

Description of *Ophthalmocyclus* gen.n. from South India (Coleoptera: Hydrophilidae)

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Abstract

Ophthalmocyclus gen.n. from South India, comprising one species, *O. mazzoldii* sp.n., is described and assigned to the *Oocyclus* genus group within the subfamily Hydrophilinae.

Key words: Coleoptera, Hydrophilidae, Hydrophilinae, Laccobiini, *Oocyclus*-group, *Ophthalmocyclus*, new genus, new species, Oriental, South India.

Introduction

The "*Oocyclus*-group" (HANSEN 1991, 1999) comprises twenty-one species and four genera: *Tritonus* MULSANT, 1844 (monospecific) occurs in the Mascarene Islands (d'ORCHYMONT 1929, BAMEUL 1986), *Scoliopsis* d'ORCHYMONT, 1919 (monospecific) in South India and Sri Lanka, *Beralitra* d'ORCHYMONT, 1919 (two species) in South America (OLIVA 1996), and *Oocyclus* SHARP, 1882 (17 species) in the Oriental and Neotropical Regions (HEBAUER & WANG 1998). As far as known, all species live in hygropetric habitats.

In 1994 Paolo Mazzoldi collected one specimen of a new genus of this group in South India, which is described in this paper.

Ophthalmocyclus gen.n.

Type species: *Ophthalmocyclus mazzoldii* sp.n.

DESCRIPTION: Body rather broadly oval, weakly convex, widest behind middle, outline of body without pronoto-elytral angle.

Labrum exposed, large and well sclerotized, convex, shallowly emarginate, with few setae anteriorly. Clypeus anteriorly weakly emarginate, distinctly convex, bluntly deflexed towards anterior margin and anterior corners, thus anterior portion inflated. Frontoclypeal suture hardly visible. Clypeus and frons with shallow depressions and coarse irregular punctures. Eyes distinctly protruding, dorsal portion of eyes more than three times as large as ventral portion, anteriorly diverging, significantly emarginate posteriorly by cranial projecting area of the well developed tempora, thus of pronounced reniform shape. Field of vision mainly directed dorsad. Ventral portion of eyes very small; anterior margin not excised; posterior margin not demarcated from tempora by a postocular ridge; surface of eyes posteriorly continuous with surface of tempora. Eyes at their closest points separated by slightly more than width of one eye. Tempora slightly converging (not abruptly narrowed) behind eyes, with a sharp ridge, visible on ventral face of head capsule, arising from posterior margin of eye, running mediocaudad, separating a cranial glabrous area from a caudal pubescent portion of tempora. Antennae eight-segmented; antennomeres 1 – 5 glabrous; club densely pubescent. Scapus ca. three times as long as pedicellus; cupula well developed; club ca. two times as long as wide. Antennae concealed by

clypeus, inserted anteromedially to ventral portion of eye, near lateral margin of clypeus. Mandibles not examined. Maxillary palpi ca. 0.4 times as long as width of head, palpomeres 2 – 4 rather stout, not inflated, palpomere 4 almost symmetrical, slightly longer than palpomere 3. Mentum ca. 1.25 times as wide as long, flat, anterior margin projecting medially. Submentum flat, in same level as mentum. Labial palpomere 3 longer than palpomere 2. Gula distinctly bulged, with a tender median longitudinal carina, separated from submentum by a distinct furrow. Gular sutures narrowed in midlength, widened anteriorly and posteriorly.

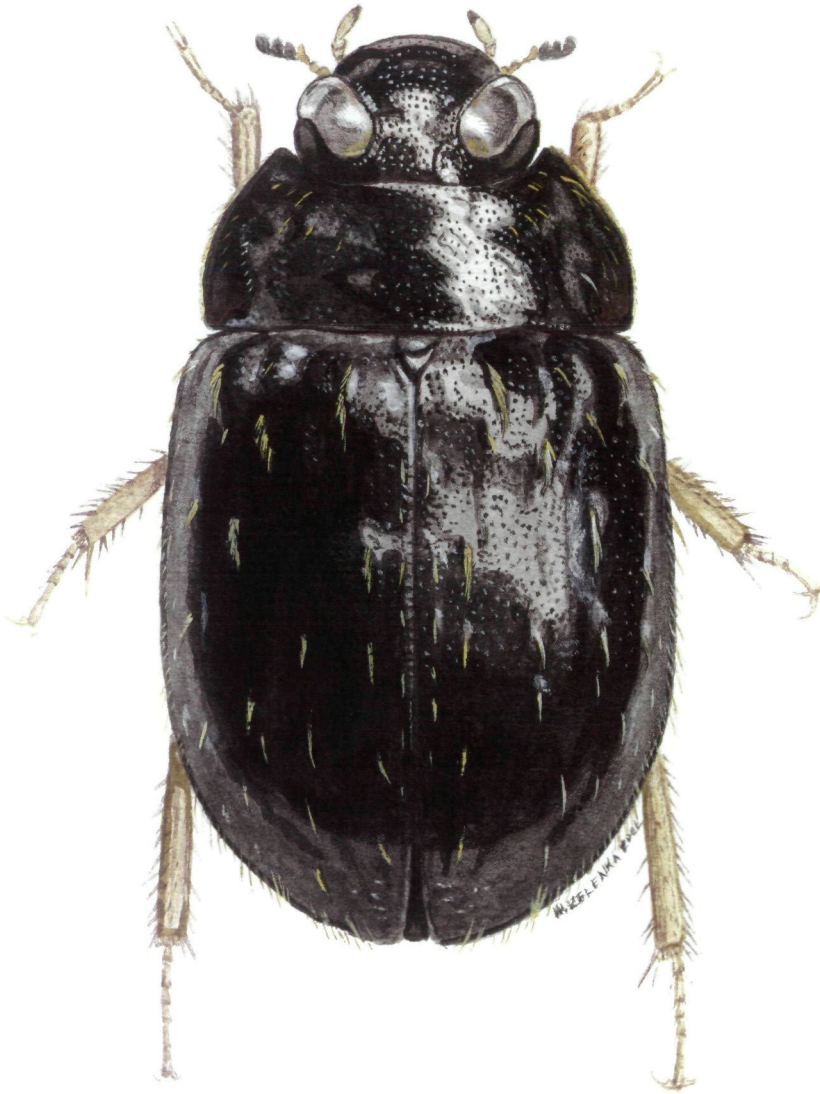


Fig. 1: *Ophthalmocyclus mazzoldii* sp.n., habitus.

Pronotum much wider than long, horizontal diameter moderately convex, median diameter very weakly convex. Lateral margins significantly converging anteriorly, anterior corners projecting cranially. Posterior margin not sinuate, posterior pronotal angles not produced into spines. Dorsal pronotal face unevenly structured by shallow depressions and slight elevations. Lateral pronotal margins densely fringed with long hairs, originating from dorsal face. Prosternum well developed, slightly bulged with a very tender median carina with some long setae, without strong spines anteromedially, with very weak anteromedian projection, with long posterior process between coxal cavities, not significantly widened at apex, reaching caudal margin of procoxae, slightly overlapping median portion of anepisterna. Mesoventrite approximately trapeziform, with conspicuous, ventrally directed, median protuberance with some long strong setae. Posterior process narrow, reaching middle of mesocoxal cavities, meeting anterior process of metaventrite. Anapleural sutures anteriorly strongly converging in weakly curved, nearly straight lines, not meeting anterior margin of mesothorax, from which it is very narrowly separated by strong anterior margin of anepisterna. Mesocoxal cavities narrowly separated. Scutellar shield well developed, triangular. Elytra sculptured by some rather irregularly arranged, broad shallow depressions and slight elevations, with irregular punctures and conspicuous subseriate rows of setiferous punctures arranged in groups. Scutellary stria and sutural stria absent. Elytral suture not elevated, elytral margins not explanate. Epipleura pubescent, almost horizontal, wide anteriorly, gradually narrowed caudally, fading at level of first visible abdominal ventrite. Pseudepipleura glabrous, moderately oblique, basally slightly broader than epipleura, gradually narrowed caudally, reaching approximately as far as epipleura caudally. Metaventrite weakly convex, middle portion slightly raised, with a shining, glabrous central area, with very short, narrow, blunt projection anteriorly between mesocoxae, without significantly strengthened anterior margin towards mesocoxal cavities, without pit-like groove mesally. Anepisternum 3 parallel-sided, ca. five times as long as wide. Katepisternum 3 visible almost in total length, concealed by metaventrite mesally. Ventral face of thoracic ventrites largely covered with hydrofuge pubescence, except oblong glabrous median portion of metaventrite. Hind wings not examined.

Procoxae almost globular, without spines. Mesocoxae slightly oblique. Metacoxae approximately parallel-sided, slightly oblique, pubescent. Trochanters very well developed, partially pubescent at base. Metatrochanter distally slightly detached from metafemur. Femora significantly flattened, with dorsally and ventrally sharply defined tibial grooves, glabrous, with sparsely distributed fine setae. Tibiae long and straight, with rows of strong to very strong spines and two long strong apical spurs. Meso- and metatibiae flattened. All tarsi with five tarsomeres, with short, strong spines on ventral face. Tarsomere 5 distinctly longer than each preceding tarsomere. Meso- and metatarsi without swimming hairs on dorsal face. Claw-segment with bisetose empodium and with two well developed claws with basal tooth.

Five visible abdominal ventrites (sternites III – VII), completely covered with dense hydrofuge pubescence, not carinate, ventrite 5 apically rounded, without excision. Laterosternite 3 not examined.

DIFFERENTIAL DIAGNOSIS: *Ophthalmocyclus* gen.n. can be distinguished from the other genera of the *Oocyclus* group by the following characters: Eyes extremely large, protruding, conspicuously emarginate posteriorly, with very large dorsal portion and very small ventral portion; dorsal face of pronotum and elytra with shallow depressions and elevations; lateral pronotal and elytral margins with long setae; mesoventrite with conspicuously pointed median protuberance and with some strong long setae; elytra with subseriate rows of setiferous punctures.

DISTRIBUTION: South India (Tamil Nadu).

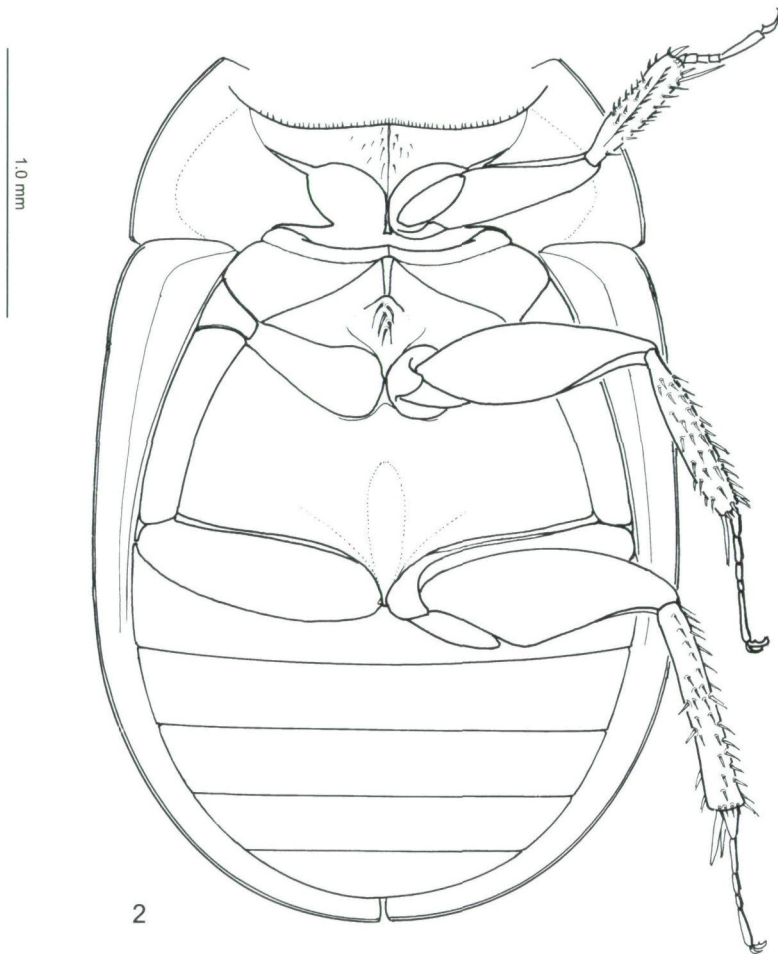
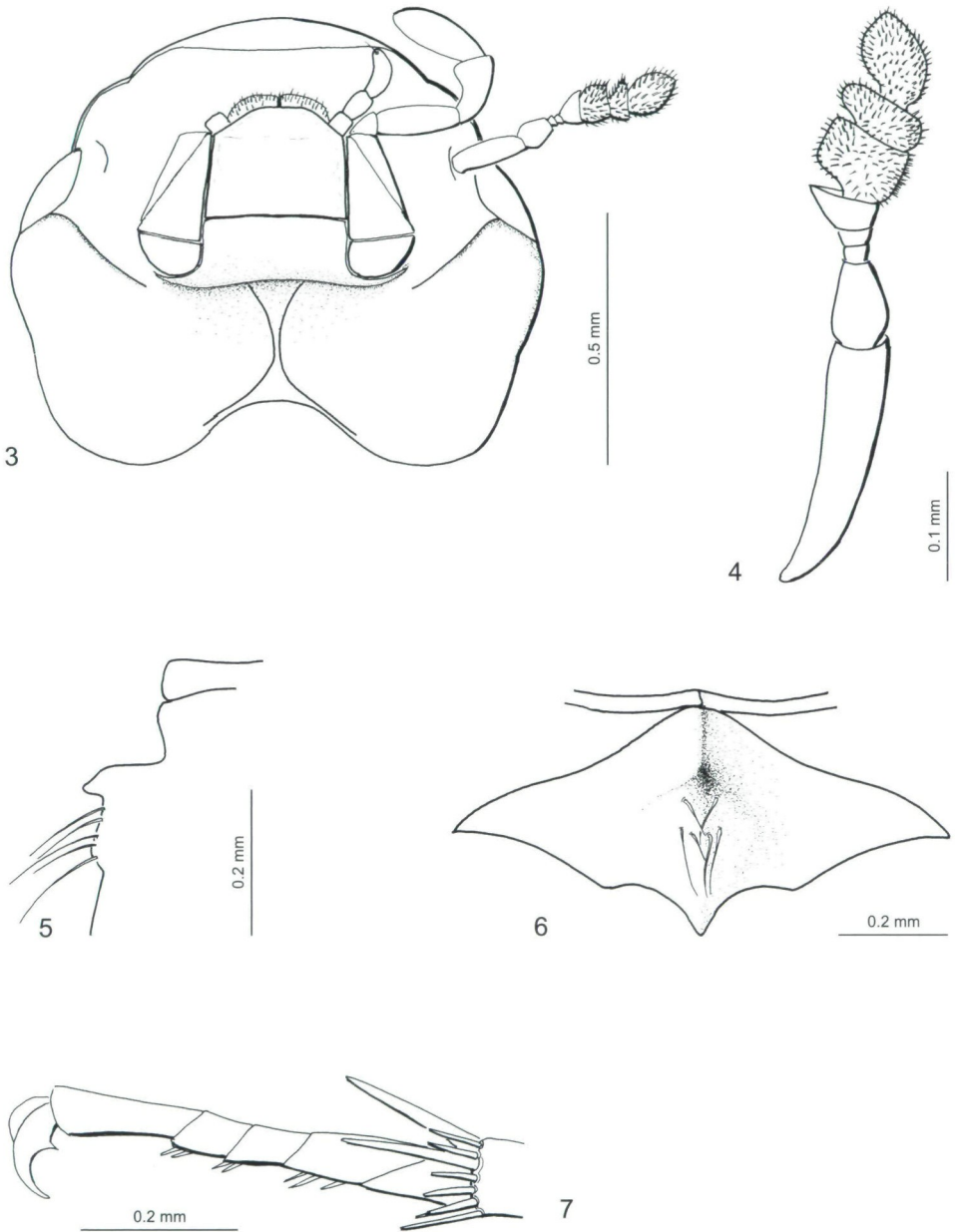


Fig. 2: *Ophthalmocyclus mazzoldii* sp.n., habitus (without head), ventral view.

DISCUSSION: The genera *Tritonus*, *Scoliopsis*, *Beralitra*, and *Oocyclus* were assumed as closely related by d'ORCHYMONT (1919, 1929) and by HANSEN (1991), who introduced the term *Oocyclus* group. The latter views this group as distinct monophyletic taxon within Laccobiini, sharing the following characters: Eyes reniform and oblique in dorsal view; clypeus convex and anteriorly deflexed, appearing somewhat inflated; pronotum and elytra with systematic punctures; accessory ridge below posterior pronotal margin wide and continued laterally to posterior pronotal corners; mesoventrite with some dorsally directed rigid spines; scutellary stria absent; hydrofuge pubescence on ventral face of metafemora absent; middle and posterior tibiae flattened; carina on abdominal ventrite 1 absent; ventrite 5 not excised apically.



Figs. 3 – 6: *Ophthalmocyclus mazzoldii* sp.n.: 3) head, ventral view, 4) antenna, 5) mesoventrite, median protuberance, lateral view, 6) mesoventrite, ventral view, 7) metatarsus, lateral view.

Ophthalmocyclus shows all these characters, apart from having strong setae instead of rigid spines on mesoventrite. The following characters are assumed as autapomorphies: Clypeus and frons with shallow depressions; eyes distinctly protruding; dorsal portion of eyes more than three times as large as ventral portion; gula carinate; dorsal surface of pronotum and elytra with depressions and elevations; lateral margins of pronotum setiferous; prosternal process slightly widened apically; mesoventrite not reaching anterior thoracic margin; mesoventrite with strong setae instead of spines mesally.

The very large eyes, separated by the width of one eye, is a character state shared with *Scoliopsis*, but according to the different shape and position of eyes not assumed as a synapomorphy. In all genera of the *Oocyclus* group but *Ophthalmocyclus* the ventral portion of the eyes is much better developed, in *Scoliopsis* the visual field of the lateral and dorsal portion of the eye is more anteriorly directed, the tempora forming a blunt ridge behind eyes. The presence of subseriate elytral punctures in *Ophthalmocyclus*, *Beralitra*, and *Tritonus* are presumably symplesiomorphies. In *Scoliopsis*, *Oocyclus* and *Tritonus* the pronotal and elytral structure is smooth without uneven patches, some larger elytral depressions in *Beralitra*, however, are – differently from *Ophthalmocyclus* – caused by very coarse, partially confluent, subseriate punctures. *Tritonus* has subseriate rows of coarse geminate punctures, *Scoliopsis* and *Oocyclus* have very fine sparse irregular elytral punctation. In *Tritonus*, *Oocyclus*, *Beralitra* and *Scoliopsis* the mesoventrite reaches the anterior mesothoracic margin; in *Tritonus* the median area of the mesoventrite is slightly tectiform and finely carinate in total length; in *Oocyclus*, *Beralitra* and *Scoliopsis* the shape of the median protuberance is quite different from that of *Ophthalmocyclus*.

ETYMOLOGY: "Ophthalmo-" refers to the significantly large protruding eyes, "-cyclus" refers to *Oocyclus*-group.

Ophthalmocyclus mazzoldii sp.n.

TYPE LOCALITY: A very small stream cut by the road Palni – Kodaikanal, near Perumalmalai, in a place at about 1000 m a.s.l., Tamil Nadu, South India (P. Mazzoldi, personal communication).

Type material: **Holotype** ♀ (NMW): "India, Tamil Nadu, Palni-Kodaikanal nr. Perumalmalai, 30.12. 1994 P. Mazzoldi".

DESCRIPTION: Total length 3.8 mm, total width 2.2 mm, length of elytra 2.5 mm, elytral index: 1.14.

Dorsal face of labrum, clypeus, and frons shining black. Clypeus and frons with conspicuous deep coarse punctures of slightly varying diameter, without setae, shining, without visible microstructure between punctation. Clypeus and frons markedly sculptured by two paramedian grooves at base of clypeus, and with a shallow depression between the very large, dorsolaterally protruding eyes. Antennae with very short antennomeres 3 and 4. Antennae, maxillary palpi, and labial palpi light brown. Mentum black, shining, with few setiferous punctures in center, weakly micro-sculptured along lateral and anterior margins. Anterior portion of mentum slightly deflected dorsad.

Pronotum about three times as wide as long (median length in dorsal view), lateral margins evenly curved, greatest width in basal 0.2, shortest width at anterior corners, which are markedly projecting anteriorly. Anterior margin bisinuate with weak median projection, posterior margin very weakly curved, with well-defined, slightly rounded corners. Dorsal surface of pronotum similar to that of elytra unevenly structured, humpbacked with shallow conspicuous depressions and elevations. Pronotum and elytra shining black with slight greenish metallic lustre, brightened up and becoming brownish laterally. Irregular punctation on dorsal face of pronotum and elytra

slightly less coarse than on frons, almost evenly scattered, coarser and with denser distribution on lateral margins, distinctly finer and less dense particularly towards middle portion of pronotal and elytral disc. Surface between punctation shining, without visible microstructure. Lateral margins of pronotum and elytra with long fine brown setae. Median portion of mesoventrite abruptly raised posterior to anterior margin, forming a bumpy protuberance with a distinct tooth at its cranial margin and six long, posteriorly directed strong setae posterior to the tooth. Scutellar shield forming an equilateral triangle, posterior angle somewhat rounded. Elytra with five more or less regular rows of fine setiferous punctures among the irregularly scattered punctation; setae arranged in almost equidistant short linear groups, three to five in each row, the groups being widely separated from each other. Punctures within one group very closely aggregated, their numbers strongly varying between one and 20, decreasing posteriorly and towards elytral suture and lateral margins, sutural row consisting of equidistant singular punctures and very short linear groups of few punctures. Light brown setae originating from these punctures long and rather soft, each group thus forming a conspicuous tuft of hairs, contrasting to black elytra, sticking out obliquely, directed caudad. Lateral margins of elytra fringed with fine light brown setae.

Trochantera and femora light brown, with significant infuscations towards margins and basal portions. Protrochantera completely, meso- and metatrochantera partially, particularly basally, covered with hydrofuge pubescence. Tibiae and tarsi light brown. Tibial spines on lateral rows very strong, distal spurs very long, lateral distal spur on protibia reaching terminal margin of protarsomere 4. Protarsomeres 1 – 4 very short, meso- and metatarsomeres 1 – 4 of moderate length. Claws of all tarsi evenly curved, with distinct basal tooth.

ECOLOGY: The holotype was found in a film of water, running on the vertical surface of a small artificial wall made of concrete bricks. The specimen was collected on the slime under the moss covering the wall (P. Mazzoldi, personal communication).

ETYMOLOGY: The name refers to the collector Paolo Mazzoldi.

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Zusammenfassung

Ophthalmocyclus gen.n., eine neue Hydrophilidengattung und eine neue Art aus Südindien, *O. mazzoldii*, werden beschrieben und der "*Oocyclus* Gruppe" innerhalb der Unterfamilie Hydrophilinae zugeordnet.

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