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REVIEW OF AFRICAN AMPHIOPS (COLEOPTERA
HYDROPHILIDAE). (Revision des AMPHIOPS
Africains (Coleoptera hydrophilidae)).

Translated from French

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REVIEW OF AFRICAN AMPHIOPS
(COLEOPTERA HYDROPHILIDAE)

by A. d'Orchymont (Brussels)

The study of descriptions of the Amphiops of Africa and Madagascar brought out strange confusions, certain names covering up to three different species. This is not surprising since it is only by the comparative morphology of the aedeagus that one can reliably separate the forms and not by merely the external sculpture, the only characteristic considered by the old authors. We will try to rectify this. The following table will help us distinguish the species which are entitled to be known.

TABLE OF AFRICAN SPECIES

1. Well-marked lateral sides of the pronotum, anterior angles, although very rounded, being separated by an almost straight or slightly curved edge. Short trapeze-shaped hood, its sides in front of the eyes having a less short part, straighter, less distinctly rounded around the eyes, thus the canthus narrower. Not very delicate punctuation of the top part. 2.
- 1'. Posterior side of the pronotum joined to the anterior

side by a very regular curve so that there is no longer a question of posterior angles, the pronotum completely overlapping them and with unobtrusive lateral sides, these being replaced by a portion of circumference quite anterior which traces the outline of what is reputed to be the anterior angle of the pronotum. Hood, more distinctly rounded on the sides and around the eyes, the canthus more regularly rounded and larger than these latter. Extremely delicate basal punctuation on the upper part, even on the sides, sometimes mixed with less fine points on the disc of the elytra, with or without rudiments of oblique lines of larger, or very much larger, points. Continental Africa and Madagascar.

A. globus ERICHSON.

2. Sculpture of the head and pronotum comprising of delicate basal shagreen and of another less delicate one occupying the bottom of the points. The latter are close together and quite well imprinted on the head; on the pronotum they become larger, further apart in the middle and become so superficial that they appear to be no more than small expanses barely broken by more pronounced shagreen. On the scutellum the shagreened points are smaller, a bit deeper and further apart than in the middle of the pronotum. The aedeagus (fig. 1) with a particularly long basal lobe, dorsally seen more than twice the length of the median lobe. Belgian Congo:Uele.

A. Wittei n. sp.

2'. Head, pronotum and scutellum not shagreened. Aedeagus with basal lobe, seen dorsally, only slightly longer than the median lobe or even distinctly shorter (in phallicus). 3.

3. Punctuation of the elytra, on the sides, denser, generally more delicate, more irregular in pattern. Sclerified dorsal part of the median lobe of the aedeagus seen dorsally becoming larger before the extremity (fig. 2, 3). 4.

3'. Punctuation of the elytra, on the sides, less dense but stronger, more regular, so that the points appear closer to each other and deeper. Sclerified dorsal part of the median lobe of the aedeagus seen dorsally steadily becoming thinner from the base to the extremity (fig. 4). 5.

4. Ventral part of the median lobe of the aedeagus, dorsally seen (fig. 2), not extending beyond, or only slightly extending beyond, the sclerified dorsal part, in the form of an almost sessile cushion. African Continent.

A. senegalensis (CASTELNAU).

4'. Ventral part of the median lobe of the aedeagus, dorsally seen (fig. 3), considerably extending beyond the sclerified dorsal part, in the form of a cushion

with a more or less membranous peduncle. Parameres, proportionate to their length, more swollen at the base, then slowly becoming more slender. Madagascar.

A. confusus REGIMBART.

5. Parameres dorsally not having strong inner tooth before the extremity (fig. 4), dorsally covered by deep streaks, parallel but running obliquely from the front backwards towards their internal edge which they reach.

A. lasioides REGIMBART.

- 5'. Parameres also streaked, but dorsally provided with a strong inner tooth beyond which the parameres still extend and curve inwards (fig. 5) A. phallicus A. D'ORCHYMONT.

REMARKS AND DIAGNOSES

AMPHIOPS WITTEI n. sp.

This remarkable species at first glance resembles senegalensis (CASTELNAU), which has the same coloring and size, although the sculpture of the sides and back of the elytra is slightly stronger and denser. But what distinguishes it immediately, as with all other species of the genus, is firstly the presence of a particular shagreen on the head, the pronotum and the scutellum; secondly, the shape of the aedeagus. It differs from globus ERICHSON by the not very delicate punctuation on the upper part, by the hood, the sides of which

are less curved, less fully rounded around the eyes, the canthus being consequently narrower, and finally by the well-marked lateral sides of the pronotum, almost straight or barely arched, separating the very rounded anterior and posterior angles.

Head and pronotum basally delicately shagreened, the bottom of the points with which they are adorned even more strongly "alutaced". These points are near each other and quite well imprinted on the head; on the pronotum they become larger, slightly further apart in the middle and become so superficial that they appear as small expanses, round and barely sunken, of more pronounced shagreen. On the scutellum the shagreened points are smaller, a bit deeper and further apart than in the middle of the pronotum.

Elytra not shagreened; their sculpture consists of unequal points all over, but much finer and further apart near the scutellum and along the suture; behind and on the sides these points become noticeably larger and there they are closer to each other. The larger and very spaced out points, setiferous, in regular lines, are poorly developed, and hardly stand out against the basal sculpture.

Tri-lobed aedeagus, as always, but nevertheless quite



Fig. 1. - Amphiops Wittei n. sp.

Aedeagus in dorsal view. x 35.

different from the other African species; it is narrow and very elongated; the basal lobe, pointed at the base, then becomes gradually larger up to the insertion of the parameres, with the sclerotized parts, ventral and basal, delicately and longitudinally streaked; the median lobe is less than half the length of the basal lobe, almost twice as long as its width, with lanceolate shape, large and rounded at the base, gradually retracting towards the vertex which tapers to a blunt point; the median lobe is only visible dorsally, ventrally it is almost hidden by the parameres which meet again more than dorsally; the parameres, less than twice as long as the basal lobe, extend well beyond the median lobe, they bulge out at the base but then sharply become thinner and very narrow, up to the extremity, ventrally slightly arched before this latter;

the bulging base of the paremeres is smooth and bulging ventrally, deflated and longitudinally streaked dorsally.

Type. Belgian Congo (Uele): Buta, 450 m., 11-13-V-1935 (G. F. DE WITTE), ♂, 5 x 3.2 mm. A small paratype series, consisting of both sexes, is labelled as a type. These subjects were taken together with the globus (10 subjects) and particularly with the senegalensis (154 specimens) .. If M. DE WITTE, to whom I have the pleasure to dedicate the new species, had not made massive collections of Amphiops at Buta, it might very well have escaped his notice.

AMPHIOPS SENEGALENSIS (CASTELNAU, 1840).

Coelostoma senegalense CASTELNAU, 1840 (Senegal).

Amphiops lucidus ERICHSON, 1843, ex p. (Angola, nec Madagascar).

Cyprimorphus compressus FAIRMAIRE, 1873 (Morocco).

Amphiops globus FAIRMAIRE, 1884 (nec Erichson, 1843).

Amphiops Abeillei GUILLEBEAU, 1896 (Egypt).

Amphiops lasioides REGIMBART, 1903 ex p. (Cape Lopez).

Although the type Coelostoma senegalense was inaccessible to me (does it still exist?), I have no doubt that the species has been described by ERICHSON under the name of lucidus at the time (1843) when he created the Amphiops genus; moreover, lucidus is from Senegal. On the other hand, in spite of the assertions of ERICHSON, BEDEL, FAIRMAIRE and REGIMBART, I do

not believe that this species exists in Madagascar. All the specimens received from this large island, classified as lucidus (in the Berlin and Paris Museums, among others) are in fact confusus REGIMBART. This was proved by the examination of the aedeagus (fig. 2 and 3), all the ♂♂ which came into my hands having been dissected. The lucidus type is from Benguela (Angola) according to what Prof. Kuntzen of Berlin was kind enough to write to me. But ERICHSON also reported the species from Madagascar, as found by Goudot. Prof. Kuntzen described two subjects to me - fortunately both ♂♂ - on which this assertion was based: one bears a label "Madagascar, goudot", it belongs to confusus REGIMBART (1). With regard to the second, it is a true senegalensis (lucidus), but since it bears no documentation there is nothing to prove that it really originates from Madagascar. It is probably a question of an error of provenance already committed in ERICHSON's time, which Prof. Kuntzel thinks probable.

The species seems to be widespread across all Africa: Senegal, Angola, Belgian and French Congo, Cameroun, Calabar, Niger, Cape Verde, Moyen-Chari (Fort Archambault,) Uganda, Transvaal, Mozambique, Zambezi, Cape Colony (Dunbrody) (2),

(1) Another confusus ♂ from Madagascar, also collected by Goudot, is part of the Bedel collection in Paris under lucidus. See the following paragraph.

(2) 47 km North of Port-Elizabeth.



Fig. 2. - Amphiops senegalensis (CASTELNAU)
Aedeagus in dorsal view. x 35.

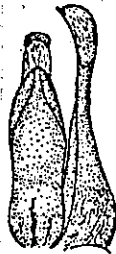


Fig. 3. - Amphiops confusus REGIMBART.

Aedeagus: median lobe and one paramere, in dorsal view x 35. The other paramere symmetrical.

Sudan, Abyssinia, Egypt, Tripolitania, Morocco, etc., etc.

I shall not waste time detailing the exact sources of the

specimens which passed through my hands. I shall confine myself to transcribing the labels of some subjects of the Paris Museum having a certain historical interest: Senegal, L. Bedel coll.: "Amphiops senegalense ? (Coclostoma) Cast." 1♂ (it is probably from this specimen that Bedel's note: "Coclostoma senegalense Cast., 1840 belongs to Amphiops Er." (3), was written); Gabon: Cape Lopez, Regimbart coll.: "A. lasioides REGIMBART det., ex typis", 2 ♂♂; Egypt: Choubrah (Letourneux), "Amphiops Abeillei Guillebeau", Abeille de Perrin coll., 1 ♀; 3 ♂♂, 3 ♀♀ from Egypt and from the same collector (Letourneux).

AMPHIOPS CONFUSUS REGIMBART, 1903.

Amphiops confusus REGIMBART, 1903, p. 43 (Madagascar).

Amphiops lucidus ERICHSON, 1843, ex p. (Madagascar, nec Angola); FAIRMAIRE, 1903, ex p.

Amphiops lateritius FAIRMAIRE, 1903, p. 185 (ex p. ?) (Madagascar: Ankarahitra, PERRIER leg.).

So far this type has been peculiar to Madagascar and it replaces there A. senegalensis (lucidus). The aedeagus (fig. 3) is the only certain characteristic which permits it to be distinguished from the continental species. None of the characteristics given by REGIMBART for distinguishing it (color generally darker, smaller size, more regular punctuation, less rounded sides of the pronotum) is noticed when one compares the specimens ♂♂ determined, without

(3) Bull. Soc. Ent. Fr., 1880, p. LXXII.

possible error, by means of the aedeagus only. On the other hand, this is not surprising because the French author believed he recognized, albeit wrongly, confusus and senegalensis (lucidus) among the Madagscan material at his disposal.

Regarding lateritius, I saw only one σ from Ankarahitra (Perrier de la Bathie leg.; lateritius Fairmaire coll. and det.) which could be considered as ex typis. But in that collection there were besides 7 σ σ from "Madagascar", coming from the same collector (Perrier), and all belonging to confusus (see also under A. globus further on).

Madagascan material examined:

Paris Museum. South Centre (Alluaud 1901), confusus Regimbart, ex typis, 1 σ , 3.7 x 2.4 mm and 2 σ σ , 1 φ , of which 1 σ , 1 φ labelled "lucidus", Regimbart det.; South: Fort Dauphin, "A. confusus" Regimbart, 2 ex typis, sex undetermined; same place 1 σ ; surroundings of Marovoay, 4 σ σ , 2 φ φ ; Madagascar (Foudot leg.), Bedel coll.: "Amphiops (Cyprimorphus) lucidus Er. (compressus Frm.)", 1 σ ; South Antogil bay, Bedel coll., 1 σ ; 13 σ σ simply labelled "Madagascar" and several φ φ mostly unlocalized, often labelled "lucidus Er."

Other collections. Tananarive (lucidus Knisch coll. and det.), Ambositra.

AMPHIOPS LASIOIDES REGIMBART, 1903.

Amphiops lasioides REGIMBART, 1903, ex p. (Madagascar; Diego Suarez; nec Cairo, not Cape Lopez).

Amphiops sphaeroidalis KNISCH, 1924 (Zanzibar) (4).

A. lasioides has been described as the principal order of Madagascar (Diego Suarez), in a work devoted to the fauna of this island (5), and as the secondary order of Egypt and Congo (Cape Lopez). I have seen *extypis* of each of these countries (Paris Museum): they belong to three different species, as was sufficiently proven by the comparison of the aedeaguses (fig. 2, 4 and 5). The name should evidently be retained for the specimens from Madagascar. Those from Egypt (Choubra-Cairo, Letourneux) belong to phalicus A. D'ORCHYMONT. Regarding those from Cape Lopez, they are nothing but senegalensis CASTELNAU (lucidus ERICHSON).

A. sphaeroidalis KNISCH, 1924, a type I was able to see, one ♂ from Zanzibar, in the KNISCH collection, belongs specifically to lasioides: the aedeagus is structured according to the same design as the specimens from Madagascar (fig. 4), but nevertheless, it is slightly shorter and wider, with shorter

(4) Since the printing of this article in 1936, this synonym has been recognised by J. BALFOUR BROWNE (Ann. Mag. Nat. Hist., Ser. 11, vol. IV, 1939, p. 301), according to the non-typical specimens determined by KNISCH.

(5) Ann. Soc. Ent. Fr., LXXII, 1903, p. 44.

parameres after the bulge of the base and the median lobe, seen dorsally, proximally larger. However, the copulative organ of one o lasioides from Boma (Brussels Museum) is identical to that of the Madagascan specimens, with this lobe, seen from the same view, long and narrow. The specimens from Continental Africa seem generally slightly smaller and the punctuation of the elytra is more spaced along the stuture. This is particularly the case with the six samples marked Katanga, in which the punctuation is moreover, more spaced and more fine all over, almost indistinct along the suture. In the 2 ♂ ♂ dissected in this series, the median lobe, seen dorsally, is even larger at the base than in the sphaeroidalis type and the extremity of the parameres is more sharply directed towards the axis of the organ, the apex appearing obliquely truncated. In short, A. lasioides appears to be a not very homogeneous species. Finally, the punctuation of the hood is sometimes particularly strong and dense, at other times more scattered and less distinct.



Fig. 4. - Amphips lasioides REGIMBART, specimen from Madagascar. Aedeagus: median lobe and one paramere, in dorsal view. x 50. The other paramere symmetrical.

Materials examined:

Paris Museum. Madagascar: Diego Suarez, Ch. Alluaud 1893, Amphiops lasioides Regimbart det., ex typis, 4 specimens out of which 1 ♂ dissected, 3.9 x 2.5 mm and 2 ♀♀, 4 x 2.7 mm; Madagascar (P. Camboue) 3 ♂♂, 1 ♀; Madagascar (Perrier de la Bathie, L. Fairmaire coll.), 1 ♀.

Other collections. Transvaal: Plat River (Transvaal Museum); Zanzibar (type of sphaeroidalis Knisch det. and coll.); Belgian Congo: Boma (Brussels Museum); Katanga, Dar-es-Salaam.

AMPHIOPS PHALLICUS A. D'ORCHYMONT, 1936

Amphiops phallicus A. D'ORCHYMONT, 1936 (Kalahari) (6);
J. BALFOUR BROWNE, 1936 (Uganda, Egypt, Palestine) (7).

Amphiops lasioides REGIMBART, 1903, ex p. (Egypt) (8);
J. BALFOUR BROWNE, 1939 (Sobat River, Palestine) (9).

This species was completely unknown before 1936. Even I had taken it for lasioides, from material from the Sobat River, before knowing the true lasioides-type of Madagascar.

(6) Ann. Transv. Museum, XVII, 2, 1936, p. 114. Publication based on a paratype. The type and other paratypes are indicated here, for the first time.

(7) L. c., p. 301.

(8) Ann. Soc. Ent. Fr., LXXII, 1903, p. 44.

(9) Bull. Soc. Fouad 1^{er} d'Entomologie (1938), 1939, p. 35.

This species is unique among the forms of Africa and Madagascar, by the shape of its aedeagus, the parameres of which are dorsally dented inwards well before their extremity (fig. 5); these two extremities form a sort of pincer beyond this tooth. The size is a bit larger than that of the lasioides from Continental Africa, almost equal to that of the Madagascan specimens of this species. The punctuation on the sides of the elytra is a bit more delicate than in these latter, stronger than in the lasioides of Katanga, which I made reference to in the preceding paragraph. Without examination of the aedeagus, it is almost impossible to separate this species from lasioides.



Fig. 5. - Amphips phallicus A. D'ORCHYMONT,
specimen from Bamako.

Aedeagus: one paramere and longitudinal half of
median lobe, in dorsal view x 50.

The other paramere and other half of the median
lobe symmetrical.

Type. Niger: Ansongo (A. Weidholz), ♂, 4.2 x 2.75 mm.,
A. Knisch. coll.

Paratypes. Paris Museum: Surroundings of Cairo:
Coubrah, M. Regimbart coll., lasioides Regimbart (ex typis),
1 ♂, 3.9 x 2.5 mm, 1 ♀, 3.9 x 2.7 mm.; Cairo, Abeille de
Perrin coll., Amphiops Abeillei Guillebeau, 1 ♂, 1 ♀;
Abyssinia, Mission de Bonchamps, Ch. Michel and M. Potter,
1899, 2♂♂, 1 ♀; Galam, L. Bedel coll., 1 ♂. Transvaal Museum:
Vernay Lang Kalahari Expedition Kabulabula, Chobe River, 11-
24-VII-30, 1 ♂. British Museum: Uganda: Kampala and Entebbe
2♂♂; Anglo-Egyptian Sudan: Sobat River, Zaphiro, 1905-252
(lasioides, A. d'Orchymont det.) several specimens of both
the sexes. French Sudan: Bamako, ex Staudinger, 1 ♂.

Finally, it would have to be examined whether the small
specimen which SHARP mentions from Sudan (North of Kaka,
12th March) (10), under Abeillei, is not a phallicus.

AMPHIOPS GLOBUS ERICHSON, 1843.

Amphiops globus ERICHSON, 1843 (Angola).

Amphiops lateritius, FAIRMAIRE, 1903, ex p. ? (Madagascar).

In the Paris Museum there is a specimen of A. globus
from Madagascar, captured by Perrier de la Bathie, and is
included in the Fairmaire collection with this determination:
"Amphiops laterius (or lateritius ?) m. Mad.". It would seem

therefore, that lateritius, considered earlier as a synonym of confusus, also included specimens belonging to globus, a species which Fairmaire did not know of until later, because his globus of 1884 (11) (not that of Erichson) is synonymous with senegalensis (see earlier one).

This species is however, very easy to recognize by the characteristics enumerated in the table accompanying this article. The sculpture of the elytra, both basal and serial, is variable. REGIMBART (12) and J. BALFOUR BROWNE (13) have already stressed this point.

A. globus is known in the most diverse regions of tropical Africa, where it does not seem to be rare: Angola, French and Belgian Congo, Gabon, Cameroun, Ivory Coast, Guinea, Moyen-Chari (Fort Archambault), Zanzibar, Uganda, Mozambique, Transvaal, Natal, Cape Colony (The Cape and Dunbrody), Madagascar (Suberbieville, Morovoay, etc.), etc. Consequently, it is of little use to detail the provenances of the many species that passed through my hands.

(10) Results Swed. Zool. Exped. Égypt and White Nile, No.10, 1903, p. 9.

(11) Ann. Soc. Ent.Fr. (6), IV, Bulletin, p. XLVI.

(12) Ann. Soc. Ent. Fr., LXXII, 1903, p. 42.

(13) Ann. Mag. Nat. Hist., Ser. 11, vol. IV, 1940, p. 302.