

Two new species of *Craterophorus* Lamb (Diptera: Dolichopodidae) from Indian Ocean islands

IGOR YA. GRICHANOV

Grichanov, I.Ya. 1998. Two new species of *Craterophorus* Lamb (Diptera: Dolichopodidae) from Indian Ocean islands. *Int. J. Dipterol. Res.*, 9(3): 207–211.

C. currani from Mauritius and *C. parenti* spp. n. from Madagascar are described. A catalogue and key to 5 known species of *Craterophorus* are given.

I.Ya. Grichanov, All-Russian Institute of Plant Protection, Podbelskogo 3, St. Petersburg-Pushkin, 189620, Russia.

Key words. Diptera, Dolichopodidae, *Craterophorus*, Mauritius, Madagascar, key, new species.

Introduction

The genus *Craterophorus* was described by Lamb (1922) for three new species from Seychelles within the subfamily Chrysosomatinae (now Sciapodinae), though the author mentioned the wing venation being somewhat like that of *Medetera*. The genus was subsequently referred to the Diaphorinae (Dyde and Smith, 1980). Bickel (1994) studied the type species of the genus, *C. mirus* Lamb, and discussed the position of the genus, relating it to Medeterinae. The presence of flattened posterior mesonotum in the species described in this paper definitely place *Craterophorus* in the Medeterinae.

Treating unidentified material from the collections of the Natural History Museum, London and the Royal Institute for Natural Sciences, Brussels, I found two new species of the genus *Craterophorus* from Mauritius and Madagascar. Descriptions for these species, catalogue and first key to species are given in this paper. Five known species of the genus are confined to western Indian Ocean islands. The genus includes two natural groups of species. *C. mirus* and *C. currani* have narrow face and comparatively small size, and *C. mirabilis*, *C. permirus* and *C. parenti* are larger and possess broad face.

Holotypes and paratypes of the new species are deposited in the Royal Institute for Natural Sciences (Brussels) [RINS] and the Natural History Museum (London) [NHML]. The material collected from

Madagascar is kept in 70% alcohol inside glass tubes and cans. Holotype of *C. parenti* is placed after alkalisation into glycerol and mounted on pin in sealed plastic container.

List of known species of *Craterophorus* Lamb

Craterophorus Lamb, 1922: 380. Type species: *Craterophorus mirus* Lamb, 1922, by original designation.
mirabilis Lamb, 1922: 383. Seychelles.
mirus Lamb, 1922: 381. Seychelles.
currani sp. n. Mauritius.
permirus Lamb, 1922: 384. Seychelles.
parenti sp. n. Madagascar.

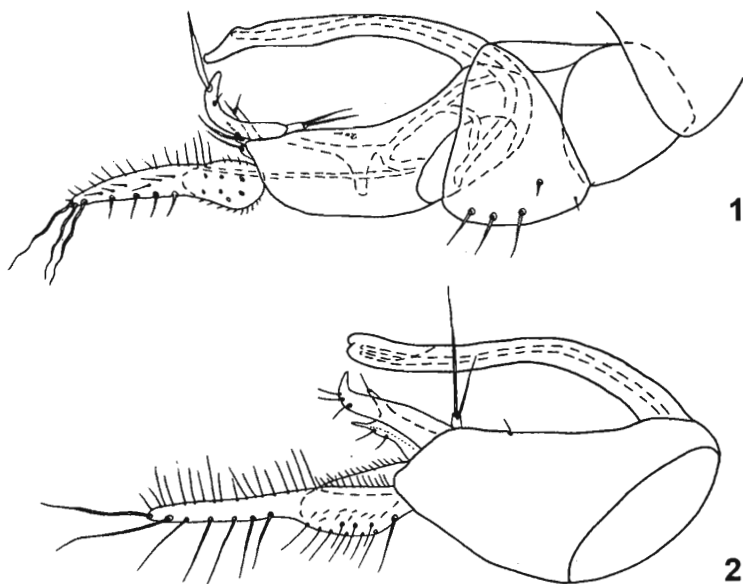
Craterophorus currani sp. n.

(Fig. 1)

Holotype. Male, Mauritius: Bel Ombre, 18.VI.1971 (A. M. Hutson), B.M. 1971—346 [NHML].

Paratypes. Male, Mauritius: Perier Reserve, 14.VI.1971 (A. M. Hutson), B.M. 1971—346 [NHML]; female, Mauritius: Curepipe, 3.VI.1971 (A.M. Hutson), B.M. 1971—346 [NHML].

Description. Male holotype. Frons blue-violet, weakly whitish pollinose. Face entirely shining violet-black. Postocular setae black. One strong vertical seta laterally on frons, one postvertical seta. Ocel-

Figs 1—2. *Craterophorus* Lamb.

1, *C. currani* sp. n., postabdomen, lateral view; 2, *C. parenti* sp. n., hypopygium, lateral view.

lar tubercle with one pair of strong setae. Face widest under antennae. Ratio of height of epistome to its maximal width to height of clypeus to its minimal width, 11 : 8 : 4 : 5. Antenna shorter than head, black; scape bare; pedicel with a ring of short apical setulae; first flagellomere as long as high, irregularly rounded, with small midventral prominence and ovoid apex, short terminal hairs. Arista arising from a small dorsal tubercle, positioned just before the middle, with short hairs. Length ratio of scape to pedicel to first flagellomere to arista, 3 : 3 : 5 : 23. Palpus and proboscis short, black, palpus with black hairs and one black seta.

Mesonotum flattened in posterior third, blue, grey pollinose, with black setae. Pleura bronze-black. Five pairs of strong dorsocentral setae with additional hair in front of the 1st one. Acrostichal setae absent. 2 notopleural, 1 black propleural setae. Scutellum with a pair of strong setae.

Legs with all coxae black, fore and midfemora black-brown in basal half, hind femora black except apex and last tarsomeres of all tarsi brown. Tibiae and protarsi yellow. Coxae with black setae and hairs; fore and middle coxae with numerous hairs; middle and hind coxae each with one external seta. All femora bare, at most with several short subapical hairs. All tarsi simple; fifth tarsomere of all tarsi slightly flattened. Fore leg without setae. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 37 : 39 : 25 : 12 : 7 : 4 : 5. Middle tibia with one apicoventral seta. Length ratio of middle

coxa to femur to tibia to tarsus (segments from first to fifth), 20 : 40 : 44 : 30 : 12 : 10 : 10 : 7. Hind leg without setae. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 15 : 50 : 63 : 17 : 19 : 11 : 6 : 5.

Wing elongate-oval, hyaline, veins brown; posterior wing margin evenly convex; maximum wing-width at the end of CuA_1 . Costa without long hairs. R_1 1/3 as long as wing. R_{2+3} straight. R_{4+5} inconspicuously convex anteriorly, almost straight. M_{1+2} straight. Ratio of part of costa between R_{2+3} and R_{4+5} to this between R_{4+5} and M_{1+2} , 17 : 6. Ratio of apical to basal part of M_{1+2} , 62 : 49. R_{4+5} and M_{1+2} inconspicuously convergent, almost parallel. Ratio of cross-vein $m-cu$ to maximal distance between R_{4+5} and M_{1+2} to apical part of CuA_1 , 16 : 7 : 12. Anal vein fold-like; anal lobe developed; anal angle right. Alula developed, positioned perpendicularly to wing surface, bearing one ventral seta. Lower calypter invisible. Halteres brownish.

Abdomen metallic dark-green, with short black setae; 1st tergite divided by wide and deep membranous excavation into two lateral elongate-ovoid, slightly divergent anteriorly sclerites. 2nd to 6th tergites gradually decrease in length apicad. 7th segment short. Hypopygium black. Epandrium elongate, fabiform, concave ventrally. Foramen small, basolateral. Hypandrium basoventral, elongate, narrow. Epandrial lobi directed basad, with two short setae equal in length. Simple ventral epandrial seta at distal 2/3 present. Surstylus represented by the longest curved

ventrad, pointed, narrow apicoventral lobe with long and thick subapical seta and three short processes bearing apical setae as figured. Cercus dark-brown, long and narrow, 2/3 as long as epandrium, narrowed apicad, bearing three strong and long undulate apical setae, short lateral and dorsal setae and short ventral hairs.

Female similar to male except lacking male secondary sexual characters, otherwise as follows: face as wide as width of 1st flagellomere; middle femora brown in basal half; middle tibia and basitarsus yellow; middle tibia with 1 strong apicoventral seta; hind femora with fine anteroventral subapical seta; all tibiae with very short apical setae. Posterior margin of wing evenly convex; Halter yellow; 1st tergite of abdomen simple.

Length (mm): body without antennae 1.7, antenna 0.4–0.5, wing-length 1.7 in male and 2.0 in female, wing-width 0.6–0.7, postabdomen 0.6–0.7.

Distribution. Mauritius.

Etymology. The species is named for the famous dipterologist C. H. Curran.

Diagnosis and variability. The new species together with *C. mirus* forms the group of species with narrow face and comparatively small size. *C. currani* differs from *C. mirus* in black antenna and coxae, mostly black femora, almost parallel wing veins R_{4+5} and M_{1+2} , entirely black setae on thorax and abdomen and characters of hypopygium. *C. mirus* has almost straight ventral margin of epandrium (lateral view); hypandrium cleft at apex; epandrial lobe with two setae of different length, directed distad, with the first seta twice longer than surstylus and second seta 1/3 as long as the first one; surstylus bilobate; ventral lobe subrectangular, twice longer than wide, with shallow distal emargination and 1 long and 2 short apical setae; dorsal lobe of surstylus slightly shorter than ventral, with 1 long and 1 short dorsal setae; male cercus 2/3 as long as epandrium, somewhat similar to cercus in *C. parenti*. The male paratype slightly differs from the holotype in habitus as follows. Frons and face shining blue-green. Ratio of height of epistome to its maximal width to height of clypeus to its minimal width, 13 : 8 : 5 : 6. First flagellomere subtriangular, with almost acute apex. Mesonotum greenish-blue, weakly pollinose. Posterior wing margin distinctly concave between anal lobe and CuA_1 , inconspicuously convex or straight between CuA_1 and M_{1+2} . Ratio of cross-vein $m-cu$ to maximal distance between R_{4+5} and M_{1+2} to apical part of CuA_1 , 12 : 10 : 18. Lower calypter black, with apical comb of light cilia. Abdomen metallic bluish-green. Hypopygial structures are identical to those in the holotype.

Craterophorus parenti sp. n. (Fig. 2)

Holotype [in glycerol]. Male, Madagascar: Foulpointe, X.1993, A. Pauly col. [RINS].

Paratypes [in alcohol]. 5 females, the same label.

Description. Male. Frons and face blackish-green. Upper postocular setae black. One strong vertical seta laterally on frons, one postvertical, two ocellar seta. Epistome wide, approximately as wide as high; clypeus small, wider than high. Ventral postcranium with white cilia and setae. Scape and pedicel black (1st flagellomere broken in holotype); scape bare; pedicel with a ring of short apical setulae. Palpus and proboscis short, yellow; palpus with dark hairs and one black seta. Hypopharynx beak-like, weakly sclerotized, with a pair of strong hook-like processes at base. Pseudotrachea weakly sclerotized, almost invisible.

Mesonotum flattened in posterior third, brassy-green; pleura black. Five pairs of strong dorsocentral setae (broken). Acrostichal setae absent. Scutellum with a pair of strong setae (broken).

Legs mostly yellow; fore coxa black at base, brownish in middle; middle and hind coxae entirely black-brown; anterior fore femora brownish in basal half; hind femur dark-brown in basal 1/2 to 2/3; last tarsomeres of all tarsi brown. Coxae with light setae and hairs; fore and middle coxae with numerous hairs; middle and hind coxae each with one external seta. All femora without long hairs and strong setae; at most fore femora with short ventral hairs at base and hind femora with elongate dorsal setulae and several short subapical hairs. All tarsi simple; fifth tarsomere of all tarsi slightly flattened. Fore leg without setae. Fore tibia and tarsus with semierect, mostly ventral, setulae along entire length. Length ratio of fore femur to tibia to tarsus (segments from first to fifth), 55 : 62 : 52 : 33 : 23 : 17 : 9. Middle tibia with one apicoventral seta. Length ratio of middle femur to tibia to tarsus (segments from first to fifth), 60 : 75 : 51 : 26 : 15 : 7 : 6. Hind leg without setae; only hind tibia with several elongate dorsal setulae, half as long as diameter of tibia. Length ratio of hind femur to tibia to tarsus (segments from first to fifth), 80 : 100 : 34 : 43 : 20 : 10 : 7.

Wing hyaline, veins brown; posterior wing margin angular, without emargination; maximum wing-width at the end of CuA_1 . Costa without long hairs. R_1 1/3 as long as wing. R_{2+3} straight, slightly curved posteriad at apex. R_{4+5} conspicuously curved posteriad in apical fourth. M_{1+2} straight behind $m-cu$. Ratio of part of costa between R_{2+3} and R_{4+5} to this between R_{4+5} and M_{1+2} , 20 : 4. Ratio of apical

Character	<i>C. mirabilis</i>	<i>C. permirus</i>	<i>C. parenti</i>
Size, mm	a little over 2	2.75	2.8 (wing) — 3.1 (body in alcohol)
Colour of legs	entirely yellow, coxae greyish	yellow; coxae greyish at base; fore femur darkened posteriorly	fore coxa mostly, other coxae entirely brown; fore and midfemora brown at base, hind femur mostly dark-brown in male
Upright setulae on fore leg	present	absent	present
3rd to 5th joints of fore tarsus length ratio	same as in <i>C. permirus</i>	75:40:50	77:57:30
5th joint of fore tarsus width/length ratio	same as in <i>C. permirus</i> , but the joint a little smaller	4:5	3:10
Ciliation of 5th joint of fore tarsus	3 strong apicodorsal setae	5 strong apicodorsal setae, as long as 5th joint	several hairs, at most half as long as 5th joint
1st to 2nd joints of hind tarsus length ratio	?	2:3	4:5
Wing	similar to <i>C. mirus</i>	strongly differs from <i>C. mirus</i> : R_{4+5} & M_{1+2} strongly convergent, M_{1+2} straight; <i>m-cu</i> appr. Equal in length to apical part of CuA_1	
Alula	with chitinated margin bearing regular row of small stiff setae		bare, with slightly chitinated margin
Male cercus	shorter than in <i>C. permirus</i>	as long as epandrium	

to basal part of M_{1+2} , 10 : 7. R_{4+5} and M_{1+2} strongly convergent at apex. Ratio of cross-vein *m-cu* to maximal distance between R_{4+5} and M_{1+2} to apical part of CuA_1 , 24 : 19 : 20. Anal vein fold-like; anal lobe large; anal angle acute. Alula developed, positioned perpendicularly to wing surface, bare, with weakly sclerotized margin. Lower calypter brownish-black, consisting of small plate with short hairs and larger lobe bearing apical comb of about 8 long cilia. Halteres yellow.

Abdomen metallic greenish-black-brown, with short black setae; venter brown, with light hairs at base. 1st tergite represented by two lateral rounded (dorsal view) sclerites, each bearing circular furrow in middle and dark hairs. 2nd tergite with two anterior emarginations and long dorsal hairs. 3rd to 6th tergites somewhat decreasing in length apicad. 7th segment short, half as long as 6th. 8th segment positioned left-basolaterally, as long as 7th. Hypopygium black. Epandrium elongate, with almost straight ventral margin and convex dorsal margin (lateral view). Foramen large, basolateral. Hypandrium basoventral, elongate, narrow, cleft at apex. Epandrial lobi directed ventrad, with one long and one short,

half as long as the first, setae. Short simple ventral epandrial seta at distal 2/3 present. Surstylus black, bilobate; ventral lobe slightly narrowed apicad, with pointed and curved ventrad apex and three short distal setae; dorsal lobe broad, 2/3 as long as ventral lobe, shallowly bifurcated, with 2 dorsal setae; distoventral process of dorsal lobe having fine apical seta. Cercus yellow, long and narrow, swollen at base, narrowed apicad, 7/8 as long as epandrium, bearing one strong apical seta, six strong dorsal setae in apical half, fine dorsal setae in basal half and dense ventral hairs.

Female similar to male except lacking male secondary sexual characters, otherwise as follows. 1st flagellomere transverse-oval, brown or black, with dorsal arista. Wing and fore leg simple. Ratio of part of costa between R_{2+3} and R_{4+5} to this between R_{4+5} and M_{1+2} , 21 : 6. Ratio of cross-vein *m-cu* to apical part of CuA_1 , 15 : 20. Alula absent. Legs almost entirely yellow; middle and hind coxae brown or yellow-brown. Abdominal sternites yellow, becoming brown apically. 1st tergite as single sclerite, slightly swollen laterally, with at least 1 lateral seta. 2nd tergite without anterior emarginations.

Oviscapt blackish-brown; 9th hemitergite narrowed terminally, with one pair of basodorsal, one pair of apicodorsal long cilia and one pair of short thin acanthophorites. Cercus dark, short, rounded at apex, with several long ventral hairs.

Length (mm): body without antennae 3.1 mm, antenna 0.5, wing-length 2.8 in male and 2.3–2.5 in females, wing-width 1.2 in male and 0.8–1.0 in females, male postabdomen 0.8.

Distribution. Madagascar.

Etymology. The species is named for the famous dipterologist O. Parent.

Diagnosis. The new species with its face wide and size comparatively large is closely related to *C. mirabilis* and *C. permirus* as described by Lamb (1922). The main differences between the three species are shown in table.

Key to known species of *Craterophorus* Lamb

(males)

1. Face narrow, 2–3 times higher than wide in middle 2
— Face approximately as wide as high 4
2. Antenna and legs entirely yellow .. *mirus* Lamb
— Antenna black; femora mostly black 3
3. Posterior wing margin concave between anal lobe and CuA_1 ; $m-cu$ shorter than apical part of CuA_1 *currani* sp. n. (paratype)
— Posterior wing margin without emargination; $m-cu$ longer than apical part of CuA_1
..... *currani* sp. n. (holotype)
4. Male fore and midfemora brown at base, brownish in middle; hind femur mostly dark-brown; 5th joint of fore tarsus with short hairs; alula simple and bare *parenti* sp. n.

- Fore and midfemora entirely yellow, at most fore femora darkened posteriorly; 5th joint of fore tarsus with strong apicodorsal setae; alula with regular row of small stiff setae 5
5. Coxae entirely greyish silvery ... *mirabilis* Lamb
— Coxae yellow, greyish silvery only at base *permirus* Lamb

Acknowledgements

I am sincerely grateful to Dr. Patrick Grootaert and Dr. Brian Pitkin for their kindness in furnishing an opportunity to study the collections of the Royal Institute for Natural Sciences (Brussels) and the Natural History Museum (London). I appreciate the help of Dr. Daniel Bickel who kindly sent me the drawing with hypopygium of *C. mirus* type specimen.

References

- Bickel, D. J. 1994. The Australian Sciapodinae (Diptera: Dolichopodidae), with a review of the Oriental and Australasian faunas, and a world conspectus of the subfamily. *Rec. Austral. Mus.*, Suppl. 21: 1–394.
- Dyte, C. E. & K. G. Smith. 1980. Family Dolichopodidae. In: R.W. Crosskey (ed.), *Catalogue of the Diptera of the Afrotropical Region*, Brit. Mus. (Nat. Hist.), London: 443–463.
- Lamb, C. G. 1922. The Percy Sladen Trust expedition to the Indian Ocean in 1905, under the leadership of Mr. J. Stanley Gardiner, M.A. Vol. 7. N VIII. Diptera: Asilidae, Scenopinidae, Dolichopodidae, Pipunculidae, and Syrphidae. *Trans. Linnean Soc. London* (2, Zoology), 18: 361–416.

Received 6.IX.1998