Dolichopodidae (Diptera) from Papua New Guinea I: The genus Cymatopus Kertész with a discussion on Abatelia Miller and Cemocarus gen.nov.*

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ABSTRACT: Cymatopus tibialis Kertész, 1901, and Cleopoldi sp.nov. are reported from the coast of Papua New Guinea. The genus Cymatopus Kertész is revised and a key is given. Aphrosylus griseatus Curran, 1926, with its synonym Cymatopus capensis Parent, 1939, is transferred to Cemocarus gen.nov. Abatelia Miller, 1945, formerly considered as a synonym of Cymatopus, is revalued with A. robusta (Parent, 1933) as type species.

RÉSUMÉ: Cymatopus tibialis Kertész, 1901 et Cleopoldi sp.nov. sont rapportés de la côte de Papouasie Nouvelle-Guinée. Le genre Cymatopus Kertész est révisé et une clé est donnée pour les espèces. Aphrosylus griseatus Curran, 1926, et son synonyme Cymatopus capensis Parent, 1939, sont transférés à Cemocarus gen.nov. Abatelia Miller, 1945, jadis considéré comme synonyme de Cymatopus, est rétabli, avec A. robusta comme espèce-type.

1. INTRODUCTION

In the present series of papers a contribution is given to the knowledge of the Dolichopodidae from Papua New Guinea. The study is based on material collected during an expedition from 24 April to 25 June 1982. This period covered the end of the wet season and the beginning of the dry season. Most material was collected in the coast region, the lowland near Hansa Bay (Bogia, Madang Province). Further collections were made in the mid-mountains near Bogia and the mountains around Wau. Data are added from collections made by Dr J. Van Goethem during several expeditions in these regions.

The present contribution deals with the coast-dwelling genus Cymatopus Kertész, 1901. Apart from the type species, C.tibialis Kertész, 1901, a new species Cleopoldi, was found. A key to the species of Cymatopus is given. Aphrosylus griseatus Curran, 1926, with its synonym Cymatopus capensis Parent, 1939, is transferred to the new genus Cemocarus.

* Leopold III Biological Station, Laing Island. Contribution No.56.

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The genus *Abatetia* Miller, 1945, considered as a synonym of *Cynatopus*, is re-valuated with *A. robusta* (Parent, 1933) as type species.

2. SYSTEMATIC ACCOUNT

2.1. Genus *Cynatopus* Kertész, 1901

Természet. Füz. 24, 408
Type species *C. tibialis* Kertész, 1901

2.1.1. Generic diagnosis


Thorax dusted, arched above, with a distinct flattened posterior slope. Chaetotaxy: no acrochela, 4 or 5 strong dorsocentralis, 1 humeral, 1 presutural, 1 sutural, 2 supraalar, 1 postalar, 2 notopleural, 2 scutellars with 1-3 hairlike bristles near each. Prothorax with 1 to 3 bristles, seldom without bristles, pleura further bare.


Wings narrow, nearly as long as thorax and abdomen together. Costa shortly spinulose, reaching tip of m$_2$+ (fourth vein). Medial vein (S$_5$) ending in R$_1$, the latter reaching costa much in front of middle of wing. R$_2$+3 and R$_4$+5 (second and third longitudinal veins) close together, practically parallel. Crossvein (t$_4$) near the middle of the wing, shorter than the apical segment of m$_2$. Basal part of the anal vein present or only indicated by a fold. Wing membrane may be differently coloured according to the sexes.

Abdomen cylindrical, longer than thorax. Hypopygium sessile; cerci long, strap-like, haired; in some American species the hypopygium is small, enclosed in the pre-abdomen, and bears only short ceri (see discussion below, page 152). Female genitalia with crest of dornen.

2.1.2. *Cynatopus tibialis* Kertész, 1901

Természet. Füz. 24, 409, Pl.20, Figs.6-7.

Redescription Figs.1-4.

Robust species. Front tibia in male with two apical bristles, metatarsus bent and longer than tibia, a comb of hairs on fourth tarsal segment of front legs.

Male

Head black, dusted, with strong black bristles and hairs. Only the lower postoculars fine and more brownish. No postocular bristles on ocular tubercle. Face and clypeus as in Figure 1b. Antennae black (Fig.1). Arista nearly three times as long as antenna. Palpi with long blackish hairs (Fig.1c), basal part with horseshoe-shaped pits. Buccal structure represented in Figures 1d, 4a-d.

Thorax black, dusted, with strong black bristles. Chaetotaxy typical of the genus, i.e. five dorsocentral and three prothoracic bristles.

Legs black, finely dusted. Coxae, especially coxae I with a brownish hue. All trochanters yellow. Apex of femur I and extreme base of tibia I brownish yellow. First tarsal segment of fore legs growing yellow towards apex, following segments yellow. Tarsi of middle and hind legs likewise growing yellow from the apical half of first tarsal segment.

Coxa I with an anterodorsal series of about 10 bristles (nearly half as long as diameter of coxa), flanked in front by a series of much shorter and weaker bristles shifting to inner side of coxa at tip. Femur I (Fig.2e) basally strongly thickened, growing narrower very gradually to about two-thirds of length, then abruptly sloping to the apical part, that is scarcely thicker than tibia. Owing to the abrupt sloping, the femur shows a bulge beneath in profile on two-thirds of its length. At the very base of the femur, there is a group of crowded strong bristles, some of which arise from little warts; some of these bristles are flattened and bent at the tip (Fig.2b). From these bristles (the longest of which are as long as the femur is thick at that place) a series of gradually shortening anteroventral bristles runs to the bulge. At the bulge, two strong bristles are longer than the femur is thick at that place. Posteroventrally a row of very short bristles starts from the basal group of bristles. Just in front of the bulge there are three stronger bristles which, however, are not as long as the femur is thick. On the posterior side of femur I, a series of closely set bristles begins with some tiny bristles near the base and runs with gradually lengthening bristles to a point just after the bulge, where the last bristle is about as long as the femur is thick. The narrow apical part of the femur bears a single posteroventral bristle preapically. Dorally the femur bears only hairs.

Tibia I (Fig.2c-d) is of nearly equal thickness throughout its length and shows a winding like a very protracted 'z'. Close to the base, there is an isolated anterior bristle, that is very strong and flattened, nearly twice as long as the tibia is thick (Fig.2). Anteroventrally, there is a row of bristles, the first of which, at the base, is about as long as the tibia is deep; then, the bristles decrease in length to about one-third of the length of the tibia from the base, whereupon they increase again in length towards the apex, where the row is closed by two very long and strong apical bristles (twice as long as the tibia is deep). Posteroventrally, there is a series of short bristles, beginning at about one-third of the tibia from the base. Dorsally only scarce, very short bristles are present, besides a not very strong apical bristle, that is somewhat
shorter than the tibia is deep. The first tarsal segment of leg I (Fig. 2e) is very long and thin and curiously bent (like a very protracted 's'). Ratio tibia I: first tarsal segment = 3:5. Posteriorly and ventrally there are rows of short bristles, shorter than the tarsal segment is thick. Near the base, there are four anteroventral bristles, the second of which is the longest (one and a half times as long as the tarsus is deep). On three-quarters from the base, an isolated, not very strong bristle is seen anteriorly (about as long as tarsus is deep). Length ratio of tarsal segments 1 to 5 = 5:2:1.4:1:0.8. The second tarsal segment does not show any remarkable bristles. The third tarsal segment has some longer small bristles ventrally and anterodorsally towards apex, besides an apical anterodorsal bristle, that is remarkably much stronger and twice as long as the tarsus is thick. The fourth tarsal segment anterodorsally bears a comb of long hairs, that is broader than the diameter of tarsus (Fig. 2f). The fifth tarsal segment is flattened dorsoventrally and somewhat broadened.

Coxae II bear a row of hair-like bristles starting from the usual external bristle and running obliquely downwards and inwards and ending on the interior side with a somewhat stronger bristle. Femur II is long and slender, slightly thickened in its basal half, sparsely bristled; three to five anteroventral bristles near the apex are somewhat stronger and a little longer than the diameter of the femur. Tibia II is a little shorter than femur II; only one ventral bristle near apex is somewhat longer than the tibia is deep. Length ratio of tibia II and the five tarsal segments = 7:5:2:1.2:0.6:0.6.

Coxae III with one external bristle. Femur III long and slender, slightly bent in front of middle. From base to about middle, a row of antero- and posteroventral bristles, the longest of which scarcely as long as the femur is deep. Tibia weakly bristled; an anterodorsal and a postero- dorsoal bristle near the base and a longer postero- dorsoal in the preapical crown. Length ratio of femur, tibia and tarsal segments = 8:7:5.5:2.8:1.6:0.8:0.8.

Wings hyaline with dark brown veins, growing yellow towards the base. Tp: apical segment of m4+5 is 3:8. Length ratio of apical to basal segment of m1+2 = 29:27. Halters white. Squamulæ white, fringed with brownish hairs.

Abdomen black, dusted except for the shining anterior and posterior margins of the tergites. Tergites with short black bristly hairs. Stermites with long brownish hairs. Some stronger black bristles on hind margin of third sternite. In lateral view, fourth abdominal segment narrowed. On basal border of sixth sternite, a pair of weakly sclerotized appendages with a sickle-shaped ciliated head (Fig. 4c). Eighth segment with a pair of long cerci, seven times as long as deep, brownish black, with long brownish hairs (Fig. 4e).

Female
The female with secondary sexual characters. Face much broader than in male. Structure and ornamentation of front legs less complicated and wing membrane brownish.

Femur I basally thickened, becoming gradually thinner towards the tip (Fig. 3c). An anteroventral row of bristles with two long basal; remainder shorter but variable in length. In the posteroventral row, four bristles longer than the femur is deep, be-
ventral and posteroventral rows; four apical bristles. Femur III without remarkable bristles. Tibia III also with a strong anterodorsal and a dorsal bristle near its base; a row of prominent anteroventral bristles (the posteroventral row not prominent) and a crown of apicals.

Abdomen with 5 visible segments. Each tergite with 2 silvery dusted patches. Wing venation identical to male's but wing membrane somewhat brownish. Six dorsens (Fig.3d).

Body length: 3.7–4.0 mm; wing length: 3.5–3.7 mm.

**Material**
Laing Island (Bogia, Madang Province) 26.4.1982, 3 d, 19 (sample no.1004); 20.6.1982, 3 d, 19 (1372); 1 d, 49 (1374); 19 (1375); 14.6.1982, 1 d, 19 (1309). Coast halfway between Condor Point and Boroi, 17.5.1982, 2 d.

**Habitat**
*C. tibialis* was found running on the beach by high tide but went on the reef flat at low tide. It was not found on the black volcanic beaches in the Hansa Bay. So it is supposed to be bound to reefs.

2.1.3. *Cymatopus leopoldi* sp.nov. (Figs 5-6)
Similar in body structure to *C. tibialis* but smaller. Front leg in male with 3 thick, curved spines anterodorsally on tibia; metatarsus straight, a little longer than tibia; fourth tarsal segment without comb of hairs.

General morphological as described in the genus diagnosis.

**Male**
*Head* black, dusted with black hairs and bristles. A pair of small postocellar bristles on ocellar tubercle (Fig.5a). Antennas black; arista nearly three times as long as antenna. Postocellar bristles uniseriate above, becoming hairlike and multiseriate below. Some long black bristles near the tip of the palpi (Fig.5b).

*Thorax* black, dusted. Chaetotaxy as in the genus. Five dorsocentrals, three prothoracic bristles and three smaller black bristles on prothoracic collar.

*Legs* black, dusted, with black hairs and bristles. Extreme apex of coxae I and all trochanters yellowish brown, so as the apical third of femur I, extreme base and apical half of tibia I. Tarsi I yellow from tip of first segments onwards. Tarsi II and III gradually growing yellow towards tip.

*Coxae I* with an anterodorsal series of 6 bristles on basal half, the uppermost the longest. In front of them, a row of weaker bristles increasing in length towards apex. Two short anterior bristles.

*Femur I* (Fig.5c) strongly incrassate at base, gradually tapering for two-thirds of its length, then abruptly sloping to the apex. Ventrally at the base, a half circle of short spine-like bristles, which are partly flattened and arise from little warts. A spaced row of finer bristles runs posteroventrally to beyond the middle. One-third from the apex, three ventral bristles are present, two times as long as the femur is deep at this level. On the narrow apical part, two strong posteroventrals longer than femur is deep. Anteroventrally to ventrally from the base, a series of long, fine bristles, increasing in length. Anteriorly one-third from the apex, three long, strong bristles close together.

*Tibia I* basally narrow, then at two-fifths abruptly bending and thickening. Apically the tibia ends in a ventral wart-like spur bearing a long bristle. On the narrow basal part, two long, bent, ventral bristles, three times as long as tibia is deep at that level. Dorsally, a row of spaced hairlike bristles. On the 'bend', anteroventrally, a protuberance whereon two groups of bristles: more dorsally two thin bristles, anterodorsally three flattened apically bent, crowded bristles. All those bristles are longer than the tibia is deep. Ventrally from the 'bend' towards the apical spur, a series of closely set,
gradually lengthening bristles. The preapical anterior comb of spines rather narrow.
First tarsal segment of front leg long and thin, just a little longer than the tibia (25:22).
Ventrally, with two series of short bristles, about as long as the tarsus is deep. Near the
base, a group of slightly longer hairlike bristles. Dorsally, two series of short ad-
pressed bristles. At the apex, some longer bristles. Second tarsal segment, ventrally
on basal half, with three, in length increasing bristles. Remaining tarsal segments with
out remarkable bristles. Fifth segment hardly broadened.

Coxae II with an external, an anteroventral near tip and three strong apical bristles
ventrally. Tibia II about as long as femur II with an apical crown of stronger bristles.

Coxae III with an external bristle. Femur III long and slender, slightly bent in
basal half, as long as tibia. Tibia III with some longer apical bristles. Length ratio

Wing (Fig. 5d) hyaline with brown and brownish yellow veins. Ratio \( T_p : \) apical
part of \( m_{4+4} = 7:18 \). Ratio of apical to basal parts of \( m_{4+2} = 40:33 \). Halteres white.
Squamulae white, with black hairs.

Abdomen black, dusted. The black bristly hairs very short on tergites, longer on
sternites. Hypopygium represented in Figures 6a-b. Cerci oblong, nearly seven times
as long as deep, brownish black, with long black hairs.

Body length: 3.2 mm; wing length: 3 mm.
Female unknown.

Type material
Holotype: male, Papua New Guinea, Laing Island (4°10'20"S-144°52'20"E, Bogia,
Madang Province) 14.6.1982 (leg. P. Grootaert, sample no.1311), preserved in alcohol
in coll. IRSNB (IG no.26480).
Paratype: Papua New Guinea, Laing Island (Bogia, Madang Province), 1 d 14.6.
1982 (leg. P. Grootaert, sample no.1310), preserved in alcohol, front leg in slide
no.82.12.10.03; abdomen in slide no.82.12.10.01; wing in slide no.82.12.10.02 in
coll. IRSNB.

Type locality and habitat
Cleopoldi was found on the beach and on the reef flat together with C. tribialis on the
northern tip of Laing Island (Bogia, Madang Province).

Derivatio nominis
C. Cleopoldi is dedicated to His Majesty King Leopold III who patronizes the biological
station on Laing Island.

2.1.4. Key to the males of Cymatopus Kertész
1 Hyponygium sessile, with long and narrow cerci. Postoculars below uniseriate or
forming 'favours' - 2
- Hyponygium small, enclosed in the preabdomen, with mostly hidden cerci and
other appendages. Postoculars uniseriate below - 7
2 Tibia I without remarkable bristles or other ornamentations. Length less than
2.5 mm - 3
- Tibia I with remarkable bristles or otherwise ornamented. Length more than
2.5 mm (only calcaratus Par. smaller: 1.75 mm) - 4
3 Coxae I white-haired, with a longitudinal series of short black spines. Tibiae II
and III without long hairs. 4 dorsocentrals. Cerci yellowish, with yellow hairs.
South Queensland - simplex Parent, 1941
- Coxae I black-haired, without spines or bristles. Tibiae II and III with very long
hairs towards tip. 5 dorsocentrals. Cerci black, with black hairs. Christmas I.
- longipilus Parent, 1935
4 Length only about 1.75 mm. Tibia I with a very long apical spur. Prothorax with
one bristle. Christmas I.
- calcaratus Parent, 1935
- Length 2.5-4 mm. Tibia I with at most a short triangular spur. Prothorax with
two or more bristles or without bristles - 5
5 Wings of very peculiar form. Postoculars uniseriate, very long about middle, form-
ing a remarkable collar. Prothorax without bristles. Coxae I and legs I largely
yellow. Third antennal segment about 1.5 times as long as broad. Malaya.
- malayensis Parent, 1935
- Wings of ordinary form. Postoculars below forming 'favours'. Prothorax with 3
bristles. Coxae I and legs I largely black. Third antennal segment about as long as
broad. New Guinea - 6
6 First tarsal segment of leg I very long and thin, more than 1.5 times as long as
tibia I. Second tarsal segment of leg I much longer than third segment, without
remarkable bristles. Fourth tarsal segment with a comb of very long hairs. Larger (about 3.75 mm) - tibialis Kertész, 1901.
- First tarsal segment of leg I long and thin, only a little longer than tibia I. Second tarsal segment of leg I as long as the third segment, bearing 3 ventral bristles. Fourth tarsal segment without long hairs. Smaller (about 3 mm) - leopoldi n.sp.
- 4 dorsoceitals. Femur I ventrally at base with 3 flattened, apically blunt bristles. Galapagos I. - setosus (Curran, 1932)
- 5 dorsoceitals. Femur I ventrally at base otherwise bristled
- 8 Coxae I with a row of spine-like bristles. First tarsal segment of leg III as long as the three next tarsal segments together. Tibia I with anterior and ventral bristles. Samoa - spinosus (Parent, 1934)
- Coxae I with hairs only. First tarsal segment of leg III very much shorter than the three next segments together. Tibia I without bristles or with only ventral bristles - 9
- First antennal segment bare. Tibia I with ventral bristles. Knob of halters yellow - 10
- r4+5 (vein 3) curved slightly but distinctly backwards at tip. Femur I with 3 longer anteroventral and 3 longer ventral bristles. Dominica - bredini Robinson, 1975.
- 4+5 (vein 3) not (or scarcely) curved back at tip. Femur I with 5-7 long anteroventral and a series of long ventral setae in basal half. Panama - wirthi Robinson, 1975.

2.1.5. Checklist of the genus Cymatopus Kertész
Cymatopus Kertész, 1901
Természet. Füsz. 24:408.
Type-spec.: Cymatopus tibialis Kertész, 1901, by monotypy.
Syn.: Van Duzeae Parent, 1934
Type-spec.: Van Duzea Cheesmani Parent, 1934, by monotypy.
1. C.bredini Robinson, 1975
Cymatopus bredini Robinson, 1975, Smithsonian Contr. Zool. 185:125, Figs.161, 224-228 (δ and θ).
Distribution: Dominica (type-loc.: Calibishie).
2. C.calcaratus Parent, 1935
Distribution: Christmas I.

3. C.cheesmani (Parent, 1934)
4. C.leopoldi sp.nov. (δ only)
Distribution: New Guinea (type-loc.: Laing Is.).
5. C.longipilus Parent, 1935
Distribution: Christmas I.
6. C.malayensis Parent, 1935
Distribution: Malaya (type-loc.: P.Aor).
7. C.setosus (Curran, 1932)
Distribution: Galapagos I. (type-loc.: Floreana).
8. C.simplex Parent, 1941
Distribution: Australia (type-loc.: Burgenpary, S.Queensland).
9. C.spinosa (Parent, 1934)
Distribution: Samoa I.
10. C.tibialis Kertész, 1901
Cymatopus tibialis Kertész, 1901, Természet. Füsz. 24:409, Pl.20, Figs.6, 7 (δ and θ).
Distribution: New Guinea (type-loc.: Seleo and Berlinhafen).
11. C.wirthi Robinson, 1975
Distribution: Panama Canal Zone (type-loc.: Kobbe Beach).

2.1.6. Discussion
The genus Cymatopus seems to comprise two groups. On one hand, the Indo-Australian and Polynesian species with sessile hypopygium: C.tibialis, C.leopoldi, C.malayen-
sis, C. simplex and C. longipilus. On the other hand, four species from America with a small hypopygium enclosed in the preabdomen (Robinson 1975): C. setosus, C. bre- dini, C. cheesmani, C. wirthi; C. spinosus (from Samoa) seems to be related to these American forms.

The status of C. malayensis, with its somewhat longer third antennal segment, no prothoracic hairs and the peculiar wing in the male, is not clear. Further, it is not evident that the headless female described by Parent (1935) may be attributed to the same species.

The four American species are considered here provisionally as a species group, but a study of their hypopygia shows to have their true status, i.e. whether the genus Vanda nesea Parent needs to be reevaluated as genus or as subgenus. The relationship of C. spinosus has to be cleaned up too.

Cymatopus acrostalis Parent, 1937, was transferred to Paraphrosusy by Hardy and Kohn (1964) and later to Conchopus by Takagi (1965). In fact, it should be transferred again to Thambienia Oldroyd, 1956, since Conchopus Takagi, 1965 is a junior synonym, unless the genus Conchopus is split up. The latter is not evident since Takagi (1965) clearly showed the evolution between the different morphological types.

2.2. Genus Cemocarus gen. nov.

Derivatio nominis: from Greek ἴμμος (Këtës), muzzle, and Κάιον (Káros), head, alluding to the prominent clypeus. Gender masculine.

2.2.1. Diagnosis
Hydrophorinae. Face very broad in both sexes. Clypeus prominent, hemispheroid. Palpi not very large, bristled, no apical. Rostrum stout. Frons broad with a pair of frontal bristles in front of the ocellar tubercle. A narrow stripe with very short bristles along the frontal eye margin. A pair of strong ocellars, in front of the lateral ocelli. The ocellar tubercle with minute black bristles. A pair of postoculares. Postoculars uniseriate above, becoming finer and multiseriate below. Eyes pubescent. Occiput convex. Neck inserted near the middle of the head (eyes). Antennae short, with a large third segment. First segment conoid, longer than the second which is ring-like, with a triangular protuberance on the inside and the outside. A circle of bristles present. Third antennal segment trapezoid with a small dorsal and longer ventral projection, the remarkably short arista inserted between them (subapical).

Thorax dusted, arched above, the posterior fourth with a more or less conceave posterior slope. Chaetotaxy: biserial acrostichals, 6 dorsocentrales, 1 humeral, 1 presculteral, 1 sutural, 2 suprasacral, 1 postalar, 2 notopleurals, 4 scutellars. 3 fine prothoracic hairs (no bristles), pleura further bare. Prothoracic collar (neck) very narrow, with a few short hairs.

Legs rather short, simple in structure (no raptorial modifications), without peculiar bristles. Coxae I lengthened, bristled in front. Coxae II bristled in front. Coxae III with an external bristle. All femora somewhat thickened. Fifth tarsal segments long and broad with well-developed pulvilli. Wings narrow, nearly as long as thorax and abdomen together. Costa shortly spinulose, reaching tip of the fourth vein. Medial ending in r. Second and third veins gently bowed and slightly diverging. Crossvein (t1) beyond middle of the wing, shorter than apical segment of fifth vein. Anal vein practically absent, represented by a fold not reaching the wing border.


Moderate-sized black species without metallic shine.

Monotypic. Type species: Cemocarus griseatus (Curran 1926), comb. nov.

2.2.2. Cemocarus griseatus (Curran, 1926) comb. nov.
Ann. S. Afr. Mus. 23, 403, Figs. 7a, 7b (Apousys)
Cymatopus capensis Parent, 1939.
Redescription Figs. 7a-7b.

Male
Main characteristics as in the genus description above.

Head brownish black in ground colour, completely dusted. Bristles not very strong, black, except for the lower postoculares which are rather yellowish. Postoculars present though not much differentiated from postoculares. Postoculars uniseriate above, multiserate and fine below (Fig. 7a). Some minute black bristles near fronto-orbitals (Fig. 7b) and on the posterior part of the ocellar tubercle. Antennae black (Fig. 7c). First segment conoid, longer than deep. Arista bisegmented, with dense pubescence on basal part of second segment, decreasing in density towards tip which is bare. Palpi brownish black, with short bristles. Hypopharynx and labium as represented in Fig. 8a-b.

Thorax brownish black, completely dusted. Chaetotaxy as in the genus description. All bristles black, medium-sized. Acrostichals small, biserial, separated in front; posteriorly closer together on an irregular line which does not reach the posterior fourth of the mesonotum. Scutellum with four margin bristles nearly equal in size. Three fine prothoracic hairs. Pleura further bare.

Legs brownish in ground-colour, dusted, simple in shape (Fig. 7d) without peculiar bristles. Femora somewhat thickened basally, all identical in shape but increasing in length backwards. Posterior femora with a long shining median stripe posteriorly.

Abdomen cylindrical, blackish-brown, completely dusted, with sparse, short black, adpressed bristles. Hypopygium as in Figure 8c. Cerci long, yellowish.

Wings (Fig. 7e) with black veins. Wing membrane brownish. Halteres and squamae yellow with a short yellow ciliation.

Body length 3.2 mm; wing length 3 mm.

Female
No secondary sexual characters.

Body length 3-3.5 mm; wing length 3 mm.
Material
South Africa, Cape Province, Muizenberg (rochers du littoral), leg. M. Bequaert, March 1935. 1 ♂ (holotype of Cymatopus capensis Parent; abdomen in slide 83.01.10.03, legs in 83.01.10.04), 1 ♀ (paratype of C. capensis), 1 ♀ (topotype of C. capensis; head in slide 83.01.10.01, front leg in 83.01.10.02).

2.2.3. Discussion
The present study was based upon the type material of Cymatopus capensis Parent,

1939, and confirms the synonymisation with Aphrosylus griseatus Curran 1926, done by Dyce and Smith (1980). The differences in the descriptions are mainly due to the interpretation of the coloration of the legs, the palpi, and the lower postocular bristles. The aedeagus figured by Curran (1926) seems to be long and fine, but shorter in the specimen we studied. It is not excluded that the tip was broken off in our specimen.

In 1939, Parent seemed to be already unsatisfied about the status of C. capensis and recommended a revision of the genus. It is now removed from Cymatopus on the base of its different antennae and legs. Its phylogenetic position is not discussed, since the fine structure of the mouthparts and hypopygium is not fully understood. Provisionally, it is placed near the genera possessing a fronto-orbital bristle.
2.3. Genus Abatetia Miller, 1945

Nelsonia Parent, 1933, praecoc.
Type-species: Abatetia robusta (Parent, 1933), Figs. 34-40.

2.3.1. Diagnosis


Thorax dusted, divided into two equal parts by the transverse suture. Chaetotaxy: uniserial acrostichals, 5 dorsocentra, 1 humeral, 1 presutural, 1 sutural, and 2 supraalar bristles. Postalar, 2 notopleurals and 2 scutellars. Prothorax with some hairs, no bristles. Pleura further bare.

Legs long but stout. Coxae 1 with black hairs, coxae II and III with an external bristle. All femora basally thickened. In male, femur I with bristles, absent in female. Femur III bent in both sexes, with several series of bristles.

Wings long and narrow. R1 short, reaching the costa far before the middle of the wing. r4-5 and m1-2 converging near tip. Crossvein shorter than apical section of m3-4.5


2.3.2. Discussion

Abatetia robusta (Parent), originally described in the genus Nelsonia Parent was transferred to Cymatopus Kertész by Parent himself (1937). However, it appears that some characteristics do not fit to the actual genus concept of Cymatopus. In Abatetia, the legs are long but stout, especially the femora. The hind femora are bent and heavily ornamented. It is questioned if these are raptorial modifications, since the front legs have the same structure as in Cymatopus. However, in Cymatopus, the four posterior legs are long and slender. Further, the hypopygium structure is different from that in Cymatopus and reminds us of Acyvatopius Takagi 1965. In addition, acrostichals are present, though considered of minor phylogenetic importance.

Since the name Nelsonia Parent is preoccupied, the name Abatetia Miller, 1945 becomes available.

3. KEY TO THE HYDROPHORINAE WITH FRONTO-ORBITAL BRISTLES

The three genera discussed in the present paper possess a pair of fronto-orbital bristles, halfway between the vertex and the antennae. They can be distinguished from other Hydrophorinæ with the same feature by the following key.
Figure 2. *Cymatopus tibialis* Kertész male, S.E.M.; a) front femur and tibia from posteriorly; b) bristles on base of femur; c) tip of tibia; d) anterior view of front tibia; e) front tibia and first tarsal segment; f) front fourth tarsal segment with comb of hairs; g) bristles on front tibia (detail of c). Scale 100 μm.

Figure 3. *Cymatopus tibialis* Kertész S.E.M.; a) ventral view of hypopygium; b) detail of bristles on fifth sternite in male; c) anterior view of front femur and tibia in female; d) tip of female abdomen. Scale 100 μm.
1 Third antennal segment rectangular, at least five times as long as deep (arista very short, apical) — Paraliptus Bezzi, 1923
  — Not so
2 Arista subapical or dorsal
  — Arista apical, third antennal segment oval, conoid to elongate conoid
3 Arista subapical, third antennal segment large, trapezoidal (legs simple, devoid of long bristles)
  — Cemocarus gen. nov.
  — Arista dorsal, third antennal segment conoid — Teneriffa Becker, 1908
4 Front metatarsus short, modified with protuberances
  — Thubemyla Oldroyd, 1959 (= Conchopus Takagi, 1965, syn. nov.)
  — Front metatarsus simple, tubiform
5 Labellae hook-shaped in lateral view with a long recurved, generally protruding hypopharynx — Aphrosylus Haliday, 1851
  — Labellae normal in lateral view, without long protruding hypopharynx
6 Acrostichals absent
  — Acrostichals present
7 Acrostichals uniserial (no prothoracic bristles but some hairs; hind femora bent)
  — Abatetia Miller, 1945
  — Acrostichals biserial
8 Bristles present on prothorax, mesopleura and sometimes on pteropleura
  — Acymutopus Takagi, 1965
  — No bristles on thoracic pleura (a bundle of hairs on prothorax)
  — Scorpium Parent, 1933

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