

COMPLEMENTARY NOTES ON THE ORIENTAL HELOCHARES (HYDROBATICUS)  
(PALPICORNIA HYDROPHILIDAE).BULLETIN DU MUSEE ROYAL D'HISTOIRE NATURELLE DE BELGIQUE,  
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(Article by D'Orchymont, A.).

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Some of these Hydrobaticus which are difficult to identify, were analysed in notes published in 1940 (1); basing my examination on the phallic morphology I restored in it Hydrobius neglectus Hope and subdivided Helochares crenatus Regimbart. The aedeagus of Helochares anchoralis Sharp, an Oriental Hydrobaticus, well known since its interpretation by Regimbart (2), was shown for the first time in number 20 of this volume. The other names introduced for the same fauna are examined in the following notes and explained in function of the male genital structure. They were not yet known, though they are indispensable for an accurate delimitation of the mentioned individuals. Finally, this revision brought out eight unknown forms, which will be described now.

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(1) Ann. Soc. Ent. Bull. Belg., LXXX, 1940, p. 166-170,  
figures 5 - 8.

(2) After Indochinese samples (Fr. Ent. Soc. Ann., LXXII, 1903, p. 54) and Indian ones (Ibid., p. 435). I have not yet seen Ceylonese samples, the homeland of the type but the identity is certain.

HELOCHARES (HYDROBATICUS) CREMATULOIDES n. sp.

Species close to *H. Crenatus* in which it was included: but it differed from it by the slightly smaller size, the tighter puncture arrangements, the stronger elytral punctured striae more impressed; particularly at the back, with slightly more convex interstriae, almost smooth, with a still finer puncture arrangement than in *H. Crenatus*. The aedeagus, though neutral in form, without any outer appendages when at rest (Figure 1) is very particular when erected with rows of spines out and spread (Fig. 2), this characteristic definitely separated it from the other species.

*Helochares (Hydrobaticus) crenatuloides* n. sp. Aedeagus dorsal view (figure 1). Tip of aedeagus - dorso-lateral view (with a raised-up left side), with inner spines out and spread (figure 2). x 50.

Type. India, Bengal, Tetara, R.P. Cardon leg., ♂, 5 x 2.5 mm. (Brussels museum). Paratypes, with the type, 1 ♂, 1 ♀; Konbir and Mandar, R.P. Cardon, VII - 1891, 1 ♂, 1 ♀ respectively. Northern India; Dehra Dun, Karawapani, 5 - XII - 1910, 1 ♂; Siwaliks, 30-X-1921, S.N. Chatterjee, 1 ♀ and Siwaliks, Mahan

Rau, 19-XI-1922, Cameron, 1 ♀. Rewa State, Nerbud a Survey, Calcutta Museum, good series of both sexes, H.S. Pruthi; St. 10, pools in the rocks near Kapilldhar falls, 3,300 feet, I-1927; st.35, Tar (Tributary) at 5 miles from Sara , 2,700 feet, II - 1927; st. 39, at 3 miles from Koilari, 2650 feet, II-1927; st.42, near Khetgoan, 2,650 feet, II - 1927, st. 43 at 6 miles from Koilari:2650 feet, II-1927, st.44 Tharpatra (tributary), at 4 miles from Khetgoan, 2650 feet II-1927.

Helochares (Hydrobaticus) lentus sharp.

*Helochares lentus sharp*, 1890 (Ceylon:Dikoya).

This species was discerned from its neighboring one, *H. densus* Sharp, by the elytral series composed of bigger, deeper punctures and by the fine punctuation of interstriae, less dense, less abundant, even reduced at the rear. Every big puncture of the series does not alternate with a much finer one, as Regimbart, having received samples from Ceylon and elsewhere which appeared to him intermediary in their sculpture, thought that there was only one species extremely variable in form convexity, sculpture and "Size" (3). This is, however, an error as it had been for *H. melanophthalmus* Mulsant and *nigrifrons* Brancsik, quoted and gathered by the same author. Re-examination of the typical specimens and of their genitals proved it. The aedeagus is very different. In *lentus*, the organ has, on each side, beyond the middle of the para-meres, a small wing; there is no indication

of it in *densus* or in other *Hydrobaticus*. There are other differences (compare figure 3 and 10).

In the  $\sigma^7$  paratype *lentus* from Dikoya, these small wings are thin and quite short, invisible in dorsal view; the terminal dorsal parts of the sheath formed by the welded parameters became completely sclerotic. On the other hand, amongst the many dissected  $\sigma^7 \sigma^7$  from Continental India, Indo China, the Malayan peninsula, Sumatra, Java, Lombok and Borneo, the winglets are variable but longer, conspicuous in dorsal view; the dorsal parts of the sheath are more or less membranous on their inner sides which give them more ill-shaped appearance when dry, so as to expose them in the center, in the organ at rest and level with the winglets insertions, the tip of a spiniform appendage which is the extremity of a plane piece, membranous, triangular, broad near the base of the median lobe above which it stands and more or less lengthily sharp at the top. In the erected organ, or at least partially erected (Figure 4), it seems to stand level with the big exsertiled spines and to help upholding the more or less membranous outer parts of the parameres. New samples from Ceylon (4) would be necessary to establish with finality the differences between the aedeagus of the typical Ceylonese form and that of the other more common form.

These are not all the differences noticed in this model of aedeagus with winglets. Most of the samples from the above mentioned countries, from Ceylon and elsewhere could belong to

the same specific entity but with quite varying aedeagus; on the other hand, in the Philippines Islands (Luzon) there are at least

*Helochares (Hydrobaticus) lentus* Sharp (Samples from Tonkin)  
Aedeagus, dorsal view (Figure 3). Aedeagus erected at least partially, tip : latero-dorsal view (dorsal side on the right, ventral side, on the left). Partly mis-shaped due to dryness (Figure 4) x 50.

three forms which might be considered distinct species at first sight due to highly differentiated ♂ genitalia; moreover, in 1926 (5), I took for small crenatus some of the specimens having slightly finer and more sparse puncture arrangement on the elytral interstriae than in the typical form. As females cannot be discerned ♀ ♀ these forms are not isolated amongst one another geographically and as I saw no sample with erected aedeagus which could be compared with figure 4, they should, therefore, be considered phallic subspecies of *H. lentus* till

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3) L.C. LXXI, 1902, p.473

4) *H. lentus*, coming from Ceylon, seems rare in collections. I always found *densus* there, so that I only know *lentus* from this island owing to the paratypes of Sharp.

5) Philippine Journal of Science, 30 n° 3, 1926, p.379.

further informations. The species remains so far characterized by the presence of two lateral winglets at the aedeagus.

Dorsal view of the tip of the aedeagus in *Helochares* (*Hydrobaticus*) *lentus lepidus* n. subsp. (Figure 5), *lentus leptinus* n. subsp. (Figure 6) and *lentus letus* n. subsp. (Figure 7). x 50.

Subsp. *lepidus* nov. (*H. [H.] crenatus* A. D. Orchymont, 1926, ex p. [nec Regimbart, 1903]). The winglets (Figure 5) are free, slender, bowel and very long, reaching the tip of the organ. Luzon; Montalban (6), 4 ♂♂ (whose type, 4.58 x 2.41 mm.), 3 ♀♀; Mount Maquiling (7), 1 ♂; Paeta (8), 1 ♂, 1 ♀.

Subsp. *leptinus* nov. (*H. [H.] crenatus* A. D. Orchymont, 1926, ex.p. [nec Regimbart, 1903]). The winglets (Figure 6) are also free, but very short and broad, distant, auricular - Shaped. Luzon; Balabalan (9), 2 ♂♂ (whose type, 4.5 x 2.33 mm), 3 ♀♀.

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- 6) 25 - 30 km. in North East of Manila on the Mariquina River.
  - 7) Old Volcano, 1.091 m., in South and on Side of Bay-Lake, a big Soft water lake in the South-East of Manila.
  - 8) At the Eastern end and on the same lake side.
  - 9) I could not find this locality on the maps I had.

In North India (Bhim Tal, 4,450 feet, Kumaon, W.Himalayas), a similar, though not identical form of aedeagus, can be found, 2-10-V-1911, 2 ♂♂, 1 ♀ in the Malayan peninsula; Marile (W.Coast, dirty pond near sea shore), 4-11-1927, 1 ♂ taken with another ♂ having the normal shape (see above). In them, one further notices, on dorsal view, the spiniform median appendage of *lentus* which differs from the Ceylonese paratype whereas in the three Philippine forms (*lepidus*, *leptinus* and *letus*) I could observe nothing.

Subsp. *letus* nov. The winglets seem soldered to the organ and the distal dorsal pieces of the sheath are narrower exposing the inner spines (Figure 7). Phillipine islands (no more), *lentus* Knisch det. and collect., ♂ (type), 4.67 x 2.25 mm. another ♂ from Los Banos - Bay (10).

HELOCHARES (HYDROBATICUS) STRIATUS:

Sharp (nec [Boheman, 1851]).

*Helochares striatus* Sharp, 1873 (Nagasaki) (11).

The unique type of *H. striatus* Sharp which I saw (British Museum) is a ♀, measuring 4.6 x 2.5 mm. (measured with micrometer) It is close to one of the forms *lentus* from Philippines, discussed in the previous chapter. May it be one of its forms?

10) The Bay is located at 5-6 km. in the East of Los Banos, in the South and on the Bay lake sides, in the North-East of Mount Maquiling.

11) Trans. Ent. Soc. London., 1873, p.60.

The name will be replaced - considering the difficulties in characterizing these difficult coleoptera - only when a ♂ originating from South Japan is received and dissected. In the meantime this name is not considered to exist or should be retained only to remind of the subgenus *Hydrobaticus* as being represented in this country.

*HELOCHARUS (HYDROBATICUS) SAUTERI* n. sp.

*Helochares (Graphelochares) lentus* A.D. Orchymont, 1913 (12) (nec. Sharp).

New species which I took for *lentus* according to samples from Formosa (Kosempo) in the days I used to accept Regimbart's opinions about the high variability of this species. It is intermediary between *lentus* and *densus* for the top sculpture. The elytral series are not started, but composed of superficial punctures, bigger than those of the interstriae, which are alternately separated lengthwise by a much finer puncture. The interstriae are quite finely and not very densely dotted. The aedeagus (Figure 8 and 9) which is different from the organ of the two mentioned species, definitely set apart *H. Sauteri*; it bears on the ventral a triangular terminal notch, dorsally a median humped projections; both are very characteristic.

Besides the typical specimens of Kosempo (4.5 x 2.3 mm), I saw paratypes - samples from Tchou - San (Chusan, Coast of the Chinese province of Tche-Kiang); Heud Museum, 17-VIII-1931, O. Piel leg., 1 ♂ very immature, but with a recognizable aedeagus;

lentus Knisch det. and collect, 1 ♀ and Tamahou island (Ta Maon),  
1 ♂

*Helochares (Hydrobaticus) Sauteri* n.sp. Aedeagus, ventral view (Figure 8). The same, dorsal view, with a slightly raised up left side (Figure 9). x 50.

HELOCHARES (HYDROBATICUS) DENSUS SHARP:

*Helochares densus* Sharp, 1890 (Ceylon).

Whatever Regimbart thought *H. densus* differs from *H. lentus* by elytral finer, not-striated series and from the denser and more abundant serial punctures. The bigger punctures as fine as those of the interstriae, alternate more or less conspicuously with a much finer puncture. Doubtful specimens are easily recognizable due to the aedeagus, which has no lateral winglets and which corresponds to the form represented in figure 10 and 11.

The ♂♂ reconditioned because of the aedeagus are from Ceylon (Kandy paratype, Nalanda), from Continental India (Madras, Negapatam in the South, Kumaon in the North, Bengal [Konbir Mandar, Tetara], Central Provinces [Nerbudda]), from Tonkin (The lake),

from Andaman and Nicobar islands. No sample subjected to this examination comes from the East Indies. Only *lentus* is found there (see above). This species in China is unknown to me.

HELOCHARES (HYDROBATICUS) DENTALUS (13) n. sp.

Very similar to *H. densus*; same sculpture; fine elytral series composed of punctures bigger than those of interstriae, alternating with a finer puncture, as fine as those of the interstriae which are densely punctured, the short juxtascutellar series is also similar as it includes slightly bigger punctures than those of the neighboring series. But the aedeagus (Figure 12) is different, vaguely reminding of the organ of *Sauteri* due to the terminal ventral notch which is also triangular; but in *Sauteri* the elytral interstriae are more finely and sparsely dotted.

*Helochares (Hydrobaticus) densus* Sharp. Aedeagus, dorso-lateral view, with a slightly raised-up left side (Fig. 10)-ventral extremity (Figure 11). *H. (H.) dentalus* n. sp. *dentalus* n. sp. Ventral extremity of the aedeagus (Fig. 12). *H. (H.) denudatus* n. sp. Ventral extremity of the aedeagus (Figure 13), x 50.

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(13) Meaningless name.

In Borneo, this species is a variant of *densus*. The latter is missing in the East Indies.

Type. North Borneo: Bettotan close to Sandakan, 6-VIII-1927, ♂, 4.2 x 2.2 mm. Paratype. A ♂ of same origin in Selangor museum, with a slightly bigger size; 4.9 x 2.3 mm.

HELOCHARES (HYDROBATICUS) DENUDATUS n. sp.

This new species is striking by the almost complete absence of elytral serial punctures even on the sides and at the backs; this fact could confuse it for a *Helochares* s. str. In fact, the lines of serial punctures, including those of the short juxta-cutellar ones are scattered; but the punctures have the same size as those of the interstriae; they are only closer lengthwise. The big systematic punctures of the 5th interstriae are markedly conspicuous. Due to the high reduction of the serial punctures, this new form reminds of *H. subtilis* from the Kalahari desert (14), but here the series re-appear more distinctly on the sides and at the backs. Moreover, the size is much smaller in *denudatus* and the aedeagus (Figure 13) is absolutely different, very similar to that of *dentalus*. The affinities with this species and with *H. densus* seem obvious to me.

Type. Eastern coast of Sumatra: Bedagei (Kuala Bedagei), ± 600 feet, I.Z. Kannegieter leg., 2<sup>e</sup> Semester 1889, ♂, 4.17 x 2.1 mm. Paratypes. Same origin as the type, 2 ♀♀; Malayan Peninsula;

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(14) *Annals Transv. Mus.*, XVII, 2, 1936, P.112 and pl.I, fig.6.

Perak (opposite Bedagei, on the other side of the Malacca Straits),  
Doherty leg., 1 ♀.

This species is specially suitable to establish *Hydrobaticus*  
a sub. genus of *Helochares*.

HELOCHARES (HYDROBATICUS) MINOR A D'ORCHY MONT. 1925.

The type, from Cha-Pa (15), (remeasured with micrometer; 3.1 x  
1.7 mm) is a ♀. A sample of Hoa-Binh (also Tonkin), R. P. De.  
Cosman leg., with a slightly bigger size (3.75 x 1.9 mm), which  
arrived in the meantime, belongs to the same sex. The paratype  
from Cho Ganh (in the delta, in the south of Ninh Binh, also  
Tonkin, rice plantations, in the evening, in the light, L. Duport  
leg., E. Fleutiaux coll., remeasured size; 3.6 x 1.9 mm) is a ♂.  
Its aedeagus, bearing two tiny winglets was reproduced on fig. 16.  
With the latter, the species is close to *H. (H) lentus*. Finally,  
a ♂ from Purnea district, Bihar, in India, 8-X-1915, would also  
be minor according to its aedeagus which is extremely immature,  
transparent and misshaped, though one of the winglets is conspi-  
cuous in the preparation.

HELOCHARES (HYDROBATICUS) MINUSCULUS n. sp.

A ♂ from Sumatra, in the region of Toba lake (Heideteich)  
near Huta Gindjang, 1.660 m., FT 5, 3-IV-1929, lentus A. D. Orchy -

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(15) Or Chapa, or Chada, a hill station, 1,800 m, at 26 km South  
West of Lao-Kay, beyond the right side of the Song-Hai (Red  
River), in Tonkin.

mont det. (16), a ♀ from Palembang and a ♂ from Burma, Kawkaeik, Amherst district, 19-20-XI-1911, are very close to minor, but a distinct species according to aedeagus with no winglet in the ♂ (Figure 14, sample from Sumatra, the type, 3.5 x 1.8 mm). The elytra series are not striated neither at the base nor at the back; they are composed of less big and less deep punctures and the interstriae are less narrow at their ends, more densely punctuated and are not convex. In the Sumatra samples, and confusedly in the Burmese sample as well as the big punctures of elytral series alternate with much finer puncture.

*Helochares (Hydrobaticus) minusculus* n. sp. (sample from Somatra) (Figure 14) H. (H.) Salvazai A. D'Orchymont (Figure 15). H. (H) minor A. D'Orchymont (Figure 16)  
Aedeagus dorsal view. x 50.

HELOCHARES (HYDROBATICUS) SALVAZAI.

A. D' Orchymont, 1919 (17)

A species described from Cambodge. It remained isolated from other *Hydrobaticus* due to nine distinct serial punctures on

16) *Archiv. f. Hydrobiology*, 1932, Suppl. Bd. IX, Band II, p. 688. The other specimens mentioned there under *lentus* belong to this species.

17) *Ann. Soc. Ent. Belg.*, 59, 1919, p. 76.

the elytra instead of the ten usual ones. The type is ♀; at least three of the paratypes are ♂♂. The aedeagus, the figure of which has not yet been drawn, is shown in figure 15. Though it bears no complicated structure, it does not look like the organ of other species, except for the one of the North-American forms.

The sub-genus *Hydrobaticus* is not as polymorphological in Eastern region as it is in Africa. The following table sums up the distribution of the known species of this region after the described revision. The most commonly spread is certainly *anchoralis* Sharp (8 countries). A race (major) exists in New Guinea (*H. archoralis expansus* Knisch). Then comes *lentus* with 7 countries though the species is still complex *H. neglectus* and *densus* come only in third rank with 4 countries. The countries richest in forms are continental India (7) and Indo-China (9). Then come Sumatra with 6, Philippines with 4, Ceylon and Java with 3 forms. China and Tchousan islands (Chusan), which also belong to this country, Lombok and Borneo have only 2 forms, but one out of these two (*neglectus*) is common to the first two countries. The other regions would possess only one species, *anchoralis* and *neglectus*, the former not having really (striated) elytra, the latter having striated elytra; my interpretation (18) of *Hydrobius neglectus* from Canton becomes, therefore, more likely series after this inventory.

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18) L. s., 80, 1940, pp. 166 - 167.