

## Genus PLEROCHILA (HEMIPTERA HETEROPTERA, Fam. TINGIDAE)

BY

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The lacebug genus *Plerochila* DRAKE (1954) was erected to hold *Teleonemia australis* DISTANT from South Africa and *Cysteochila horvathi* SCHOUTEDEN from Mauritius. Since then, two other species *Plerochila zululandana* DRAKE from South Africa, and *P. rutshurica* SCHOUTEDEN from the Congo, have been described.

The present paper transfers *Cysteochila tzikamana* DRAKE (*n. comb.*) to *Plerochila* and describes two new species in the latter genus from the Congo and a third from Kenya. The Congo specimens were netted during the « Exploration du Parc National de la Garamba Mission H. DE SAEGER (1949-1952) ». The holotypes, allotypes, and most of the paratypes plus other specimens collected by Mr. H. DE SAEGER and colleagues are deposited in the « Institut des Parcs Nationaux du Congo et du Rwanda », Brussels.

The authors are greatly indebted to Mr. H. DE SAEGER of the above institution for the privilege of studying several thousand specimens of lacebugs taken during the stay of the expedition in the Congo. Further reports on the Congo tingids are now being prepared for publication. The illustrations were made by Miss LISA BIGANZOLI, Washington, D. C. In the descriptions, 80 microunits equal one millimeter.

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Genus **PLEROCHILA** DRAKE.

*Plerochila* DRAKE, 1954a, p. 69. — DRAKE and RUHOFF, 1960, p. 78.

Moderately large, nearly parallel-sided. Head very short, armed with four or five spines, the occipital pair long, stout, and appressed; frontal spines porrect and slender; bucculae wide, areolate, closed in front. Rostrum moderately long, usually with its apex reposing on mesosternum, rarely longer with apex on metasternum; sternal laminae of rostral sulcus ridgelike and non-areolate on prosternum, raised and uniseriate on mesosternum, highly elevated and mostly biseriate on metasternum, open behind. Antenna long, slender, third segment long, very slender; fourth segment moderately long, not very swollen.

Pronotum slightly to strongly convex, punctate, customarily triseriate, rarely uniseriate; lateral carinae at most not clearly perceptible on pronotal disc, generally present and well developed on backward projection of pronotum (one species without lateral carinae); paranota narrow to very wide, completely reflexed, always resting flatly on discal surface of pronotum. Ostiole and ostiolar canal present on each metapleuron; scutellum large, triangular. Legs moderately long, unarmed, the femora moderately swollen. Elytra divided into the ordinary divisions; discoidal and sutural areas on same horizontal level; costal area narrow, uni- or biseriate; discoidal area large, extending backwards beyond middle of hemelytron. Hind wings long, functional. Brachypterous form unknown. Hypocostal laminae uniseriate.

Type species, *Teleonemia australis* DISTANT (fig. 1).

Allied to *Cysteochila* STÅL, but readily separated from it and related genera by the following features: 1) greatly elevated rostral laminae on metasternum (each lamina wide, largely biseriate, and concave on inner side; 2) completely reflexed paranota, each resting flatly on discal surface of pronotum; and 3) incomplete development or lack of lateral carinae on pronotal disc, but usually present and plainly visible on backward projection of hind margin of pronotum.

Most of the species of *Plerochila* have been recorded as feeding and breeding on the underside of the leaves of cultivated and wild olives in central and southern Africa. Two of the African species found on olive trees also occur on islands of the Indian Ocean.

The lacebugs which are known to breed on the cultivated olive trees and other oleaceous plants in Australia belong to the genus *Froggattia* FROGGATT. *F. olivina* is an important pest of the cultivated olive (*Olea europaea*) in Queensland. The African member of this genus, *F. hargreavesi* DRAKE, of Uganda, breeds on *Jasminum dichotomum*. The genus

*Froggattia* can be separated from *Plerochila* by the tricarinate pronotum, paranota very narrow, ridgelike and non-areolate; the rostral laminae are low and uniseriate on metasternum.

KEY TO SPECIES OF GENUS *PLEROCHILA*.

1. Paranota large, each covering nearly all of pronotal disc on its respective side of median carina; uncovered space scarcely wider than areolae in outer row of reflexed paranotum (fig. 3) ..... 2
- Paranota smaller, each covering not more than half of discal space on its respective side of median carina; uncovered space much wider, equal to or less than the width of paranotum (figs. 1, 2) ..... 5
2. Costal areas of elytra narrow, each composed of a single row of small areolae (fig. 3) ..... *P. nimia* n. sp.
- Costal areas wider, each composed of two rows of areolae ..... 3
3. Costal and subcostal areas subequal in width; lateral carinae present behind pronotal disc on triangular projection ..... 4
- Costal areas narrower, each about half as wide as subcostal area; lateral carinae obsolescent on pronotal disc, poorly developed on backward projection of pronotum ..... *P. eumepes* n. sp.
4. Pronotum clearly tricarinate; median carina slightly thicker and more elevated than lateral pair; lateral carinae very distinct behind pronotal disc, divergent posteriorly; costal and subcostal areas subequal, both in width and size of areolae; hood small ..... *P. tzikamana* (DRAKE).
- Pronotum with median carina distinct on pronotal disc, then becoming obsolescent posteriorly; lateral carinae absent on pronotal disc, largely imperceptible on backward process; costal area slightly narrower than subcostal area; hood slightly larger and a little more inflated .....  
*P. zululandana* DRAKE.
5. Paranota moderately large, each covering approximately one-half of discal space of pronotum on its respective side of median carina ..... 6
- Paranota much narrower, each covering about one-third of pronotal disc on its respective side of median carina (figs. 1, 2) ..... 7
6. Hood small, pyriform, extending backwards between calli; lateral carinae not or scarcely discernible on pronotal disc, distinct on backward, triangular projection ..... *P. horvathi* (SCHOUTEDEN).
- Hood smaller; lateral carinae present and fairly distinct on pronotal disc, more elevated and plainly visible on triangular prolongation of hind margin ..... *P. rutshurica* SCHOUTEDEN.

7. Rather broad, grayish testaceous, occasionally with a few dark spots; lateral carinae absent on pronotal disc, very distinct and parallel on hind triangular projection; pronotal disc little swollen; paranotum with two or three rows of areolae (fig. 1) ..... *P. australis* (DISTANT).  
 — Much slenderer, brownish testaceous, usually with dark fuscous markings on pronotal disc and median longitudinal part of elytra, occasionally with markings much reduced and largely absent; pronotal disc moderately swollen; lateral carinae absent; paranota mostly two areolae wide (fig. 2) ..... *P. chara* n. sp.

***Plerochila australis* (DISTANT).**

(Fig. 1.)

*Teleonemia australis* DISTANT, 1904, p. 432, pl. 8, fig. 13.

*Cysteochila (Parada) australis* : HORVÁTH, 1925, p. 3.

*Plerochila australis* : DRAKE, 1954a, p. 69; 1954b, p. 663. — ORIAN, 1956, p. 647.

Oblong, moderately wide, grayish stramineous, sometimes with a few veinlets brownish or fuscous; body beneath brown to dark fuscous; buccal and sternal laminae of rostral sulcus brownish testaceous. Antenna pale brown with distal two-thirds of fourth segment blackish. Legs pale brown. Length 3,50-4,00 mm, width (elytra) 1,45 mm.

Head very short, with two basal spines thick, pale, and appressed; frontal spines short and porrect. Antennae smooth, measurements: segment I, 22; II, 14; III, 85; IV, 35. Rostrum brownish, extending to the meso-metasternal suture.

Pronotum not much swollen, less convex than in other members of genus, distinctly punctate; median carina prominent, long; lateral carinae absent on pronotal disc, distinct and parallel on triangular prolongation of hind margin of pronotum; hood very small, not extending forward in front of anterior margin of collar; extending backwards between calli, paranota narrow, either bi- or triseriate, reflexed, each covering about one-third of its respective side of pronotal disc. Elytra rather broad, divisions as depicted in illustration.

**Distribution.** — South Africa (Natal, Pretoria, Cape Province, Transvaal); Kenya (Turi, Limuru); Mozambique; Ethiopia; Madagascar; Mascarene Islands (Mauritius, Mauri).

According to DISTANT (1904), *australis* occurs in large numbers on the under side of the leaves of the cultivated olive (*Olea europaea*) in South Africa during the latter part of the summer. We also have specimens taken on olive trees in Central and South Africa.

The broad form, pale color, less convexly raised pronotal disc, narrow paranota (wider than in *P. chara*) and pale color separate this species from its congeners. A female paratype from South Africa is illustrated.

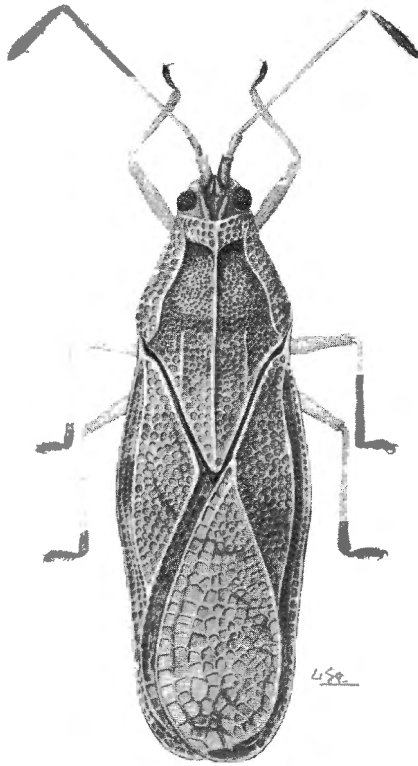


FIG. 1. — *Plerochila australis* (DISTANT).

***Plerochila chara* n. sp.**

(Fig. 2.)

Moderately large, slender, oblong, testaceous or brownish testaceous with the blackish fuscous markings varying from one another in extent and density of color; deep blackish fuscous markings as depicted in illustration; body beneath fuscous with buccal and sternal laminae of rostral sulcus testaceous, and collar and paranota pale testaceous. Antennae pale brown with fourth segment mostly black. Legs pale brown with tip of second tarsal segment blackish. Length 3,15-3,25 mm, width 0,90 mm.

Head very short, armed with two short frontal spines and two, thick, basal ones, the latter pair appressed. Rostrum extending to middle of mesosternum; laminae very wide and biseriate on metasternum, narrower and uniseriate on mesosternum. Antenna long, slender, smooth, measurements: segment I, 24; II, 10; III, 90; IV, 38.

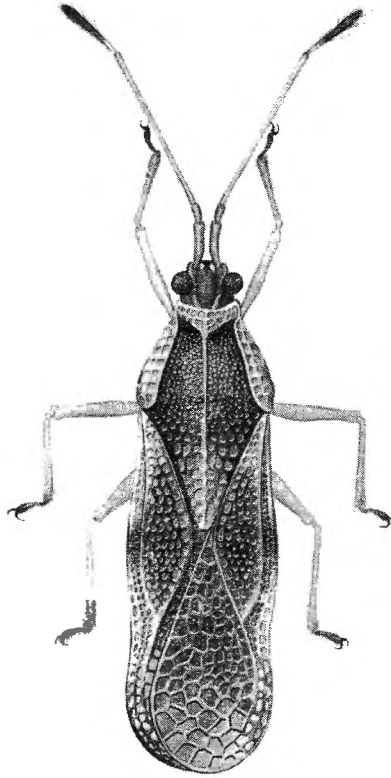


FIG 2. — *Plerochila chara* n. sp.

Pronotum rather strongly convex, punctate, all carinae obsolescent; collar raised, truncate in front, produced backwards at middle behind so as to form a tiny hood between calli; paranota narrow, reflexed, mostly biseriate, triseriate in front, each covering about one-third of discal space on its respective side of pronotum. Ostiole and ostiolar canal present on each metapleuron, the sulcus narrow and vertical. Legs moderately long, femora slightly thickened.

Elytra slightly longer than abdomen, with discoidal areas overlapping each other in repose; costal area narrow, uniseriate; subcostal area wider, almost vertical, biseriate; discoidal area large, acutely angulate at base and apex, six or seven areolae deep at middle, on same horizontal level as sutural area. Hind wings long, densely clouded with dark fuscous.

Holotype male and allotype female: both macropterous, source of Tori River, east of Mt. Ndelele, Sudan territory (ex Garamba National Park), 20.III.1952.

Paratypes : 5 specimens collected with types : 1 specimen near permanent pond, 19.III.1952; 4 specimens in dense forest gallery along Pali River, 22.III.1952; and 2 in clearing at source of Pali River, 29.IX.1952.

Distinguished from other members of the genus by its slender, oblong form, very narrow paranota, and blackish markings in fully colored specimens.

***Plerochila horvathi* (SCHOUTEDEN).**

*Cysteochila horvathi* SCHOUTEDEN, 1907, p. 286.

*Cysteochila (Parada) horvathi* : HORVÁTH, 1925, p. 3.

*Plerochila horvathi* : DRAKE, 1954a, p. 69; 1957, p. 401. — ORIAN, 1956, p. 647.

— MAMET, 1957, p. 57.

*Pleurochila (sic) horvathi* : DRAKE and MAMET, 1956, p. 301.

Oblong, brown or reddish brown, sometimes with a few small marks without fixed limits; body beneath reddish brown to fuscous. Antenna brownish with terminal segment largely dark fuscous. Legs dark brown. Length 4,20 mm, width 1,20 mm.

Head very short, armed with five slender spines, frontal three porrect and occipital pair appressed. Bucculae areolate, closed in front. Rostrum reaching to middle of mesosternum; sulcus with laminae parallel and composed of one row of areolae on mesosternum; distinctly more elevated and biseriate on metasternum, open behind. Antennal measurements : segment I, 25; II, 11; III, 100; IV, 45.

Pronotum moderately convex, punctate, tricarinate; median carina distinct, long; lateral carinae absent on pronotal disc, present and slightly divergent on triangular projection; hood small, inflated; paranota moderately wide, each covering about one-half of its side of pronotal disc, not extending inwardly as far as lateral carina. Ostiole and ostiolar canal present on each metapleuron, sulcus narrow and vertical. Elytra with costal area very narrow, uniseriate, the areolae narrow, smaller than bordering row of cells in subcostal area; subcostal area biseriate, vertical, with moderately large areolae; discoidal area large, about four-sevenths as long as elytron; sutural and discoidal areas on same horizontal level.

**Distribution.** — Mascarene Islands (Reunion; Mauritius); Africa (Kenya; Congo; Southwest Africa). Originally described from specimens collected on olive in Mauritius. Other examples have been seen from Mauritius. Breeds on cultivated olive (*Olea europaea*), *Olea* sp., and *Jasminum* sp.

Closely related to *P. nimia* n. sp. but easily separated from it by its longer body, longer third antennal segment (100 : 80); narrower paranota, and the wider uncovered surface on paranotal disc between reflexed paranotum and median carina.

***Plerochila rutshurica* SCHOUTEDEN.**

*Plerochila rutshurica* SCHOUTEDEN, 1954, p. 140.

Oblong, brown with paranota and costal areas brownish testaceous, head reddish fuscous, and body beneath blackish fuscous. Antennae brown with fourth segment largely black. Legs brown with tips of tarsi dusky. Length 3,40-4,00 mm, width (elytra) 1,00-1,20 mm.

Head very short, hind pair of spines appressed, anterior three porrect; bucculae closed in front. Antennae long, measurements: segment I, 20; II, 11; III, 110; IV, 35. Rostrum moderately long, almost reaching meso-metasternal suture; laminae of rostral channel, uniseriate on mesosternum, biseriate on metasternum, open at base. Orifice and channel of meta-thoracic scent glands present on each metapleuron. Legs with femora only slightly swollen.

Pronotum moderately swollen, pitted, tricarinate; median carinae long and well-developed, more raised than lateral pair; lateral carinae present on pronotal disc, poorly developed, divergent and disappearing anteriorly, distinct and nearly parallel on backward process of pronotum; hood small, projecting backwards between calli; paranotum covering scarcely more than one-half of pronotal disc on its side of median carina. Elytra a little longer than abdomen, sutural areas overlapping each other at rest; costal area composed of one row of areolae; subcostal area wider, nearly vertical, biseriate; discoidal area large, acutely angulate at base and apex, extending backwards beyond middle of elytron. Hind wings long, functional.

Holotype and paratypes: Rutshuru, Congo, in Musée Royal de l'Afrique Centrale, Tervuren, Belgium; paratypes also from Astrida (Ruanda) on *Olea* spp. Specimens are at hand from Limura, Uganda, and Chyulu Hills, Kenya, altitude 5.600 feet.

Allied to *P. horvathi* but longer with lateral carinae usually discernible on pronotal disc and well-developed on triangular process.

***Plerochila nimia* n. sp.**

(Figs. 3 a, b, c.)

Oblong, testaceous-brown with pronotum brown, head dark brown to deep fuscous, and body beneath dark fuscous; buccal and sternal laminae of rostral sulcus testaceous. Legs brown, femora slightly darker. Antennae with most of last segment fuscous. Rostrum brown with apex blackish, extending on mesosternum. Length 3,25 mm, width (elytra) 1,00-1,12 mm.

Head very short, armed with four or five spines; frontal two or three spines short, porrect; hind pair long, thick, and appressed; bucculae closed in front. Antennae moderately long, indistinctly pubescent, measurements:



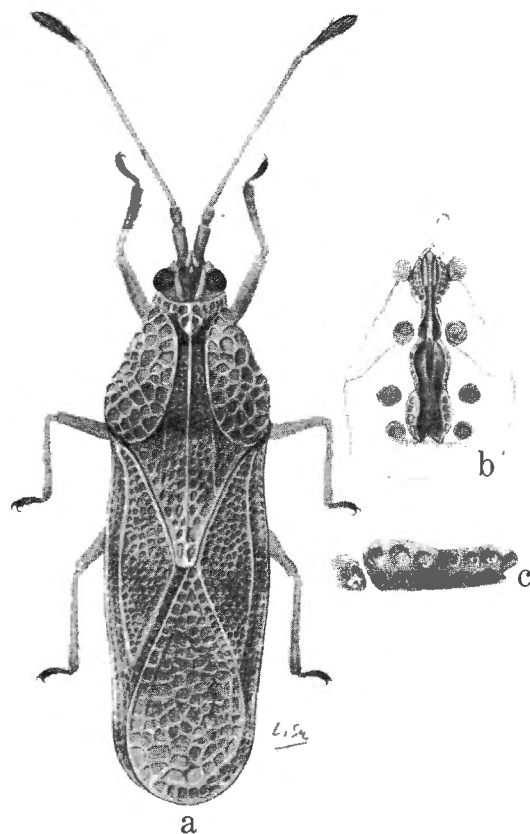


FIG. 3. — *Pterochila nimia* n. sp.

a : dorsal aspect; b : ventral view of sternum showing rostrum and sulcal laminae; c : biseriatae laminae on metasternum.

segment I, 22; II, 10; III, 88; IV, 32. Pronotum convex, coarsely punctate, tricarinate; median carina long, distinct; lateral carinae obsolescent on pronotal disc, present and divergent posteriorly on backward extension of hind margin of pronotum; collar small, extended backward between calli. Paranota wide, each covering nearly all space between its outer margin and median carina, uncovered area scarcely more than width of paranotal areola.

Elytra covering and extending a little beyond apex of abdomen; costal area narrow, uniseriate; subcostal area wider, biseriatae, almost vertical; discoidal area large, extending backwards beyond middle of elytron. Hind wings fully developed. Brachypterous form unknown.

**Holotype** male and **allotype** female : both macropterous, Garamba National Park (3214), taken in forest margin along Pali River.

**Paratypes** : about 1.250 specimens, collected in various localities, Garamba National Park. Host plant unknown.

The much wider paranota, broader form, and color marks separate this species from *P. chara* n. sp. A paratype, taken with holotype, is illustrated; note the wide rostral laminae on metasternum (fig. 3, c).

### ***Plerochila eumepes* n. sp.**

Elongate, brownish testaceous, with pronotal disc, paranota, and the discoidal, subcostal and sutural areas of elytra brownish fuscous; costal areas each with median crossband fuscous; body beneath reddish brown. Antennae reddish brown with fourth segment mostly black. Legs reddish brown with tibiae yellowish brown. Length 4,80 mm, width 1,20 mm.

Head very short, armed with long, testaceous spines, the frontal spines porrect and the hind pair appressed; bucculae testaceous, closed in front. Rostrum extending to middle of mesosternum. Antennae long, measurements : segment I, 28; II, 14; III, 140; IV, 50. Pronotum moderately convex, punctate, tricarinate; median carina distinct from hood to base of pronotal disc, thence not clearly visible on triangular process; lateral carinae not clearly represented on triangular process, if present on pronotal disc covered on each side by wide paranotum. Ostiole and ostiolar sulcus present on each metapleuron. Paranota very wide, each covering almost all of its respective side of pronotal disc, the uncovered space between outer margin of paranotum and median carina scarcely as wide as outer row of areolae of paranotum. Hood moderately large, inflated, projected backwards between calli.

Elytra long, extending considerably beyond apex of abdomen; costal area rather narrow, less than half as wide as subcostal area, biseriate, the areolae small; subcostal area wide, vertical biseriate; discoidal area extending beyond middle of elytron; sutural area large, overlapping each other, with apices jointly rounded. Hind wings slightly shorter than elytra. Legs with femora slightly enlarged.

**Holotype** : macropterous male, Nairobi, Kenya, 8.I.1955, D. C. THOMAS, DRAKE Coll. (U.S.N.M.).

This species can be distinguished from other members of the genus with biseriate costal area by the slenderer and longer form and much narrower and biseriate costal area.

**Plerochila zululandana** DRAKE.

*Plerochila* (nom. nud.) *zululandana* DRAKE, 1953, p. 213.

Elongate, brownish with collar, cephalic spines testaceous; body beneath dark reddish brown. Length 4,00 mm, width (elytra) 1,12 mm.

Head very short, occipital spines appressed and frontal three porrect. Antennae indistinctly pubescent, segmental measurements: segment I, 27; II, 13; III, 124; IV, 35. Rostrum with apex reposing between intermediate coxae; laminae of sulcus low and non-areolate on prosternum, higher and uniseriate on metasternum, much more elevated and biseriate on metasternum, ends not meeting behind. Ostiole and ostiolar sulcus present on each metapleuron, the sulcus narrow and nearly vertical.

Pronotum moderately convex, coarsely punctate; median carina long, very distinct, without perceptible areolae; lateral carinae low, divergent posteriorly present on backward projection of pronotum, feebly indicated on rear part of pronotal disc; collar raised, with small hood projecting backward between calli, truncate in front; paranota very large, completely reflexed, with uncovered space between outer edge of paranotum narrow, scarcely wider than outer row of pronotal areolae. Elytra with costal area not as wide as subcostal area, almost entirely biseriate, slightly reflexed on basal half; subcostal area mostly biseriate, nearly vertical; discoidal area extending behind middle of elytron.

Known only from the type series of three specimens, Eshowe, Zululand.

Two other species of *Plerochila* (*tzitikamana* and *eumepes*) possess biseriate costal areas. These may be distinguished by the structures used in the key to separate the species.

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