Dolichopodidae (Diptera) from Papua New Guinea V. A new species of *Cryptophleps* Lichtwardt, 1898 with notes on other species*

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ABSTRACT: *Cryptophleps papuanus* sp. nov. is described from the lowlands of Papua New Guinea. The European *C. kerteszii* Lichtwardt, 1898 (type species) and *C. rothii* Couturier, 1977 from Ivory Coast are redescribed.

RESUME: *Cryptophleps papuanus* sp. nov. est décrite de Papouasie Nouvelle Guinée. *C. kerteszii* Lichtwardt, 1898, d'Europe et espèce-type du genre, et *C. rothii* Couturier, 1977 de Côte d'Ivoire sont redécrites.

1. INTRODUCTION

The genus *Cryptophleps* was originally described by Lichtwardt (1898) from Hungary with *C. kerteszii* as type. This species seems to be rather rare and to our knowledge it has not been reported yet outside Hungary. Lamb (1922) described two species from the Seychelles: *C. ochrhalteratus* and *C. nigralteratus*. The venation of the latter very much resembles that of our species from Papua New Guinea. Another species was described by Couturier (1977) from the Ivory Coast.

In the present paper we describe a new *Cryptophleps* species that was found in the lowlands of Papua New Guinea. *C. kerteszii* and *C. rothii* are redescribed and the genus diagnosis is somewhat extended.

2. SYSTEMATIC ACCOUNT

*Genus Cryptophleps* Lichtwardt, 1898

*Diaphorinae:* size small. Frons broad with a pair of long ocellars and verticals.

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Face broad or narrow. Eyes almost touching in one species. Clypeus well developed. Palpi large in some species, without an apical bristle. Postocular bristles pluriseriate below, sometimes forming a 'favoris'. Eyes pubescent. Occiput concave.

*Antennae:* first segment small, bare; second segment with a circle of bristles; third segment trapezium-shaped with a dorsal subapical arista. The latter very short pubescent. First arista segment shorter than third segment.

*Thorax:* without acrocentrals, 4 dorsoventral, 2 scutellars and 1 prothoracic bristle.

*Abdomen:* with five segments with or without marginal bristles. Hypopygium small, hidden. Structure in most Diaphorinae but without macrochaetae.

*Coxae:* II without, coxae III with an external bristle. Femur I, II and III slightly swollen at base. Pulvilli large or small. Claws present or absent.

*Wing:* with r1, r2+3 and r4+5 close to the costa. In most species, the costa only reaches to r4+5, in some others it slightly depasses it. Subcosta ending in r1. m1+2 interrupted near middle; if not so, m1+2 gently undulating. Tp absent or if present never near middle of wing but at base. Anal cell always present; anal vein present but not reaching wing margin.

*Type species:* Cryptophleps kerteszii Lichtwardt, 1898.

**Cryptophleps kerteszii** Lichtwardt, 1898 (Figs 1-3)

**Cryptophleps kerteszii** Lichtwardt, 1898: 491, 1 fig.

**Cryptophleps Kerteszii** Parent, 1938: 561, Fig. 785.

**Redescription of the female**

**Head:** frons and face brown in ground-colour but dull grey dusted. Both frons and face broad as illustrated in Figure 1. Palpi rather large, white with two to three black bristles; no apical bristle. Rostrum small, dark brown. Eyes with very short hairs. Occiput concave, grey dusted; above with short brown uniseriate bristles, below with short 'favoris' of pluriseriate hairs. Chaetotaxy: two verticals pointing forward and slightly inward; two long brown ocellars and two short postocellar.

**Antennae:** (Fig. 3) brownish black. First segment short conical, bare; second segment with a circle of bristles; third segment trapezium-shaped with a dorsal arista. Arista almost bare.

**Thorax:** dark brown in ground-colour, grey dusted; all bristles brown. Chaetotaxy: no acr, 4 dc, 1 humeral, 1 posthumeral, 1 notopleural, 1 supraalar; scutellum with 2 marginals. (Prothoracic bristle not observed.) Pleura further bare.

**Legs:** yellow with darkened tarsi. Coxae brown at base, yellowish at tip. All legs with small claws and small pulvilli. Coxa I with pale hairs in front, long hairs at tip. Femur I slightly swollen in basal third and with a very short brown pubescence. Tibia I with a ventral preapical. Coxa II with pale anterior bristles; no exterior. Femur II slightly swollen in basal half and with short pubescence. Tibia II with a circle of long preapicals. All segments of tarsus II with apicoventral spines. Coxa III with a long pale external bristle near base. Femur III only swollen near middle, not as deep as femur II. Tibia III slightly longer than femur, with 3 dorsal, 1 ad and a crown of black bristles at tip (smaller than those on tibia II). Tip of hind tibia brown.

**Wings:** (Fig. 2) hyaline. Veins yellowish to brown. Costa reaching till tip of r4+5, Sc very short and ending in r1. m1+2 interrupted. Note the fold above vein m1+2 indicated on Figure 2 by a dotted line. Tp absent. Anal vein present but not reaching the wing border. Squamulae yellowish with pale hairs. Halteres with yellowish stalk and whitish knobs.

**Abdomen:** dark brown in ground-colour but grey dusted. Only first segment with long marginal bristles; following segments with short pale bristles. Genitilia not observed.

**Length:** 1.5 mm.


**Distribution:** Europe: actually only known from Hungary.

**Discussion:** According to Parent (1938), the pulvilli are very large in the male and no claws are present. The palpi which are longer than in the female, are bare. Originally, Lichtwardt (1898) described only females, taking them to be males. Later on he corrected this mistake (Lichtwardt 1905) and described the males from Gyón near Budapest. The male has milk white wings.

**Cryptophleps rotbii** Couturier, 1977 (Figs 4-6)

**Cryptophleps rotbii** Couturier, 1977: 223, Figs 6-8.

**Redescription of the male**

**Head:** frons and face brown-green in ground-colour, dull grey dusted. Both frons and face broad, as can be seen in Figure 4. Palpi very long, as long as face is long, more or less rectangular, white, without bristles. Rostrum small, brown. Eyes with very short hairs. Occiput concave with white uniseriate bristles above, with multiseriate bristles below, forming thick 'favoris'. All postocular bristles
somewhat flattened. Chaetotaxy: 2 pale verticales, pointing forwards and slightly converging; 2 pale ocellars, a pair of tiny postocellars.

Antennae: (Fig. 6) blackish-brown. First segment bare, conical; second segment short with a crown of dark bristles; third segment trapezium-shaped with a dorsal arista being almost bare.

Thorax: greenish in ground-colour and covered with a thick grey pile. All bristles pale yellow. Chaetotaxy as usual: no acr, 4 dc, 1 humeral, a short posthumeral, 1 notopleural, 1 supraalar, 1 postalar, 2 marginal scutellars. Prothoracic collar with 8 short, pale bristles; a very short prothoracic bristle.

Legs: yellow but tarsi brown annulated. Coxa I yellow with only extreme base somewhat brown and green; a vertical row of flattened bristles present. Femur I thickened near middle; antero- and posteroventrally with a row of yellow flattened bristles. Tibia I shorter than front femur. Tarsus I with first segment slightly swollen and curved. No claws. Pulvilli as long as terminal segment. Coxa II with a row of yellow external bristles. Femur II much more slender than femur I, with a row of fine antero- and posteroventral bristles half as long as femur is deep. Tibia II with 3 brown anterodorsal bristles and an apical circlet of bristles. Tarsal segments with black apicoventral spinules. Coxa III with one exterior bristle. Femur III with a double row of yellow ventral bristles. Tibia III with 3 anterodorsal and about 5 dorsal bristles.

Abdomen: brown in ground-colour with a grey dusting and a rather long yellow bristling; marginal bristles on the sides of all tergites well developed. Genitalia large. Aedeagus yellow, long and bent near tip.

Wings: (Fig. 5) hyaline. Squamulae white with white cilia. Halsters white.

Length: 2.3 mm.


Discussion. The only species known from Africa.

Cryptopleps papuanus sp. nov. (Figs 7-10)

Description of the male

Head: frons and face blackish-brown, rather dull. Frons broad, at level of the vertical bristles nearly twice as broad as the diameter of an eye as seen from above, slightly narrowing towards the antennae. Face rapidly narrowing downwards; eyes nearly touching each other beneath middle of face. Palpi short and narrow, brownish-yellow, bearing a short black, apical bristle. Rostrum small, brownish-yellow, with a row of dark hairs. Eyes with very short hairs, facets enlarged near face. Occiput brownish-black. Chaetotaxy: 2 verticales, pointing forward and slightly converging; 2 ocellars, a little weaker than the verticales, pointing upward and diverging; 2 tiny postocellars; no postvertices differentiated; postocellars short and inconspicuous, uniseriate above, indistinctly pluri-

Figures 7-10. Cryptopleps papuanus sp. nov. Paratype male: 7 antenna; 8 hypopygium; 9 wing; 10 hind tarsus. Scale 0.1 mm.
Antennae: (Fig. 7) short, brownish; first segment very short, conical, bare; second segment broader, conical, with a circlet of very short black bristles and a long dorsal bristle; third segment rounded, roughly trapezium-shaped; arista inserted subapically, very shortly pubescent; first arista segment shorter than third antennal segment.

Thorax: dark black with a greenish tinge, not very shining; pleura dark brown, dull; neck yellow. Chaetotaxy: no acr., 4 dc, humeri with 1 bristle and 1 or 2 tiny hairs, 2 notopleurals, 1 poshumeral, 2 supraalar, scutellum with 2 marginals. One small prothoracic bristle. Prothoracic collar with a row of short black bristles. Pleura bare.

Legs: brown; tibiae and tarsi somewhat lighter coloured; all trochanters and coxae more yellowish. All legs with claws and very small pulvilli.

Coxa I with only a few weak pale brown hairlike bristles anteriorly. Trochanter bare. Femur I with a short and weak preapical pv. Tibia I a little longer than the femur, without bristles; even at tip only one ventral bristle developed. Tarsus I: first segment ventrally with a row of very short, not very conspicuous bristle hairs, giving a spiny appearance. Length ratio of tibia I and the 5 tarsal segments: 15:7.5:3:2.5:1.5:2.5:

Coxa II without bristles, anteriorly bearing some hairs. Trochanter with a black anteroventral bristle. Femur II somewhat thickened in basal half; anteroventrally and posteroventrally with a very short and weak preapical. Tibia II hardly longer than femur, at apex a crown of rather short bristles. Tarsus II: segments 1-4 with very short and weak apicoventral spinules. Length ratio of tibia II and the 5 tarsal segments: 15:9.5:4:2.5:1.5:2.

Coxa III with a black external bristle and some weak ventral apical bristles anteriorly. Trochanter with a thin anterior bristle. Femur III less stout than femur II; about 3 short hairlike anteroventrals before tip and a yet weaker preapical posteroventral. Tibia III hardly longer than femur; no real bristles, but some of the hairs in the dorsal row may be somewhat longer; at apex only a few very short bristles. Tarsus III (Fig. 10) broadened and flattened dorsoventrally from tip of second segment onwards to tip of segment 4; segment 4 is the broadest, about 1.5 times as long as broad; segment 5 broadened and flattened also, broadest as base, but only half as broad as segment 4. Anteroventrally a ciliation of short erect hairs on segments 1-4; segments 1-4 with short ventroapical spinules. Length ratio of tibia III and the 5 tarsal segments: 16:6.5:4.5:3:2.5:2.5:

Wings: (Fig 9) hyaline, regularly set with microtrichia. Veins dark brown. Costa only reaching a little beyond tip of r4+5. r2-3 and r4+5 running closely together near anterior wing margin. Sc ending in r1. m1+2 wavy, ending just beyond tip of wing. Tp totally absent. m3+4 evenly bent, ending in wing margin. Anal vein present but short and weak, mostly in the form of a fold. Fringe along hind margin of wing rather long. Halteres dark brown with lighter coloured stem. Squamulæ brown with a blackish border and a few short black cilia.

Abdomen: dark brown, venter somewhat lighter coloured. All hairs and bristles very short, black. Hypopygium (Fig. 8) small, hidden, dark brown with short black bristles; cerci small, yellowish, with short dark hairs.

Length: 1.25-1.35 mm; wing length: 1.15-1.25 mm.

Description of the female
Larger than the male (about 1.5 mm). Face at its narrowest point broader than the distance between the two occellar bristles. Tarsus III not broadened nor flattened, without ciliation. Venation of wing as in male, but r2+3 and r4+5 not running so near the costa, so that the distance between r2+3 and m1+2 is shorter. Genital parts hidden in tip of abdomen, yellow; a crest of 8 domen.

Material examined. Holotype male: Papua New Guinea, Awar Point (type-locality; Bogia, Madang Province) st. 1351, 18 June 1982 (leg. P.Grootaert; swept from mangrove roots); preserved in alcohol. Paratypes: Papua New Guinea, Awar Point (Bogia, Madang Province) 2 males (genitalia in slide); Awar Village st. 1181, 3 June 1982, 1 female (leg. P.Grootaert); Nubia Village, 1 July 1981, 3 females (leg. J.Van Goethem); Nubia Village, 6 July 1981 (leg. J.Van Goethem), 1 male, 3 females. All preserved in alcohol in the collection of the Koninklijk Belgisch Instituut voor Natuurwetenschappen (IG.26480).

Note. By its wing venation, this species comes very near Cryptopneus nigriferalteratus Lamb, 1922, described from the Seychelles but in the latter there is a stouter ventral fringe on the hind femora.

3. DISCUSSION

The general morphology of the three species that were studied, is more or less identical. Claws and pulvilli can be large, small or even absent. However, this seems to be a usual feature of the Diaphorinae. The wing venation upon which the genus was founded is somewhat variable but probably from a common origin. The posterior transverse vein (tg) is usually absent and if present (as in C. roldi) then it is a short vein at the base of the wing. m1+2 or the fourth vein is usually interrupted but continuous in C. nigriferalteratus Lamb and C. papuanus sp.nov. We do not see this as a reason to split off these species into another genus.

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