

Results of the Austrian Hydrobiological Mission, 1974, to the Seychelles-, Comores- and Mascarene Archipelagos

Part IV: The Aquatic Beetles Collected on the Mission to Réunion and Comoro Islands (Coleoptera: Hydrophilidae, Hydraenidae, Gyrinidae)

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(With 4 figures)

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Abstract

The following report is an account of the aquatic beetles collected by Dr. STAR-MÜHLNER and his associates during their limnological survey of the freshwater streams on the islands of Réunion and Comoro in the Indian Ocean.

Introduction

The proximity of the islands of Comoro and Réunion to Madagascar and the continent of Africa suggests that the aquatic beetle faunas of Réunion and Comoro would be derived from faunal elements from those large land masses. This assumption is borne out by the fact that some species of water beetles are known from Réunion, Comoro, Africa, and Madagascar, while other apparently endemic species on these smaller islands have their closest known relatives in Africa and Madagascar.

The aquatic beetle faunas of Réunion Island and Comoro Island have received very little attention probably because the islands are small and are located away from the main routes of world travel. A search of the literature on water beetles provides very few references to the aquatic beetles from these islands. However, the fauna of the large nearby island of Madagascar has been the subject of numerous scientific reports because of its zoogeographical significance and the peculiarities of its animal life. Therefore, any study of the fauna of Réunion Island and Comoro Island must be based on the literature concerned with Madagascar. The proximity of the large land mass of Africa and the dispersal of insects from there to islands in the Indian Ocean also required that the literature treating certain elements of the African fauna be utilized for this report.

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The major publications that included reports on the water beetles of Madagascar and nearby islands are those by KLUG (1833), RÉGIMBART (1895, 1903), and PESCHET (1917). Other authors such as LEGROS (1951) and BRINCK (1955) contributed significant publications primarily concerned with the adephagous families Dytiscidae and Gyrinidae, but some hydrophilids are included in these accounts. Most recently BALFOUR-BROWNE (1954, 1958) described several new species of Hydrophilidae and Hydraenidae from several of the Malagassic Islands. Except for the occasional new species described from the area, very little additional work has been done on the hydrophilids from Réunion Island and Comoro Island.

As a consequence of the relatively little attention given to the polyphagous water beetles of the Malagassic islands, only the following five species have been reported previously from Réunion. Hydrophilidae: *Berosus vinsoni* BALFOUR-BROWNE, *Enochrus reunionensis* BALFOUR-BROWNE, and *Hydrophilus aculeatus* LAPORTE. Hydraenidae: *Hydraena borbonica* FAIRMAIRE, and *Sicilicula borbonica* BALFOUR-BROWNE. It is not surprising, therefore, that Dr. STARMÜHLNER's collections added records of five additional species of hydrophilid beetles from Réunion.

Only the following three species of polyphagous water beetles have been reported previously from Comoro island. Hydrophilidae: *Sternolophus comoriensis* FAIRMAIRE (= *angolensis* ERICHSON), and *Berosus bergrothi* RÉGIMBART. Hydraenidae: *Hydraena borbonica ofella* BALFOUR-BROWNE. Although Dr. STARMÜHLNER collected only one species of hydrophilid from Comoro, it is a new record for the island.

The collections made by Dr. STARMÜHLNER and his associates consist of the following interesting species.

Systematic part

Hydrophilidae

Berosus vinsoni BALFOUR-BROWNE

Berosus vinsoni BALFOUR-BROWNE, 1954: 231.

This small (4 mm × 2 mm) darkly irrorate, maculate, and pubescent species belongs to the *nigriceps* group of *Berosus* from Africa, and in that group it appears to be most closely related to *Berosus bergrothi* RÉGIMBART. Thus far, *B. vinsoni* is known only from Réunion and is the only species of *Berosus* known from that island. The type-material used for the description of *B. vinsoni* came from Plain des Cafres and Plaine des Palmistes.

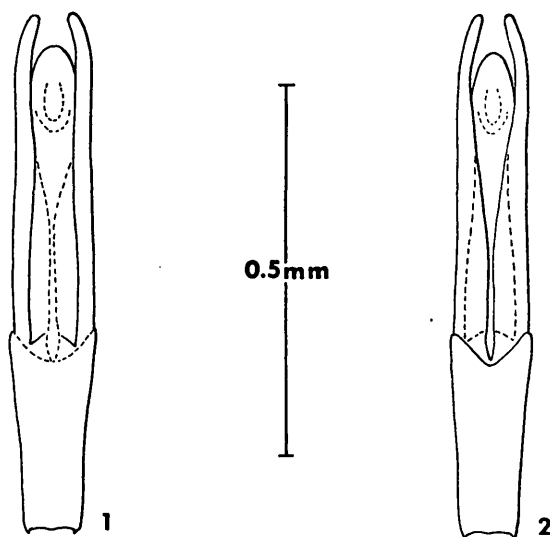
Specimens examined: Réunion: Langevin River, Sta. F/Ré/11, 9 Apr. 1974, in flooded rock-pools near the banks of the river, 6 males, 5 females; Grand Bras de la Ravine Seche in the Plaine des Palmistes, Sta. F/Ré/8, 7 Apr. 1974, in flooded rock-pools in dry river bed, 12 males, 8 females.

Laccobius mascarensis, new species

(Figures 1—2)

This small species is very similar to *Laccobius revelierei* PERRIS from which *L. mascarensis* may be distinguished by the presence of brown sutural and humeral maculae, by the hind trochanters of females rounded instead of prolonged to a long point, and by the straight instead of recurved apices of the parameres of the male genitalia.

Holotype male: Head dark green with metallic reflections from base forward between eyes, over middle of clypeus (area as wide as labrum), and over entire labrum; sides of head in front of eyes testaceous. Pronotum testa-



Figs. 1—2. *Laccobius mascarensis* n. sp., holotype male, genitalia: 1, ventral view; 2, dorsal view

ceous except a solid brown macula on disc, macula apically as wide as interocular width but narrowing toward scutellum. Scutellum testaceous. Elytra with testaceous ground color and brown irroration. Each elytron with dark brown diagonal macula diverging from suture at midlength, with a dark brown humeral macula, and 3 fine longitudinal discal vittae. Ventral surface of head testaceous except gular area darker brown. Prosternum and inflexed margin of pronotum testaceous. Mesosternum and metasternum dark reddish brown. Abdominal sterna moderately dark brown medially, becoming testaceous laterally; last visible sternum testaceous. Epipleura testaceous.

Length 2.3 mm, greatest width 1.2 mm. Head strongly microreticulate; with coarse, widely spaced punctures scattered over surface, punctures separated by distances equal to 1 to 6 times their width and more numerous between eyes. Pronotum microreticulate; with coarse punctures as on base of

head; sides narrowly margined, margins slightly wider posteriorly. Basal two segments of tarsi of front legs very broad; first segment broadest and bearing a large, ventral, sucking disc. Elytra moderately coarsely, moderately densely punctate; punctures not in serial rows. Prosternum carinate. Mesosternum moderately laminate, thicker anteriorly and bearing a small apical tooth. Hind trochanter rounded to apex. Last visible abdominal sternum densely and finely alutaceous unlike preceding sternum which is smoother, less pubescent, and coarsely, moderately sparsely punctate. Male genitalia as illustrated (Figures 1—2).

Female: Females may be distinguished from males by the absence of the broadened first and second tarsal segments of the front legs, by the entirely light testaceous abdominal sterna, and the hind trochanters with a distinctive dense fringe of long yellow setae at apex.

Variations: The color pattern is lighter on teneral specimens; consequently, the diagonal elytral maculae may be quadrate instead of elongate. On two specimens the pronotal macula is enlarged and is wider toward the base of the pronotum. Also, on some specimens the apical tooth on the mesosternal lamina is very reduced.

Types: Holotype male and allotype from Réunion, Mat River, middle course near the bridge of St. André, Sta. F/Ré/14, 5 Apr. 1974, USNM Type No. 73590, deposited in the National Museum of Natural History, Smithsonian Institution.

Paratypes: Same data as type, 5 males, 4 females; Galets River; Sta. F/Ré/24, 17 Apr. 1974, near the banks, swimming over brown, gelatinous algae; together with *L. starmuehlneri*; 1 male, 3 females; Langevin River, Sta. F/Ré/11, 9 Apr. 1974, in flooded rock-pools near the border of the river, 1 male; Cascades of Niagara on St. Suzanne River, Sta. F/Ré/15, 12 Apr. 1974; near the banks; together with *P. chalceus*; 1 female.

Etymology: Because Réunion is one of the Mascarene islands and because I believe this new species will be found on other islands in the area, I have named it *mascarensis*.

Laccobius starmuehlneri, new species

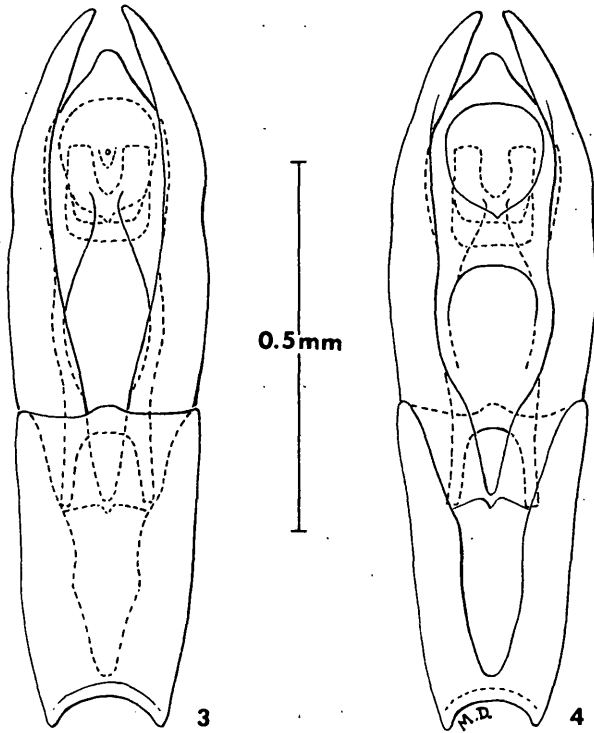
(Figures 3, 4)

This new species is similar to *Laccobius erlangeri* RÉGIMBART but *L. starmuehlneri* may be easily distinguished by the distinctive, obtusely toothed apex and the large dorsal gonopore near the apex on the median lobe of the male genitalia as illustrated (Figures 3—4).

Holotype male: Head dark green behind eyes, dark reddish brown between eyes; labrum dark green; clypeus dark green behind labrum but becoming testaceous laterally and dark reddish brown posteriorly; sides of head in front of eyes testaceous. Pronotum with broad dark reddish-brown macula exten-

ding a distance slightly beyond outer margins of eyes; lateral margins of macula strongly sinuate.

Scutellum dark brown, almost black. Elytra with testaceous ground color and dark brown sutural macula on each elytron at midlength; each elytron also with dark brown humeral macula; brown on disc of elytra before sutural macula suffuse, elsewhere brown is finely vittiform except laterally where brown is confined to the base of each setate puncture. Ventral surface of head



Figs. 3–4. *Laccobius starmuehlneri* n. sp., holotype male, genitalia: 3, ventral view; 4, dorsal view

reddish brown; antennae and palpi testaceous. Prosternum brown, inflexed margins of pronotum testaceous. Mesosternum, metasternum, and abdominal sterna reddish brown. Epipleura testaceous.

Length 2.8 mm, greatest width 1.4 mm. Head strongly microreticulate; with coarse, widely spaced punctures scattered over surface, punctures separated by 2 to 4 times their width and becoming progressively larger toward base of head. Pronotum microreticulate and punctate, punctures large as on base of head and similarly spaced; sides narrowly margined, margins slightly wider posteriorly. Elytra moderately coarsely, moderately densely punctate especially on disc; punctures not in serial rows although the finely

vittiform color pattern falsely suggests rows; punctures smaller and sparser laterally. Prosternum carinate. Mesosternum moderately laminate, thicker anteriorly and bearing a small apical tooth. Hind trochanter rounded at apex. Last visible abdominal sternum densely finely alutaceous and moderately densely pubescent unlike preceding sternum which is smoother, less pubescent and is coarsely sparsely punctate.

Male genitalia as illustrated (Figures 3—4).

Female, unknown.

Types: Holotype male from Réunion: Galets River, Sta. F/Ré/24, 17 Apr. 1974, near the banks, swimming over brown, gelatinous algae; together with *L. mascarensis*; USNM Type No. 73591, deposited in the National Museum of Natural History, Smithsonian Institution.

Paratype: Same data as holotype, 1 male.

Etymology: This species is named for the collector, Dr. Ferdinand STARMÜHLNER, who collected these interesting beetles during his limnological studies.

Paracymus chalceus RÉGIMBART

Paracymus chalceus RÉGIMBART, 1903: 32.

This small (2 mm × 1.2 mm), black, coarsely punctate species occurs widely in Africa and Madagascar. Apparently the single male specimen collected by Dr. STARMÜHLNER is the first record of this species from Réunion.

Specimen examined: Réunion: Cascades of Niagara on the St. Suzanne River, Sta. F/Ré/15, 12 Apr. 1974, near the banks, together with *L. mascarensis*, 1 male.

Sternolophus (Sternolophus) solieri LAPORTE

Sternolophus solieri LAPORTE, 1840: 54.

In his treatment of the Coleoptera from Madagascar and the coast of Africa, FAIRMAIRE (1869) described a new species, *Sternolophus comoriensis*, from the island of Comoro. This name was synonymized by d'ORCHYMONT (1912) under *S. angolensis* (ERICHSON), a large species (12.5 mm to 14 mm) which is easily distinguished by its very elongate maxillary palpi, the emarginate apicomедial margin of the last sternum, and the pubescent portion of the keel which lacks abrupt lateral margins in front of the apical spine. Therefore, two species of *Sternolophus* presumably occur on Comoro because the pair of specimens collected by Dr. STARMÜHLNER are *S. solieri*. The species *solieri* occurs widely from Palestine south through much of Africa and on Madagascar.

Specimens of *S. solieri* may be distinguished from *S. angolensis* by their smaller size (10 mm to 12 mm), shorter maxillary palpi, apicomедial margin of the last sternum not emarginate, and the metasternal portion of the keel glabrous and with abrupt lateral margins in front of the apical spine.

Specimens examined: Comoro: Ouani River, Anjouan, Sta. F/An/10, 8 Mar. 1974, between plants and roots hanging in the water near the banks, 1 male, 1 female.

Dactylosternum sp.

The small (3.5×2 mm) size of this species distinguishes it from all of the species of *Dactylosternum* described from Madagascar and the neighboring islands except *pygmaeum* RÉGIMBART. From the slightly smaller *pygmaeum* (3 mm), the single female collected by Dr. STARMÜHLNER may be recognized by the presence of only the sutural stria instead of a series of punctate striae on each elytron. However, even though this species is probably undescribed I am not describing it because the single specimen is a female, and because I believe the description should wait until the male with its additional distinguishing characteristics is available.

Specimens examined: Réunion: Affluent of Mat River, Sta. F/Ré/1, 4 Apr. 1974, between edge near the banks, 1 female.

Hydraenidae

Sicilicula borbonica BALFOUR-BROWNE

Sicilicula borbonica BALFOUR-BROWNE, 1958: 137.

The genus *Sicilicula* was described by BALFOUR-BROWNE (1958) for two distinctive species, *S. teres* BALFOUR-BROWNE from Madagascar and *S. borbonica* BALFOUR-BROWNE from Réunion. *Sicilicula teres* was described from a single female specimen and *S. borbonica* from a single male specimen. Therefore, the series of 13 specimens of *borbonica* collected by Dr. STARMÜHLNER is extremely interesting because the specimens are the first known since the unique type was described. Also, both sexes of this species are now available for comparative purposes.

In describing *S. borbonica*, BALFOUR-BROWNE noted that the unique female type-specimen had very explanate elytral margins and that "This last feature is, however, almost certainly a sexual character." Comparison of male and female specimens of *borbonica* confirms that BALFOUR-BROWNE was correct in his assumption because the elytral margins while explanate in males, are about twice as wide in females, especially at about the apical third. The more explanate elytral margins give the female elytra a nearly rectangular appearance; whereas, the male elytra appear ellipsoidal. In addition, the last visible segment of the female abdomen is broader and rounded apically; whereas, the segment is more conical and feebly emarginate apically in males. The small emargination is difficult to see on dry pinned specimens but may be seen readily on male specimens immersed in alcohol or other liquid. Females vary in length from 2.2 mm to 2.7 mm; and the usually smaller males vary in length from 2.0 mm to 2.5 mm. The unique type of *borbonica* came from Cirque de Mafate, Plateau de Marla, 1600 meters.

Specimens examined: Réunion: Torrent near Coteau, Kerveguen in the upper forests of Cilaos at an altitude of 1.400 m, F/Ré/17, 13 Apr. 1974, frequently on stones near the banks, 8 males, 5 females.

Gyrinidae

Gyrinus nitidulus FABRICIUS

Gyrinus nitidulus FABRICIUS 1798: 66.

Gyrinus mascarensis BALFOUR-BROWNE, 1945: 28.

This small (3 mm × 2 mm) shining black, convex species was described by FABRICIUS as coming from — Indian waters. This citation was originally interpreted as referring to the Indian subcontinent, and consequently was the source of confusion in recognition of the species. BALFOUR-BROWNE (1945) published an account of this problem and proposed a new name, *mascarensis*, for the taxon on Mauritius and Réunion. However, no specimens conspecific with the Fabrician type have been found from the mainland of India and old records from that country undoubtedly are erroneous (fide BRINCK 1955: 47). Therefore, the name *nitidulus* is now used for the species from Madagascar, Réunion, and Mauritius. *Gyrinus nitidulus* was keyed and discussed in publications on water beetles of Madagascar by the following authors: RÉGIMBART (1895), PESCHET (1917), and LEGROS (1951). Also, the species was keyed, discussed briefly and the male genitalia was illustrated by BRINCK (1955).

Specimen examined: Réunion: Grand Bras de la Ravine Seche in the Plaine des Palmistes, Sta. F/Ré/8, 7 Apr. 1974, on the surface near the banks, 1 male.

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