with a black seta. Fore and middle femorae with fine yellow ventral hairs, as long as femora diameter. Fore tibia with a long black preapical ventral hair, with 2 long thick black apicoventral setae, half as long as fore basi-



Fig. 3. *C. paricoxa* Parent, hypopygium, lateral view.

tarsomere. First tarsomere slightly swollen in middle half, with short dense ventral hairs and one thin apicodorsal seta. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 51 : 85 : 97 : 68 : 33 : 17 : 12 : 10. Middle tibia with 3 strong anterodorsal and 3 weak posterodorsal bristles. Length ratio of middle coxa to femora to tibia to tarsus (segments first and second) — 35 : 115 : 160 : 114 : 27. Last tarsomeres of hind tarsi slightly flattened. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 35 : 125 : 138 : 112 : 30 : 20 : 13 : 9. Wing with a spot as figured by Parent (1939). R_{4+5} gently curved to M_1 in apical fifth. M_1 slightly curved basad. Ratio of parts of costa between R_{2+3} and R_{4+5} to those between R_{4+5} and M_1 — 47 : 4. Crossvein *m-cu* straight. Ratio of crossvein *m-cu* to apical part of M_{1+2} (fork-handle) to apical part of *CuA* (up to the wing border) — 33 : 79 : 20. Anal vein reduced. Anal lobe present. Squamae yellow, with brown apex and brown-black bristles. Halteres yellow, halter stem thin and long. Abdomen comparatively short, metallic green-violet, with black hairs. First tergum with narrow membranous excavation and short white lateral hairs. Unmodified segments together nearly 1.5 times as long as mesonotum. Hypopygium small, brown. Cercus yellow, short, spoon-shaped, curved, especially on apex, with yellow hairs. Surstylus very short, narrow, epandrial lobe greatly reduced, with strong setae.

Length: male body 4.2 mm; wing-length 4.7 mm; wing-width 1.5 mm.

Distribution. Kenya, Zimbabwe, Tanzania (!).

Diagnosis. *C. paricoxa* is the only species in Africa with two long preapical setae on fore tibia. It is close to *C. victoriseta* (Hollis, 1964) from Sumatra and can be separated by the following combination of attributes: frons with white hairs; fore tibia with a long black preapical ventral hair, with 2 long thick black apicoventral setae of equal length, half as long as fore basitarsomere. First tarsomere slightly swollen in middle half, with short dense ventral hairs and one thin apicodorsal seta. Cercus yellow, short,

spoon-shaped, curved, especially on apex, with yellow hairs. Surstylus greatly reduced, narrow, epandrial lobe very short, with strong setae.

Condylostylus selectus Parent

Material examined. 1 male & 3 females, **Zaire**: Park National Albert, 1953—1954 (P. Vanschuytbroeck, J. Kekenbosch, H. Synave) [IRSN].

Diagnosis. Males of *C. selectus* can be easily identified by bifurcated cercus with long narrow branches.

Distribution. Malawi, Zaire.

Condylostylus stenurus (Loew)

Material examined. 1 male & 1 female, **S. Rhodesia**: Kessesse R. [&] Nyanyana R. area, Tsetse Fly Ops., 18 [&] 14.1.1956, 4 [&] 10 m. E of Kanba Gorge, Coll. R. Goovier (158 [&] 146) [NHML].

Diagnosis. *C. stenurus* is the only afrotropical species with ventral callus-like swelling on hind tibia. It has small frontal mound with strong vertical seta and a few microscopic hairs. Legs and coxae mostly yellow, middle coxa anteriorly mostly brown; wing with female-type venation; cercus 1.5 times as long as 7th tergum and epandrium together, with small basoventral projection.

Distribution. South Africa, Zimbabwe (!).

Condylostylus pateraeformis Becker

Material examined. 5 males & 9 females, **Uganda**: Ruwenzori Range, XII.1934—I.1935. B. M. E. Afr. Exp. B. M. 1935—203 / Kilembe, 4500 ft (F. W. Edwards); 1 male, **Uganda**: Entebbe, 13.XII.1934, F. W. Edwards. B. M. 1935—203; 1 male, **Uganda**: Lake near R. Muzizzi, Day 2.XI.1912, Dr. R. E. McConnell; 1 female, **Uganda**: Ruwenzori Range, Bundibugyo, 3440 ft., 22.VIII—3.XI.1952, D. S. Fletcher / Ruwenzori Exped. B. M. 1952—566. 1 female, **Uganda**: Acholi Dist., Gulu, 19.X.1964, R. W. Crosskey; 10 males, van Someren, Bwamba, 4—44 / V. G. L. van Someren Collection, Brit. Mus. 1959—468; 1 male & 4 females, van Someren, Jombeni Hills, **Kenya**, 5—47 / Com. Inst. Ent. Coll. No. 13261; 3 females, van Someren, Nyeri (S.), **Kenya**, 1948 / Com. Inst. Ent. Coll. No. 11464; 1 female, Kawanga, on cassava leaf, 11.V.1950 / Coll.No. 1745, Ident. No. / Com. Inst. Ent. Coll. No. 14896; 3 females, **Kenya**: Kwali Forest, 20 mls W of Mombasa, I.VI.1948 / on edge of forest / Miss. M. Steele. B. M. 1948—347; 4 females, **Kenya**: 15—16.XII.1970, A. E. Stubbs. B. M. 1972—211 / Lake Nakuru, 5767 feet; 2 males, **Tanganyika**: Amani, 1957, J. G. Halcrow, in cattle shed (51) / C. I. E. Coll. No. 15455/

Pres. by Com. Inst. Ent. B. M. 1969—3; 1 female, **Tanzania**: 19[677]. Ex. Coll. W. H. Potts. B. M. 1967—472; 1 male, Gold Coast: Aburi, 1912—13, W. H. Patterson; 1 male: **N. Nigeria**: Kagoro Forest, 7.V.1975, J. C. Deeming; 1 female, **N. Nigeria**: *Niger Prov.*, Mokwa, Zugurma, 29.VII.1971, J. C. Deeming, kurmi [NHML].

Additional material. 372 males and females, **Congo Belg.**: Park National Albert, 1953—1958 (P. Vanschuytbroeck, V. Hendricks, J. Kekenbosch, H. Synave) [IRSN]; 3 males, **Congo Belg.**: Rutshuru, 1937 (J. Ghesquiere) [IRSN]; 9 males and females, **Congo Belg.**: Bambesa, 1938 (J. Vrijdagh) [IRSN].

Diagnosis. Frons with strong vertical bristle arising from small bare mound; face 8 times as high as wide in the middle; legs mostly brown—black, fore coxa, femora and tibia and usually middle tibia (except apex) yellow; ratio of fore tibia to length of basitarsomere to width of the same joint to second tarsomere — 115 : 55 : 15 : 35; M_{1+2} and M_1 form the acute angle; cercus thin, nearly thrice as long as 7th tergum and epandrium together, with oval ventral lobe.

Distribution. Cameroun, Nigeria, Zaire, Uganda, Tanzania, South Africa, (?) Madagascar, Kenya (!).

Condylostylus imitator Curran

Material examined. 1 female, **Kenya**: Diani Beach, VIII.1951, N. L. H. Krauss. B. M. 1951—541; 1 female, **Tanganyika**: Amani, 1954, J. G. Halcrow, in forest (20) / C. I. E. Coll. No. 15425 / Pres. by Com. Inst. Ent. B. M. 1969—3; 1 male, **Tanzania**: Mituni Nat. Park / 4.XI.1987, leg. Mahunka [HNHM]; 1 male, S.W. Africa (W50): Gobiswater Fm., 12 mls. N, Grootfontein, 5.VI.1972 / Southern African Exp. B.M. 1972—1; 1 female, Portug. E.Afr.: E. of Mt. Mlanje, 28.XI.1913, S.A. Neave / 28.XI.13, S.A.N.; 1 female, S.Africa: Cape Province, Durban, 21.XI.1954, C. H. Andrews / Brit. Mus. 1955—68; 1 female, **Mozambique**: Machava, 5 m. N. Lourenco, Marques, 28.XI.1955 / I. R. James & L. F. Brown. B.M. 1955—471; 4 females, **Angola** (A11): Bruco, 26.XII—2.III.1972 / Southern African Exp. B.M. 1972—1.

Additional material. 1 male, **Congo Belg.**: Park National Albert, 1955 (P. Vanschuytbroeck) [IRSN]; 3 males, Congo Belg.: Rutshuru, 1937 (J. Ghesquiere) [IRSN].

Diagnosis. Similar to *C. pateraeformis* except as noted. Face 7 times as high as wide in the middle; legs mostly yellow, middle and hind coxae, 2nd—5th tarsomeres of fore tarsus, apex of middle tibia, middle and hind tarsi, middle femora in apical fifth black-brown, hind tibia brown; ratio of fore tibia to length of basitarsomere to width of the same joint to second tarsomere — 95 : 50 : 12 : 28; M_{1+2} and M_1 form the right angle; M_1 with distinct elbow; cercus

thin, nearly thrice as long as 7th tergum and epandrium together, ventral lobe of cercus with pointed apex.

Distribution. Zaire, Kenya, Tanzania, Malawi, Zimbabwe, Mozambique, South Africa, Angola (!), Namibia (!).

Condylostylus congensis Curran

Material examined. 2 males, **Uganda:** Ruwenzori Range, XII.1934—I. 1935. B.M.E.Afr. Exp. B.M. 1935—203 / Kilembe, 4500 ft (F. W. Edwards); 2 males, **Zanzibar:** Mangapwani, XI.1951, N. L. H. Krauss.

Diagnosis. Similar to *C. pateraeformis* except as noted. Face 9 times as high as wide in the middle; legs mostly brown-black, fore coxa in apical half and fore tibia yellow; fore femora and basitarsomere and sometimes middle tibia yellowish-brown; ratio of fore tibia to length of basitarsomere to width of the same joint to second tarsomere — 98 : 53 : 13 : 25; M_{1+2} and M_3 form the right angle; M_1 nearly straight; cercus nearly twice as long as 7th tergum and epandrium together, with egg-shaped ventral lobe.

Distribution. Congo, Cameroun, Zaire, South Africa, (?) Madagascar, Uganda (!), Tanzania (!).

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