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REVISION OF COELOSTOMA

(S. STR.)

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REVISION THE NON-AMERICAN "COELOSTOMA" (S.STR.)<sup>1</sup>  
by A. d'Orchymont, conservator of the Royal  
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INTRODUCTION

The Coelostoma s.str., i.e those whose mid femora are not densely waterproof, but simply garnished with well-spaced setiferous pores, have an external organization which is of truly exasperating uniformity. All distinction is reduced to details of sculpture bearing on the relative strength and spacing of the punctation of the top of the head, the pronotum and the elytra. Differences are, however, also noted in the form of the prothorax -- more transverse and shorter, or narrower and longer; in the punctation of the underside of the femora, of the metasternum; in the form of the mesosternal process, etc.; but these distinctions are subtle and unsure; they are characters which it is difficult to diagnose, which can easily be interpreted subjectively depending on the observer, and which, finally, do not permit a sufficient characterization, of the species.<sup>2</sup> Thus confusions in the present state of our knowledge are frequent .

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1 I am insufficiently informed with respect to the Cyclonotum posticatum Sharp, 1887 (Panama), Cycl. Urichi H. Scott, 1912 (Trinidad) and Coelostoma darwini Balair, 1933 (Galapagos). It is not yet proven that these three species really belong to Coelostoma. It is for this reason that they have not been included in this work.

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Formy our part, in 1924<sup>3</sup>, I thought, mistakenly, that *C. rufitarse* Boheman of Ceffereri should be jointed with *C. punctulatum* Klug of Madagascar.

Since then I have realized that the so-called transitional forms on which I had based my opinion, reexamined now in the light of new processes, were seen to belong in reality to distinct, for the most part even unpublished, species. Moreover, the length-to-width ratios which, for lack of anything better, I had imagined to propose this joining were in reality a fallacious criterion.

The separation of the species becomes, on the other hand, much easier and much surer when one follows the method which I have successfully used for the distinction of the *Hydraena*. It consists:

1. in separating the sexes;
2. in studying the aedeagus.

Unfortunately; we know no secondary sexual character making it possible to recognize the ♂♂ and the ♀♀. Thus we are obliged to dissect absolutely all the specimens. This is how the operation is carried out: The specimens are plunged in onethird ammonia water, which softens them, and are then boiled. By boiling, the organs and membranes take on again the turgescence and the flexibility they had in life. With mounting pins, the abdomen is detached, but only on one side, and is partially removed from the elytral cavity,

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2 H. Scott already realized this in 1913 (Trans. Linn. Soc. Lond., SVI, 2, p. 213, note). He thought it necessary to make a profound revision of the species using the genitalia as a basis  
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cavity, being slid on the side above the hind feet; in this way the dorsal extremity is uncovered. The latter is examined under the microscope, while the last dorsal segments are lifted slightly. If one sees the two mesocerci, biarticulate and ciliate at the end, the specimen is a ♀ : the abdomen is put back in place, the insect is glued back on its support, and a label of sex is attached with a pin. If, on the contrary, this procedure shows the the extremity of the aedeagus, the abdomen is detached completely. By gently stirring the last dorsal segments with the needles, the genital armature is forced to unsheathe itself, This entirety (abdomen+evaginate aedeagus) is then glued back on the same support, the aedeagus in front and the dissected specimen behind.

This is fastidious work, especially when one is working with hundreds of specimens, but once done it amply compensates for the care that has been taken, in the facility with which it is then possible to form series of specimens which are similar or which belong to the same species .

There remain the ♀♀ . In many cases, there is no certainty as to their identification if there are available no ♂♂ of the same locality, preferably caught at the same time. In fact, comparison of the sculpture and of the external characters in general gives only a semi-conviction in the case of specimens of different origins, since the representatives of species which are distinct by their very disparate aedeagi are sometimes so similar externally that they can easily be confused .

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<sup>3</sup>Ann . Mus. Civ. Stor. Nat. Genova, LI, pp. 257-159 .

But even ♂♂ having the same aedeagus and clearly belonging to the same species, caught together, sometimes have variable sculpture. This shows how difficult the study of these insects is; the identification can be considered final only when the aedeagus has been consulted. All identifications previous to this work -- including my own -- should be reviewed, when the morphology of this organ has not been envisioned during the study .

The characters should be sought primarily in the conformation of the parameres, in that of the median lobe, and in the emplacement and form of the median orifice or ventral pseudo-opening. These are practically the only parts of the aedeagus which show individual peculiarities of real taxonomic value. The basal lobe does, nevertheless, show differentiations as well, but they are much less clear and of lesser magnitude. The same is true of the membranous medio-ventral part, at the base of the parameres. This part has, in fact, a variable extent, depending on the maturity of the specimen, and it can be correctly interpreted only on preparations which are particularly well done and which have not become distorted in drying. Nevertheless, while for the separation of most species the consistency and distinctness of the characters of the aedeagus provide veritable touchstone, there are yet cases (the groups phalacroides -rubrocinctum, rufitarse, etc., for example ) in which this organ itself shows a certain degree of variability, a fact which further complicates the work of interpretation and identification. We have here, probably, specific categories which are becoming parcelled, or perhaps even, in certain cases, hybridation .

For these, a complementary study based on much fuller materials of more varied origins should, in future, be done.

The present work has no pretenses of a phylogenetic nature; such would be premature. Its only aim is to seek to make the identifications less uncertain, and to avoid, in future, confusion which have occurred. In this, aim, and to fix the nomenclature, I shall review, in order of age, the species already described and revised, in so far as in possible from the original type. The diagnosis of certain new forms gravitating around each of these will be intercalated where necessary, but only when I have been able to see at least two males which are identical from the standpoint of the aedeagus.

The unique specimens, although recognized as unpublished also, will thus temporarily be left from consideration, until later reception of at least one additional male.

After C. romphea sp.n., certain new species of as yet difficult classification.

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<sup>3</sup> Not including Coel. dentatum Knisch, 1924, which is an aberrant Coelostoma (with mid femora densely pubescent). Other species described as belonging to the same group as dentatum: Cyclonotum Horni Reg., 1902 (tropical Asia and Africa); Coel. aeneolum Reg., 1903 (India); C. transcaspicum Reitter, 1906 (Transcaspia, Buchara); C. Salvazai A. d'Orchymont, 1919 (Indochina); C. afflatum Knisch, 1922 (New Guinea); C. lazarense A. d'Orchymont, 1925 (Philippines); C. simulans A. d'Orchymont, 1925 (Sarawak); C. cooptatum (Sumatra, Java, Bali), C. coortum (Sumatra), C. Thienemanni (Sumatra) A. d'Orchymont, 1932, Cyclonotum pygmaeum W. M'Leay, 1873, is a Paracymus, and Cyclonotum Cowlei Blackburn, 1898 = Dactylosternum dytiscoides (Fabricius, 1775 ).  
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Lastly, a drawing showing either the ventral or the dorsal face of the aedeagus has been done for each species considered, for no revision of the genus Coelostoma can be conceived of without such figures. Better than long descriptions, these drawings show the specific entities to which the published names should be applied .

The present revision has shown that the species are much more numerous in Africa than has hitherto been thought . To the six names already existing (punctulatum, rufitarse, phalacroides, rubrocinctum, subsphaeroides, Rohani ),<sup>3</sup> are added a series of others, hitherto unknown. In addition the punctulatum of Madagascar does not appear to be represented in continental Africa, where it has nonetheless been mentioned several times. The very characteristic aedeagus of this species has not been found in any of the numerous African specimens I have dissected. Lastly, there exist in Madagascar five forms of Coelostoma s.str with the aedeagus differentiated in a direction which is often divergent (see among others, figs. 3, 6, 12, 24), which are so similar externally that at least three of them have been confused under the same name punctulatum.

The Indo-Malaysian region contains only six species. On the other hand we find here a considerably larger number of aberrant Coelostoma, partly belonging to unpublished species. They will be discussed in a later work. It is curious to note that this last group is, in turn, less well represented in Africa and Madagascar. The palearctic region harbors only two species and one aberrant Coelostoma (transcaspicum).

The Australian and Oceanian regions have only a single Coelostoma s.str common to both (Fabriciusi).

Lastly, C. stultum, a very consistent species, spreading from Ceylon to Japan, has also been found on the island of Mauritius by J. Vinson and Ray. Mamet (2 ♂♂, 2 ♀♀ ). Was it imported, or does it bear witness to ancient relations between the Mascareignes islands and the Indo-Malaysian region ?

#### LIST OF THE SPECIES

C. (s.str. ) orbiculare (Fabricius, 1775)

Hydrophilus orbicularis Fabricius, Syst. Ent., 1775, p.229

Hydrophilus pilula O. Muller, Zool. Dan. Prodr.1776, p.659.

Hydrophilus punctatus Goeze, Entom. Beytr., I, 1777, p.666;

Hydrophilus immaculatus Rossi, Fna Etnusc, I, 1790,  
p. 48, pl. 3, fig. 5.

Hydrophilus orbiculatus Rossi, Ment. Ins., I, 1792, p. 65.

Cyclonotum dalmatinum Kuster, Kaf. Eur., 13, 1848,  
no. 40 (Dalmatia).

Cyclonotum brevitarse von Heyden, Berl. Ent Zeitschr.,  
14, Beiheft, 1870, p. 74 (Galicia).

A. d'Orchymont, Ann. Soc. Ent. Belg., 65, 1925, p. 269  
(Coelostoma).

Cyclonotum minor Sharp, Ann. Soc. Esp. Hist. Nat., I,  
1872, p. 262 (El Escorial, Hispania).

Cyclonotum breve Sharp, Trans. Ent. Soc. Lond., 1874,  
p. 419 (Japan).

Coelostoma orbiculare var. graecum Kuwert, Verh. Naturf.  
Ver. Brunn, 28, 1890, p. 178 (Graccia).

Coelostoma orbiculare var. puncticolle Reitter, Wien.  
Ent. Zeitg., 25, 1906, p. 32 (Syr Darja).

Coelostoma orbiculare var. subaereum Reitter, loc. cit.,  
p. 32 (Valencia, Hispania).

This species has, throughout, the same aedeagus, whether it be orbiculare of our own country, brevitarse of Spain, graecum of Greece or breve of Japan (fig. 1).

It is variable with respect to size, the punctation of the top, that of the femora and the tibiae seen from underneath. This is by no means surprising, considering the enormous area of its distribution. Thus I no longer hesitate to consider all the above names as simple synonyms.

C. dalmatinum, distinguished from orbiculare, and also from hispanicum, by its rounded oval form and by its larger size, has already, and undoubtedly correctly, been treated as a simple synonym by Ganglbauer. Specimens identified by Kuwert as dalmatinum were orbiculare (Pavie)+ hispanicum (Sicily). Of those from the typical localities (swamp of Narenta), I have seen only ♀♀ caught at Metkovic; no specimen from the other region mentioned by Kuster (the swamp of Cettina) has passed into my hands.

The single type of C. brevitarse von Heyden (minor Sharp) has the sides of the elytra more strongly punctate than those of the pronotum, contrary to what was stated in the diagnosis. It is because of this statement that Sharp believed his minor different from brevitarse, which he knew only through the diagnosis of von Heyden.

Only the underside of the femora and the posterior tibiae is slightly more finely and less densely punctate than in the type form.

As for the brevity of the tarsi, it is only apparent in this type, two ♂♂ and one ♀ of Cuenca (Knisch id.) do not have these tarsi shorter than in the typical orbiculare.

C. breve Sharp (Japan, China) is distinguished from the latter only by the often relatively small size.

C. puncticolle Reitter (2 ♂♂ and 2 ♀♀ paratypes, in Knisch's collection ) has the pronotum as strongly and as densely punctate as the elytra. This character is found again in certain breve of Japan and into the framework of the variability not only of orbiculare in particular, but also of the other species of the group in general.

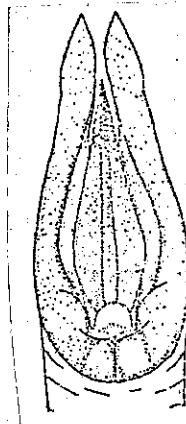


Fig. 1. Coelostoma orbiculare (Fabricius). Dorsal face of the aedeagus. X50. Ventral orifice, before the extremity of the median lobe, seen transparently.

C. subaereum Reitter of Valence, which I do not know, is said to have the top distinctly bronzed. This is certainly no more than an aberration of coloration, without great taxonomic value .

For orbiculare var. graecum Kuwert, 1890; R. Oberthur has been good enough to send me the typical specimens:

1) 2 ♂♂ and 3 ♀♀ mounted horizontally and without distinction on the same card. The pin bears four labels:

Aetolia // Type // var. graecum Kuw. Graecia // ex Museo A.

Kuwert 1894; 2) 3 ♀♀ only two of which are marked Aetolia and the last Attica. All these specimens have been reprepared to determine their sex, mounted separately, and the aedeagus of the two ♂♂ extracted. The label "type" has been reattached to one of the latter, measuring 3.7 (head assumed down) X 2.4 mm, which I choose as the holotype.

C. graecum is not to be separated from orbiculare, whose relatively dark palps it has. The slightly less strong punctation of the posterior femora, on which the author based his opinion, is by no means extraordinary: it is halfway between that of Belgian specimens of orbiculare and other specimens from Spain, identified by Knisch as brevitarse, approximately as strong as in the breve specimens of Japan.

These brevitarse have approximately the same sculpture on the top as the graecum Kuwert. The mid femora of the latter bear larger setiferous pores, with short, gilded silks, as is ordinary. Lastly, the aedeagus shows no distinctive peculiarity: The median lobe is, also as usual, very pointed and thinned at the end, with the ventral orifice slightly distant from the end. The more or less reddish coloration of the extremity of the elytra in certain subjects seen by Kuwert is not distinctive either; in none of the cases is it as distinctly delineated as in the continental form rubrocinctum of phalacroides Regimbart.

C. (s.str.) orbiculare subsp. syriacum nov.

C. var. graecum Knisch, in coll. (nec Kuwert, 1890).

The Knisch collection contains 2 ♂♂ and 3 ♀♀ of "Syrian Aleppo, "identified by that author in 1925 as "var. graecum Kuwert, " although one of the ♀♀ is identified doubtfully. A third ♂, of the same origin, is marked "Coelostoma graecum"; by whom I do not know. Finally, 4 unidentified ♂♂, received from "Syrian Beyrouth, "belong to the same form. All the males (7) have been dissected;

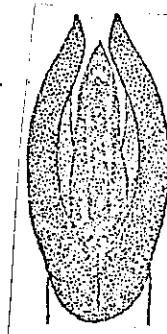


Fig. 2; C. orbiculare subsp. syriacum nov. Dorsal face of the aedeagus, X 50. Ventral orifice of the median lobe seen transparently .

they have the same aedeagus (fig. 2), slightly different from that of orbiculare : parameres dorsally a little narrower toward the end, little or not at all constricted externally, beyond the middle, terminal part of the median lobe beyond the ventral orifice shorter, less acerate and less pointed, allowing to appear the lobe, less acuminate from front to back. Dorsally the end of the same lobe does not appear longitudinally carinate in the middle, as is the case in orbiculare, in the 2 typical ♂♂ of graecum, in the paratypes of puncticolle, etc.

The maxillary palps of the ten subjects examined are in general light-colored, but a few have the base of the last article and sometimes the preceding two more or less brownish. What separates them primarily from orbiculare, from graecum, etc., is the sculpture of the underside of the hind femora, which is composed of very fine, well-spaced punctures-- among the fine striolae of the background -- not very visible, enlarged 30 diameters. The end of the elytra is reddish, except in one of the ♂♂ of Beyrouth.

This subspecies, which I name syriacum nov. (type: Aleppo, Syr. Winkler Coll. > Knisch Coll., ♂, 3.4 X 2.2 mm: the largest paratypes reach 4.2 X 2.7 mm), indicates, by the pointed extremity of the median lobe of its aedeagus and by its imperceptibly punctate hind femora, that the affinities of the continental form rubrocinctum with phalacroides of Madagascar (see below) should be sought in the latter, and consequently also in orbiculare. The hind femora appear slightly wider from the trochanter, and the aedeagus of the seven males dissected is of slightly different form, with the median membranous part at the base of the parameres on the dorsal side much less developed transversely than in a ♂ rubrocinctum of Uganda (Kampala) used for comparison.

C. Punctulatum (Klug, 1833)

Sphaeridium(Cercydidium) punctulatum Klug, 1833, Abh.

K. Akad. Wissensch. Berlin, 1832-1833, p. 161;  
Insekten von Madagascar, p. 73, Madagascar.

Cyclonotum punctulatum Fairmaire, Ann. Soc Ent France (4)  
( IX, 1869 (reproduction of Klug's diagnosis).

? Cyclonotum punctulatum Kolbe, Nova Acta Leop. Carol.  
Akad., I, 3, 1887, p. 239. Seycelles: 4

Coelostoma punctulatum Regimbart, Ann. soc. Ent. France, LXXII, 1903, p. 45, ex p. Madagascar (the indications Gabon and Loango<sup>5</sup> refer to distinct species, confused with punctulatum Klug). A. d'Orchymont, Ann. Mus. Civ. Stor. Nat. Genova, LI, 1924, pp. 257-259, ex p. Madagascar (the notes Aldabra, west Africa, Cape, Congo and C. rufitarse apply to species which are different from the true punctulatum).

As I have already said, I am now convinced that this species exists only in Madagascar. The specimen of Klug to which I alluded in 1924 (Berlin Museum) bears the number 49421 and the labels "Madagascar Goudot" 6, "Cyclonotum punctulatum ex typis Klug," the latter in the handwriting of H. Kolbe.

The size is 5.3 X 3.5 mm (head folded). The specimen is ♂, and I have taken the aedeagus from it. It is thus admirably suited for fixing definitively the status of the oldest described species after orbiculare, and I have designated it with a special label as a holotype of punctulatum Klug. 7

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4 I have not seen specimens from the Seychelles. The identification should be verified by comparing the aedeagus.  
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5 Also Portuguese Guinea : Bolama (Regimbart, 1907)  
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6 East coast, according to Klug's introduction to his Insekten von Madagascar.  
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7 By virtue of articles 30, II 9 and 31 of the R.I.N.Z., since the author designated the type neither in his diagnosis nor in the specimens .  
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The other specimens of that author-- which I have not seen --- thus automatically take the rank of paratypes, provided of course it is proven by subsequent examination that they really belong to the same species.

The aedeagus (fig. 3 ) is wide; each paramere is widely truncated at the end, and slightly protuberantly curved inward toward the end; this truncation is angular internally, rounded externally; each paramere bears ventrally, before the truncated terminal foliaceous expansion and parallel to the common median notching of the organ, a series of very fine straight striolae, very close together, even touching one another and becoming gradually shorter from inside to outside. The striolated part as a whole forms roughly a triangle, which has been elongated in the sense of the organ.

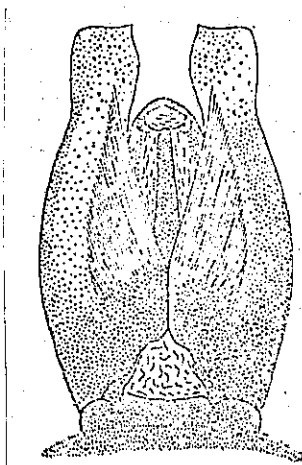


Fig.3 C. punctulatum (Klug). Ventral face of the aedeagus, X 50 .

I have not found this disposition on the aedeagus of the numerous continental African species examined. The median lobe, examined dorsally, is very wide, widening further but gradually toward the middle, without however forming on either side an abrupt wing-like expansion, as is the case in subphaeroides or Rohani; the lobe is in addition very

widely truncate-rounded at the end and the ventral pseudo-orifice is terminal.

The description and the figuration of the male genital sheath are even alone sufficient to characterize punctulatum definitively. I shall nonetheless elaborate a little on the sculpture and the coloration, although these do not make it possible to distinguish the species from other externally similar forms such as, for example, that of Aldabra. The head is covered with a fine, close punctation. The labrum is notched in the middle, but not deeply, not as in subsphaeroides. The pronotum, moderately transverse and not very short in the middle, is covered with a punctation scarcely stronger than, and as close as that of the head. The elytra have a sculpture similar to that of the pronotum, at least around the scutellum, for toward the end it becomes very slightly less dense.

The coloration of the top is a uniform shiny black, more or less but obscurely brownish transparently on the edges of the pronotum and of the elytra, when these are studied under the artificial light of the lighted microscope.

The lateral sides of the pronotum are little arcate and the posterior angles are very narrowly rounded, almost straight.

Material identified (by comparison with the holotype):

Madagascar, without further detail, 3 ♂♂, 2 ♀♀, of which one ♂♀ identified by Knisch "punctulatum"; S. Antongil Bay, 5 ♂♂, 3 ♀♀; Amber, 1 ♀; Andrangoloaka (1600 m WSW of Tananarive), 1 ♀. In addition 2 ♂♂ (Madagascar) of the Washington Museum.

C. (s.str.) hispanicum (Kuster, 1848)

Cyclonotum hispanicum Kuster, Kaf. Eur. (13), 1849, no. 39  
(Hispania).

Cyclonotum orbiculare Rosenhauer (not F.), Tiere Andalusiens,  
1856, p. 59.

Coelostoma hispanicum var. maroccanum Kuwert, Verh. Naturf.  
Ver. Brunn, XXVIII, 1889 (1890), p. 176.

This species is not a variety of orbiculare, as has been claimed. It differs from it by the always-larger size, the pronotum wider in proportion to its length, the punctation of the top stronger and thus appearing denser, especially behind the elytra, the palps lighter where they are always dark in orbiculare, the top of the hind tibiae ordinarily

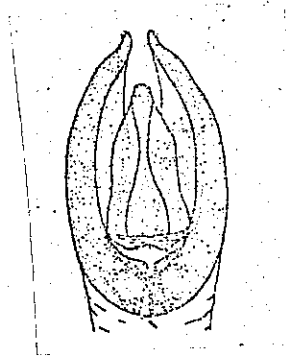


Fig. 4. C. hispanicum (Kuster). Dorsal face of the aedeagus, X 50. Ventral orifice, before the extremity of the median lobe, seen transparently .

more finely punctate, the underside of the mid femora more densely covered with setiferous pores; these pores are finer and the backward-directed silk which emerges from them is longer and more recumbent; the punctation of the hind femora is always very fine and spaced. The aedeagus (fig. 4), very different from that of orbiculare, proves moreover that the affinities between the two species are minimal .

This organ is wide and short, with the median lobe wide and very much rounded at the end, the ventral orifice terminal. That of orbiculare (fig. 1) is, on the contrary, long, with the median lobe also elongated and very pointed at the end; the ventral orifice is located a little in front of the latter. There are addition in hispanicum, at the end of the parameres and extending beyond them, very small silks (or tufts of silks?) inserted ventrally, no trace of which is found in the species compared. Nonetheless it is not always easy to detect them, because of their smallness .

C. hispanicum is peculiar to the Mediterranean region, especially western and middle (southern Europe, north Africa). I have nonetheless caught a ♂ on the island of Samos (east, Tigani NE, Revma Mytilinon, 15 m, June 10, 1933). The species is known in addition in the Canaries: 1 ♂ from Guia (Gran Canaria, Washington Museum); 3 ♂♂ which I caught with 4 ♀♀ near Santa-Cruz de Tenerife (Baranco de todos los Santos), ponds crossed by a light current, owing their existence to the seepage losses of the withholding reservoirs upstream, covered with Lemna, with Conferves and with other algae, 10-20 m (May 10, 1935) these ♂♂ have the same aedeagus. As for the "orbiculare" mentioned from the Cap Vert islands by Wollaston,<sup>8</sup> examination of the aedeagus should establish whether or not the specimens thus identified should be joined to hispanicum. I have seen no specimens from these islands.

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8 Col. hesperidum, 1867, P. 47. This identification is particularly subject to caution in that Wollaston mentions at the same time orbiculare from Madagascar and the East Indies, where this species is unknown.  
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*C. rufitarse* ( Boheman, 1851)

Cyclonotum rufitarse Boheman, Insecta Caffrar., I, 1851  
p. 601, ex p. Region of the Limpopo River.

? Coelostoma rufitarse Regimbart, Ann. Soc. Ent Fr. , 72,  
1903, p. 45. Madagascar.

? Cyclonotum rufitarse Regimbart, loc. cit., 75, 1906, p. 269.  
East Africa .

Coelostoma rufitarse Hugh Scot, Trans. Ent. Soc. London,  
16 ( 2 ), 1913, p. 212, Aldabra (= rufitarse f. rusticum m)

Coelostoma punctulatum A. d'Orchymont, Ann. Mus. Civ Stor.  
Nat. Genova, LI, 1924, pp. 257-159, ex p. Caffraria,  
continental Africa .

This species has been established on a male marked "type"  
by the Stockholm Museum and on a female, both caught by  
J. Wahlberg, and which O. Lundblad was good enough to communi-  
cate to me. These two specimens belong to two different  
species and are distinguished as follows :

Size larger : 4.4 X 2.7 mm. . Smaller: 3.9 X 2.5 mm.

Sculpture of the top (head, pronotum and elytra around the scutellum) very dense (under 30 diam.). This sculpture visibly more widely spaced.

Pronotum: lateral sides very arcate; the posterior angles very rounded and obtuse, open much more than 90° Little-arcate; these angles almost straight, scarcely more open than 90°.

Elytra over 2-3  $\frac{1}{4}$  times<sup>9</sup> as long as the pronotum in the middle, uniformly black, except very narrowly dark iron red, just against the outer edge behind . A little more than 2  $\frac{1}{2}$  times<sup>9</sup> as long, fairly widely with this color, the border beginning beyond the middle and gradually widening to the sutural angle .

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9 Boheman : " elytra prothorace vix duplo longiora..", which shows that the author has not measured the parts in question.  
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Comparing the original diagnosis, which does not designate the type, with the two specimens communicated, one also sees that the characters are taken from two different forms: "Prothorax ... medio sensim rotundato ampliat: postice ... angulis obtusis-Elytra ... atra" applies exclusively to the . "Lg. 3-3/4, lat. 2 1/2 mm. Elytra ... apice interdum dilutiore, ..." refers solely to the ♀ .

It is obviously the ♂ which must be considered as the holotype of *rufitarse* and a label establishing this has been attached to the pin by myself. The aedeagus has been removed. It is probably this specimen that I saw already in 1924, but the sex had not at that time been established.

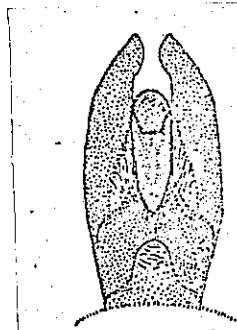


Fig.5. *C. rufitarse* (Boheman), holotype. Ventral face of the aedeagus, X 50 .

As for the ♀ , it belongs to the complex phalacroides-rubrocinctum Regimbart (see below); its sculpture is a little finer, and above all more widely spaced, than in the typical specimens to which these two names apply. It is entirely identical to a ♀ of *Natal* (Irere, Knisch coll. and id.: *rufitarse*) which I have before me. It loses all typical value and cannot, moreover be explained definitively until males have been received from the same region, having the same structural characters .

The species from the following localities, all in continental Africa, belong to the same species as the holotype rufitarse: Natal, Durban, 1 ♂ ♀ ; Pretoria, 1 ♀ ; west and south Africa, Swakopmund, 1 ♀ ; Kuboos, Richtersveld (G. van Son, Transvaal Museum), 1 ♂ ♀ ; Ogone, Lambarene. 1 ♂ ; Ukerewe Island in Victoria-Nyanza Lake (R. P. Conrads), 3 ♂♂, 1 ♀ ; Angola, Uaniomba, 4 ♂♂ ; Belgian Congo, Blukwa (A. Collart), 35 specimens (♂♂ ♀♀ ) ; Mozambique, environs of Vila Pery, banks of the Mningaze, at the foot of the Cabeça de Velho ( P. Lesne, Paris Museum), 1 ♀ ; slightly doubtful in the absence of ♂ from the same place.

In these, as moreover in the type, the lateral sides of the pronotum are very arcate, particularly against the posterior angles, and these angles are also very rounded and obtuse. The middle of the anterior edge of the prosternum is ordinarily not dentate, but seen from the side one can nevertheless sometimes see a small, fairly distinct tooth-like protuberance. The median lobe of the aedeagus (fig. 5) is always fairly massive , rounded at the end, abruptly widened at the base dorsally, with the orifice placed at the end: the extremity of the parameres is slightly angular, but the angle is not internal.

The form of Madagascar and Aldabra that I call rusticum f. nov. is quite difficult. The aedeagus (fig. 6) observed in 8 ♂♂ (Ambositra, 1, type, 4.2 X 2.6 mm; Mavarana, 1; Ananarivo, 3; Diego Suarez, 1; S. Bay of Antongil, 1; Aldabra, 1, Knisch coll. and id.: punctulatum)

has the extremity of the parameres slightly variable in form depending on the specimen, but the final angle is fairly generally internal or almost internal. In addition the median lobe is not abruptly attenuated after the base, but is more massive, triangular in form, regularly narrowing from the base to the end, which is also rounded. The lateral sides

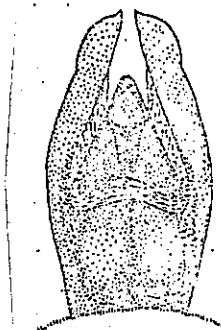


Fig.6. C. rufitarse rusticum f. nov. Dorsal face of the aedeagus, X 50. Ventral orifice seen transparently.

of the pronotum are sometimes very arcate, sometimes much less so, and the posterior angles are either very rounded or straighter, and the median tooth of the prothoracic chinpiece is fairly distinct. But two other ♂♂, including one of Andrangoloaka, in the neighbourhood of Tananarive, have the median lobe abruptly attenuated after the base, as in rufitarse, and the chinpiece is not dentate in the middle. In the ♂ of Aldabra and in 3 ♀♀ of that island, the latter identified "rufitarse" by Hugh Scott, the lateral sides of the pronotum are, as in punctulatum, very little arcate, with the posterior angles almost straight. The general form of the aedeagus and the shorter, less subhemispheric contour of the body nonetheless immediately show these specimens to be more distant from Klug's species.

The anterior depression of the mentum, in front of the punctate and shagreened posterior part of the latter, also appears less developed longitudinally in the form rusticum. The size varies from 4.2 to 5 mm in length (body contracted).

The study of the rufitarse complex is particularly absorbing. Despite very numerous dissections and interminable comparisons, it remains difficult to interpret. A study of complementary specimens from Madagascar would be desirable .

C. (s.str.) rutarum sp.n. 10

There exists, in continental Africa, yet another form related to rufitarse, very widespread, and whose aedeagus is rather different from that of this species (fig 7). The median lobe of this organ is thinner and the extremity of the parameres is truncated, very rounded externally and in a fine tip protruding inward. The middle of the anterior edge of the prosternum is uniformly, in both ♂ and ♀ garnished with a small, fairly long tooth, and the underside of the mid femora appears to have a finer and more silky spaced pubescence than in rufitarse.

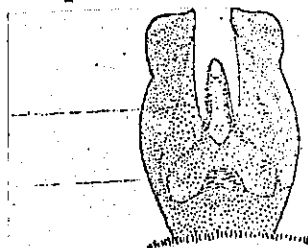


Fig.7. C. ruldrum sp.n Ventral face of the aedeagus, X 50. Base of the median lobe seen transparently.

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10 Name without significance.  
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The size is generally fairly small and the lateral edges of the pronotum are ordinarily less arcate with the posterior angles less rounded. But these characters are not very consistent, and only the aedeagus is determining for identification .

The sculpture of the top is also variable, ordinarily very dense and more or less strong .

Type and paratypes :

Belgian Congo: Katanga, Kinda (ex Staudinger), 2 ♂♂ , 2 ♀♀ , including the type, ♂ , 4.7 (head assumed lowered) X 2. 7 mm; Kambove, 4000-5000 feet, February 1, 1907, 1 ♂ ♀ ; Bas-Uele, Buta (Nobels 1928), 2 ♂♂ ; Likimi Diobo, october 10, 1927 (A. Collart), 1 ♂ ; Faradje: Ndua and Nzope, February and March 1930 (A. Collart), 2 ♂♂ ; Boma(Tschoffen); 1 ♂♀ ; French Congo: Libreville, 1 ♂ ; Congo (Dannfelt) without further detail, rufitarse Knisch id. (Stockholm Museum), 1 ♂ ; Victoria Nyanza, I. Ukerewe, July ( R.P. Conrads), 2 ♂♂ , 1 ♀ ; Uganda, Kampala, September 10 and October 7, 1929 (G.M.E Hopkins, Brit. Mus.), 3 ♂♂ , 5 ♀♀ ; Senegal , 1 ♂ ; Upper Sudan, 1 ♂ ; Dahomey, 1 ♂♀ ; Mozambique, Vila Pery, banks of the Mzingaze, at the foot of the Cabeça de Velho (P. Lesne, May 20, 1929 (Paris Museum), 1 ♂ ; Port Natal, 2 ♂♂ ; 1 ♀ ; Liberia: Mount Coffee, February 1897 (R.P. Currie, Washington Mus.), 1 ♂♀ . Also English east Africa (Taveta, Voi, Kenya), 3 ♂♂ . In addition, four females of the Belgian Congo Moanda, Lower Congo, R.P. Cruyen 1920; Ituri, la Moto. Madyu (L. Burgeon); Upper Uele, Moto (L. Burgeon), two specimens; the last three of the Congo , but without males caught at the same time,

and therefore of still slightly doubtful identification

C. (s.str.) stultum (Walker, 1858)

Hydrobius stultum Walker, Ann. et Mag. Nat. Hist., 3, II,  
1858, p. 209 (Ceylon).

Cyclonotum simplex Sharp, Trans. Ent. Soc. Lond., 1874,  
p. 419 (China, Japan); loc. cit., 1890, p. 256 (Colombo-  
Ceylon).

This species is known in Ceylon, continental India, Indochina,  
China, the Andaman and Nicobar islands, Sumatra, Java,  
Sumbawa, Borneo, the Philippines, Japan, and, as I have said,  
2 ♂♂ and 2 ♀♀ have been received from the island of  
Mauritius.<sup>11</sup> Males of all these regions have been studied  
from the standpoint of the aedeagus, except from Ceylon,  
from where I have seen only a single ♀.

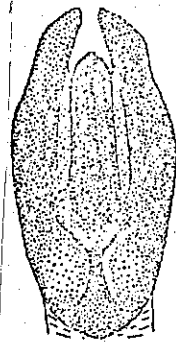


Fig. 8. C. stultum (Walker). Dorsal face of the aedeagus,  
X 50. Terminal ventral orifice, invisible in the drawing.

This organ varies slightly with respect to the extremity  
of the parameres, which, externally, are fairly protuberant  
and angularly rounded; sometimes (specimens from Andaman,  
Nicobar, Sumatra, the Philippines, etc.) the angle is more  
rounded here.

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11 Black River, March 17, 1933 (J. Vinson), 2 ♂♂; La Ferme,  
March 29, 1933 (Ray, Mamet), 1 ♀; Pointe aux Sables, April  
1, 1933 (J. Vinson), 1 ♀  
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It resembles *hispanicum*, of which it has approximately the same size, but the punctation of the top is finer, especially behind the elytra; the scutellum is smaller; the first joint of the mid and hind tarsi is longer, and the aedeagus (fig. 8) is totally different (parameres not ending in a sharp point, median lobe with sides almost parallel from the base, not widened there).

Differs from the oriental species (Fabriciusi, Vitalisi, fallaciosum) by the arrowhead of the underside of the mesothorax, blunt in front, not or little tectiform, but more or less widely convex on its lower face; from the second of these species (Vitalisi) in addition by the hind femora, forming a fairly narrow curve at the end, not extending further in a fairly pronounced blade above and below the base of the tibia, as is the case in this species. The size is also larger.

Mentum with an anterior semi-circular dimple less wide than in Vitalisi .

Glabrous median elevation of the metasternum regularly convex in the middle, badly delineated, ovoid and straighter than in Vitalisi, regularly attenuated in front to the point of meeting the mesothorax, the part between the mid cotyloid cavities short and wide.

Hind femora finely punctate, intervals of the punctures ordinarily finely striolate; almost not striolate and much smoother and shiny, with the punctation still finer, in specimens from the Andaman and Nicobar islands and from the Philippines (Mindanao).

The maxillary palps are light; the prothoracic chinpiece is not dentate in the middle and the first ventral segment is not carinate. The claws of the tarsi are not dentate.

I have not seen the type of Hydrobius stultus Walker, but Sharp (1874) has accepted the synonymy stultum (simplex), and by that fact the simultaneous presence of the species in Ceylon, China and Japan. The aedeagus is, moreover, of analogous form in ♂♂ of India and of the latter two countries.

C. (s.str.) Fabriciusi (Montrouzier, 1860), emend. Ochthebius Fabricii Montrouzier Ann. Soc. Ent. Fr (3) VIII, 1860, p. 245. New Caledonia.

Cyclonotum Mastersii W. MacLeay, Trans. Ent. Soc. N.S. Wales II, 2, 1871, p. 133. Australia.

Cyclonotum Fabricii Fauvel, Rev. Ent. Caen, II, 1883, p. 357, loc. cit., 22, 1903, p. 355. Australia and New Caledonia.

Cyclonotum australe Blackburn, Proc. Linn. Soc. N.S. Wales (2) III, 1888, p. 839. Australia.

Cyclonotum extraneum Sharp, Fna Hawaiensis, III, 1908, p. 579. Hawaii.

Coelostoma Fabriciusi A. d'Orchymont, Nova Guinea, XV, Zool., Book 1, 1924, p. 30; New Guinea, Australia, Hawaii island. Bull. Ann. Soc. Ent. Belg., 65, 1925, p. 270, ex p.; Australia, Tasmania, New Caledonia, Hawaii.

? Coelostoma femoratum A. d'Orchymont, loc. cit., 1925, p. 270 (dwarf form). Australia.

A species described from New Caledonia, but I have seen only two females from that island.

The specimens of Australia, including two ♂♂ identified Mastersi by Lea, and of Tasmania, have the underside of

the hind femora sparsely covered with fine setiferous pores, almost not reticulate in the intervals of these pores, except possibly towards the outside and in front .

Two ♂♂ of the Hawaiian islands identified extraneum by Perkins, have an aedeagus similar to that of the specimens of Australia and Tasmania, i.e. with, on the inner side of the parameres, beyond the end of the median lobe, 2-3 microscopic silks, often agglomerated, and appearing to form only a single hair (fig. 9). The underside of the hind femora is, throughout, distinctly though finely striolate between the fine setiferous pores in these two males.

The three specimens of New Guinea (Merauke) currently at my disposal and related by myself to Fabriciusi are all of ♀ sex. But the sculpture, strong and very close, of the top and that of the lower surface of the hind femora, the conformation of the sternal parts, confirm this identification. On the other hand, the size is smaller, and the third specimen, the smallest, may already belong to the following form.

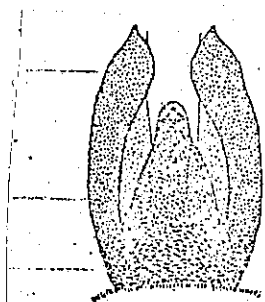


Fig. 9. C. Fabriciusi (Montrouzier). Dorsal face of the aedeagus, X 50. Terminal ventral orifice, slightly visible transparently.

I wonder whether this form, my femoratum of 1925, is really specifically distinct from Fabriciusi, especially from the Australian specimens with hind femora very little striolate underneath, between the setiferous pores . But the size is much smaller, and the parameres, examined in four males, do not have at their postero-internal side the microscopic silks to which allusion has been made. The median lobe of the aedeagus is also slightly less widened toward the base, not appearing triangular, both in the typical males of Cairns and in one ♂ of Madura Island (northeast of Java), marked " n. sp. " by Knisch . More numerous, and males of New Caledonia are necessary so that we can better circumscribe the limits of Fabriciusi .

The presumptions of affinities between this species and hispanicum, advanced by Fauvel (long ago), are more or less confirmed by the aedeagus (fig. 9), whose median lobe is rounded at the end, widened at the base, and the orifice of which is terminal in both species. The male copulatory organ is nonetheless sufficiently distinct in Fabriciusi to permit us to conclude that the two names have specific validity (extremity of the parameres otherwise acuminate. interno-distal instead of external silks, median lobe regularly attenuated toward the end, not abruptly shrunken after the base, etc. ).

C. (s.str.) fallaciosum sp.n

Coelostoma Fabriciusi A. d'Orchymont, Bull. Ann. Soc. Ent. Belg., 65, 1925 p. 270 (cf. Coelostoma sp. B., ibid., 59, 1919, p. 73), ex p. Tonkin, Sumatra, Borneo.

I have come to reexamine the specimens still in my possession from Annam, Tonkin, Sumatra, Borneo and China, which I formerly, for lack of better knowledge, classed with Fabriciusi. Those of Annam and of Tonkin are all ♀♀, but I have been able to study the aedeagus of several males of Borneo, 1 of Sumatra (Palembang) and 1 of China (Amoy). In common with Fabriciusi these specimens, ♂♂ and ♀♀, have the mentum non-shagreened between the punctation behind the anterior impression, the hind femora wide from the middle to against the trochanter, and the same mesosternal process. But the sculpture of the top is, in them, less strong, more widely spaced; the median lobe of the aedeagus, instead of being gradually attenuated from the base to the tip, is abruptly attenuated after this base -- a little less abruptly in the specimen of Amoy -- and the extreme tip of the parameres is internal, without trace of silks at the extreme inner edge (fig. 10). In the Fabriciusi of Australia and of the Hawaiian islands, this tip is more external and the silks are discernable although to detach them requires much attention.

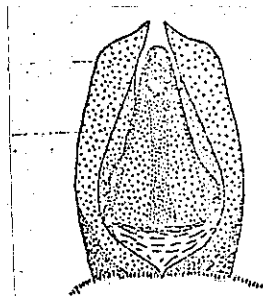


Fig. 10. C. fallaciosum sp.n Dorsal face of the aedeagus, X 50 (specimen of Amoy-China) . Ventral orifice, at the extremity of the median lobe, seen transparently .

What is more, the aedeagus of the litigious specimens greatly resembles that of the two exceptional rufitarse rusticum of Madagascar which have been alluded to, but in them the median orifice is larger; the parameres are straighter at the end; the mentum is distinctly shagreened between the punctation behind the anterior excavation, and the hind femora are much straighter, both in the middle and against the trochanter .

Type :

British north Borneo; Mount Marapok (Dent Province) ex Janson, ♂, 5.2 X 3.2 mm .

Paratypes :

North Borneo (Fruhstorfer, 1 ♂, 2 ♀♀, Brunei, Borneo (Waterstradt), numerous series ~~♂♂~~ communicated by Janson; Sumatra, Palembang, 1 ♂ ; Annam-Laos, Keng Trap (Vitalis of Salvaza), 2 ♀♀ ; Tonkin: Lake Tho and Hoa Binh (R.P. de Cooman), 2 ♀♀ ; Hanoi, 1 ♀ ; Dap Cau, 1 ♀ ; China, Amoy, 1 ♂ .

C. (s.str.) subditum sp.n.

Differs from stultum by its much smaller size, the arrow head of the mesothorax longitudinally ridged at its lower face, instead of being simply convex; by the much shorter, more silky tarsi, the basal joint of the hind tarsi also shorter; the aedeagus, whose median lobe, instead of having its sides parallel, is strongly attenuated from the base to the end, and whose parameres are shorter.

Distinguished from Vitalisi and from vividum by the hind femora, not at all widely oval, but even narrower at the end

against the tibia, than in *stultum*. They are finely punctate and striolate underneath; the punctation of the mid femora is much stronger. The ventral orifice of the aedeagus is terminal, as in *stultum* and *Vitalisi*, but in the latter the end of the median lobe is is widely triangular with the orifice very large. Lastly, the aedeagus of *vividum* and also that of *Waterstradti* differs principally from that of *subditum* by the ventral orifice, very much removed from the end of the lobe. The tarsi of the new species are not hirsute as in *Waterstradti* and the buccal organs are not particularly silky. Lastly, it can immediately be seen to be distinct from *fallaciosum* by the much smaller size, the tarsi much shorter, especially the first joint of the

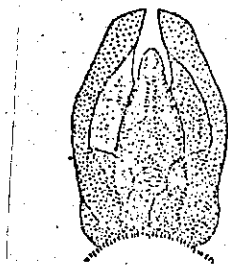


Fig. 11. *C. subditum* sp. n. Dorsal face of the aedeagus, X 50. Terminal ventral orifice seen transparently.

hind tarsi. The median lobe of the aedeagus has another form, and the base of the parameres is abruptly advanced dorsally toward the middle of the organ, which is not the case in *fallaciosum* (compare figs. 10 and 11). Greatly resembles *orbiculare* from above as to sculpture and contour, especially the small oriental form that Sharp has named *breve*, but the palps are light-colored and the aedeagus is totally different.

Type :

Pontianak, Borneo, ♂, 3.9 (head assumed lowered )  
X 2.4 mm, ex Janson .

Paratypes :

Same origin, ♂♂, ♀♀, a long series communicated by  
Janson at the same time as 2 ♂♂ and 2 ♀♀ of Brunei  
(Borneo). The size varies in length from 3.6 to 4 mm,  
regardless of the sex .

C. (s.str.) phalacroides and rubrocinctum  
Regimbart, 1903 and (1906)

Ann. Soc Ent. France, LXXII, pp. 44-45 and LXXV, pp. 269-270

I had already joined these two names<sup>12</sup> when, assailed  
by doubt, I decided to reexamine the types, referring to the  
aedeagus. The type of phalacroides, from Fort Dauphin  
(southern Madagascar, Alluaud, 1900) is ♂ and measures  
3.2 X 2 mm. There is also a ♀ with the same label of origin  
and marked, also by Regimbart, "phalacroides" in the  
Alluaud collection ; it can be considered as a paratype.  
C. rubrocinctum was, according to the diagnosis, established  
from two specimens of Kilimanjaro, but without mention of sex.  
I recognized that these were a ♂♀. They are "ex typis," since  
no type was identified by the author, either in the publication  
or in the pins. What is more, even the text of the diagnosis  
makes no distinction between these two specimens, except for  
the size, which seems to vary from 3 to 3-1/3 mm.

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12

Bull. et Ann. Soc Ent. Belg., LXIX, 1929, p. 91  
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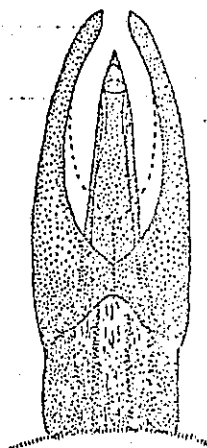


Fig. 12. C. rubrocinctum (Regimbart) Ventral face of the aedeagus in the holotype, X 100. The dots indicate the placement of the medio-basal longitudinal space and the form of the terminal notching, between the parameres, in C. phalacroides Regimbart, type ♂, of Madagascar.

In fact, it is the first specimen, the ♀, which is the larger (3.4 X 2 mm), the ♂ placed second measuring only 3.2 X 1.8 mm under the micrometer. It is purely by accident that this ♀ was found the first, and Regimbart provided it alone, for this reason, with a label of identification "rubrocinctum Reg. , " as do many entomologists, to spare himself work and time. But this circumstance is not in itself sufficient for us to consider this specimen as the type, as the Paris Museum has done. In conformity with articles 30, II, 9 and 31 of the R.I.N.Z., it is up to the original author, or if he has not done so, to a subsequent author, to make the choice, and this designation of type should always, in order to be valid and irrevocable, be explicit (art. 30, II, in fine).<sup>13</sup> But Regimbart did not do this.

<sup>13</sup> X<sup>e</sup> Congres Int. Zool. Budapest, II 1927, p. 1591.

(The meaning of the expression "select the type" is to be rigidly construed . . . , etc. )

Since the Coelostoma are less surely diagnosed on the basis of the characters of the ♀, it is thus the ♂ that, by virtue of dispositions recalled above, I designate as holotype of rubrocinctum, both in this publication and on the insect's pin .

The punctation of these four specimens is fairly strong and dense on the head, as strong and a little denser on the pronotum, stronger than and as dense as that on the elytra. There is no apparent reticulation, except a little on the back part of the head and against the eyes. Nonetheless, looking at it well, orienting suitably and using strong enlargement (65 diameters), scarcely perceptible traces of it are found here and there in the two rubrocinctum, but not in the two phalacroides. The aedeagus is approximately the same in the two males: median lobe ending in a point beyond the median orifice, parameres ending in a less accentuated point; but the medio-basal and ventral longitudinal space, at the junction of the parameres, is half as long in the type rubrocinctum (fig. 12) as in that of phalacroides, and the ventral terminal notching of the organ is also longer. Until I receive more ample information, I consider rubricinctum as the continental form of phalacroides.

A small series of males of Uganda (Kampala, Imperial bureau of Entomology), whose size is generally larger, is that which most closely relates to rubrocinctum ♂, but the punctation of the pronotum is variable, becoming increasingly fine as the reticulation of the background becomes, depending on the specimen, more apparent.

The aedeagus also varies slightly from the standpoint of the relative depth of the terminal ventral notching and of the extreme tip of the median lobe, which is or less tapered and sharp. But the medio-basal ventral suture, at the base of the parameres, is nowhere so long as in the type of *phalacroides*. It would be necessary to see more males of Madagascar: of the six subjects of this island which have passed through my hands, there were 5 ♀♀ and only 1 ♂ (the type). Other males (Abyssinia: Katere River, J.O. Cooper, Nov. 1926, 1; Belgian Congo: Blukwa, A. Collart, 2; Mozambique : Vila Pery, P. Lesne, April 1928, 1) vary in the same sense as the specimens of Kampala. Lastly, two males of Beira (P. Lesne, 1928) have the median lobe particularly thinned and slightly pointed at the end.

Thus we apparently have here, at least until it is possible to examine longer series of more varied origins, a species which is rather variable, but which is always recognizable by the color, fairly narrowly red, of the extremity and the sides of the elytra and by the parameres, not truncate but distally pointed. The labrum is shallowly notched at its anterior edge, as in punctulatum, and not as in subphaeroides.

Lastly, it was impossible to locate the specimen of *Rhobomp* (Sierra-Leone, Mocquerys), of which Regimbart spoke in 1903, in his collection.

C. (s.str) *picturatum* sp.n.

Of elongated shape, resembling phalacroides (rubrocinctum) Regimbart, having also the extremity of the elytra reddish, but more widely, occupying approximately the posterior

quarter or even more.

The anterior edge of the labrum is rather deeply notched in the middle and the aedeagus is totally different: parameres widely truncate at the end, which is angular internally and rounded externally.

The median lobe is rounded at the end, gradually widened toward the base, without the wing-like lateral expansions possessed by C. Rohani. The ventral pseudo-orifice of the median lobe is fairly distant from the end (fig. 13).

The punctation is rather strong on the prefrons, a little denser on the back of the head, which is finely reticulate here. Pronotum normally transverse and long, without reticulation, the posterior angles almost as rounded as the anterior; its punctation is of approximately the same strength as on the back of the head, a little denser. Elytra with relatively short sutural stria; their punctation stronger than on the pronotum, slightly more widely spaced

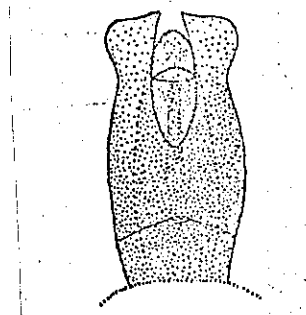


Fig.13. C. picturatum sp. n. Ventral face of the aedeagus, X50. The base of the median lobe, seen transparently.

behind than in front. Abdomen with a few large punctures in the middle, cutting through the background reticulation, visible primarily behind the first four ventral segments.

Type :

Uganda: Kampala (Huima Rd.), April 16, 1929 (G.L.R Hancock),  
♂, 4.6 (head assumed folded) X 2.4 mm, British Museum.

Paratypes :

Uganda: Kampala, September 21, 1929 (G.R.E. Hopkins);  
1 ♂♀, the ♀ communicated by M.O.J. Cooper. These two specimens are a little reddish, as though immature.

C. (s.str.) subsphaeroides (Regimbart, 1907)

Cyclonotum subsphaeroides Regimbart, Ann. Mus. Civ. Stor  
Nat. Genova, S.3, Vol. 3 (43), p. 51.

This species is characteristic by its very convex subhemispheric form and the very short elytra, attenuating from the base.

Compared with punctulatum (Madagascar), the punctation is of the same density but a little finer, the intervals between the punctures thus appear wider; this sculpture is distinctly finer on the pronotum, but on the back of the head the punctures are once again larger and closer together. The two specimens (Cameroon : Lolodorf and bay of Kavirondo) on which the author established the species were certainly slightly immature, for the normally colored specimens are uniformly black and not at all tinted iron-red on the front of the head and on the sides of the pronotum and of the elytra .

In addition, the identification of the specimen of the bay of Kavirondo should be reviewed and verified by comparison of the aedeagus.

I have seen no specimens from this region.

The male genital sheath (fig. 14) is quite wide for its length; the parameres, externally slightly strangled distally, are, internally and a little nearer the extremity, garnished with a brush of very short, microscopic hairs; they are widely truncate at the end; the inner angle of the truncation is sharp, the outer very straight, but rounded.

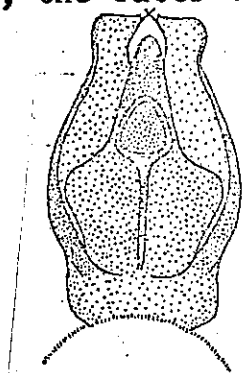


FIG. 14. C. subsphaeroides (Regimbart). Dorsal face of the aedeagus, X50. The ventral orifice seen transparently.

The median lobe is wide at the base with, on either side, a wing-shaped expansion; beyond, the lobe continues fairly longly and attenuates gradually, finally becoming rounded at the end. The ventral orifice, rather distant from the end, is large and roughly triangular, with the angles greatly rounded.

Material restudied :

Cameroon : Lolodorf (L. Conradt, 95), topotype, immature, 1 ♂ French Congo (Knisch coll.), 1 ♂, 3 ♀♀ ; Belgian Congo: Moanda (Lower Congo. R.P. Cruyen, 1920), 1 ♀ ; Ituri (Burgeon, 1918), ex Museum of Paris, 1 ♀ ; Beni (Borgerhoff), 4 ♂♂, 5 ♀♀, Upper Uele: Moto, June-July, 23 (L. Burgeon), 2 ♂♂, 4 ♀♀, Watsa, 1922 (L. Burgeon), 1 ♀ (Congo Museum).

The labrum, when it is protuberant, which is not always the case, shows a deep rounded notching in the middle of its anterior edge.

Three ♀ ♀ from Sierra Leone (including one from Rhobomp), one from Duala (Cameroon) and two from Liberia (Mount Coffee, April, communicated by the Washington Museum) are finely shagreened on the elytra between the punctation, sometimes even on the pronotum as well. It will not be possible to explain these until ♂♂ from the same areas have been studied. Provisionally, I consider them as a dubious variety of sculpture of subsphaeroides.

C. (s.str.) aethiopicum sp.n.

This species is very closely related to subsphaeroides Regimbart. It is distinguished from the latter only by the form, less wide at the shoulder, longer from the base to the end of the elytra, less convex, by the sutural stria which advances more toward the scutellum. In the species compared, this stria extends only very little from the back to beyond the middle of the elytra. The wide median lobe of the aedeagus (fig. 15) also bears, on either side, a very overextending wing - shaped expansion, but the ventral orifice is smaller and is situated at the very end of the lobe; in subsphaeroides it is quite distant from it and larger. The form of the end of the end of the parameres is also slightly different, not at all or less notched on the outside toward the end, and the inner terminal point is more protuberant.

The small brush of interno-apical silks of the parameres is present in both species.

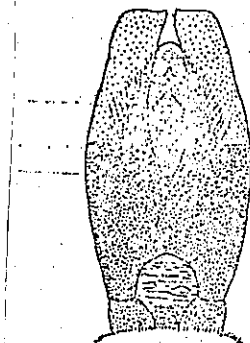


Fig. 15. C. aethiopicum sp.n. Ventral face of the aedeagus, X 50. The base of the median lobe seen transparently.

As in subphaeroides, the labrum-- not always visible, as in the other Coelostoma -- is deeply and semicircularly notched in the middle of its anterior edge.

Type :

Elisabethville (ex Staudinger), ♂, 5<sup>2</sup> 2 (head supposed lowered) X 3 mm.

Paratypes :

Boma (Tchoffen), 1 ♀, Brussels Museum. Abyssinia : Mount Chillalo (or Chilalu), ponds, 7000-8000 feet, November 8-9, 1926 (J.O. Cooper), ♂♂, ♀♀ ; Akaki ravine, 6500-7000 feet, October 17, 1926 (Hugh Scott), 1 ♀ ; Djem Djem forest, river bed, around 8000 feet, October 2, 1926 (H. Scott), Mula upstream of Mugger Valley, around 8000 feet, mountain streams; February 1823, 1926 (J.O. Cooper); in the British Museum.

A small series of both sexes from Kisantu in the Belgian Congo (Congo Museum) appears to me also to belong to this species, although the punctation of the top, especially of the pronotum, is stronger.

The aedeagus, while it has also the ventral orifice perfectly apical, nonetheless possesses parameres more like those of subsphaeroides in form, more truncated at the end with the inner terminal tip not protuberant; the outer side, near the end, may or may not also be scarcely notched. This form must inhabit almost the same region as subsphaeroides, since a female of the latter was studied in Moanda, a locality only 75 km from Kisantu as the crow flies .

C. (s.str.) Vitalisi A. d'Orchymont, 1923

Coelostoma Vitalisi A. d'Orchymont, Mem. Dep. Agric. India, VIII, 1923, p. 2 (in litt.); Treubia, III, 3-4, 1923, p. 418 (type); Bull. et Ann. Soc. Ent. Belg., 65, 1925, p. 269 (cf. Coelostoma sp. A., in Ann. Soc. Ent. Belg., LIX, 1919, p. 72), ex p.

C. orbiculare Regimbart (not Fabricius), Ann. Soc. Ent. France, LXXII, 1903, p. 63.

I have seen specimens from Indochina (Tonkin, Annam, Cochinchine, Singapore), from China (Kiautschau) and from Yunnan, from the Indies (Ceylon, Barway, Calicut, Dehra Dun), from Sumatra (Medan, Palembang,) and from northern Borneo (Kina Balu, Mount Marapok, Brunei). The species is easily

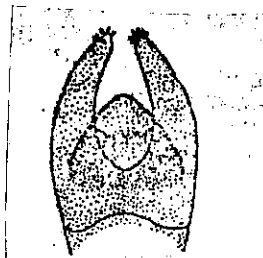


Fig. 16. C. Vitalisi A. d'Orchymont, Ventral face of the aedeagus, X50. The base of the median lobe seen transparently.

recognized by its dilate, widely oval hind femora -- very finely punctate -- not extending beyond the outer edge of the thorax without the elytra, describing at the extremity a wide curve, neither angular nor attenuated near the insertion of the tibia, the blade limiting the movements of the latter extending further beneath and on top, so that the furrow in which it articulates is deeper than in orbiculare or stultum. for example. The tarsi are also larger and shorter than in the latter, and size is smaller.

Mentum with fore pit very wide, invading almost entirely the anterior edge, which is slightly notched.  
Chinpiece of the prothorax dentiform in the middle.  
Maxillary palps light-colored.

Arrow head underneath the mesothorax variable, sometimes more pointed in front than in stultum, sometimes more blunt, the middle, between the convergent anterior sides, in a definite longitudinal crest, more narrowly convex.

Glabrous median elevation of the metasternum flat in the middle, better delineated on the sides than in the species compared, wider, more pentagonal, appearing more truncate behind, abruptly attenuated in front between the mid cotyloid cavities, the carina thus formed longer, narrower.

First ventral segment not carinate .

Tibiae appearing wider and shorter than in stultum.

Size varying in length from 4 to 4.7 mm; width: 2.7 to 2.9 mm. The type, which is from Lao-Kang (= ? Lao-Kay), in Tonkin, and which measures ( assuming the head lowered) 4 X 2.7 (not 2.2) mm, <sup>14</sup>is ♀ .

It was identified in 1923, before there was any question of determining the sexes and of examining the aedeagus. I have seen no ♂♂ of Lao Kay, but I have seen some from Lac-Tho, near Hoa-Binh (southwest of Hanoi).

The median lobe of the aedeagus (fig. 16) is very characteristic: its extremity is widely triangular in form, with the sides curved and the ventral orifice terminal. Ventrally as well, the extremity of the parameres has a clearly visible tuft of papillae.

It is probably this species that many authors have taken for orbiculare (Wollaston in 1867 m, Regimbart in 1903).

C. (s.str.) vividum sp.n.

I have seen no specimens from Java with the aedeagus of Vitalisi. Those of this island and those of Bengkalis, of Calcutta and of Bengal, which I assigned to this species in 1925, and to which one ♂ of Borneo has been added, while slightly smaller in both sexes, have an aedeagus (fig. 17) with the end of the median lobe by no means wide, but elongate and very narrowed after the ventral orifice, which lies near the middle of the lobe, not at the end as in Vitalisi.

The ventral extremity of the parameres has only 2-3 completely microscopic silks, which are difficult to see.

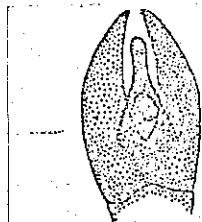


FIG. 17. C. vividum sp.n. Ventral face of the aedeagus, X 50. The base of the median lobe seen transparently.

14 I received no proofs of the work of 1923, and was thus unable to correct this error.

I was unable to distinguish these subjects otherwise : but the aedeagus is so different and so constant for specimens caught in places so distant from one another, that I can only consider them as belonging to a distinct species.

The hind femora are shaped exactly as in Vitalisi, i. e. dilated, oval, not extending beyond the outer edge of the thorax without the elytra, and extending, above and beneath the base of the tibia, in a blade limiting the tibia's movements .

Type:

S.E Java: Malang, ♂, 3.6 X 2.2 mm.

Paratypes :

Java, 2 ♀♀, one labelled Slawi Tegal; I. Bengkalis (east coast of Sumatra), 1 ♂♀; southern and eastern Borneo: Doesonlanden, 1 ♂; Bengal, 1 ♂; Calcutta, 1 ♂ (only the hind body of which is preserved). All the ♂♂ (5) have been dissected .

Size varying in length from 3.6 to 3.7 mm, in both sexes.

C. :(s.str.) Waterstradti sp.n.

At first sight, this species could be mistaken for vividum because of its size, almost as small, and because of the ventral orifice of the aedeagus, placed well before the extremity of the median lobe. The hind, and also the mid, femora are of normal shape, not at all widened and oval as in the species compared and in Vitalisi; the tibiae are more widened and thicker at the end; the tarsi -- especially the last four -- are composed of shorter and thicker, almost necklace-shaped joints, covered underneath

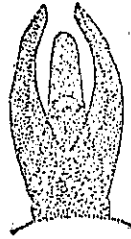


Fig. 18. C. Waterstradti sp. n. Ventral face of the aedeagus, X 50. The base of the median lobe seen transparently.

with a thick felting of long, gilded hairs, whereas in vividum they are uniformly thread-like, composed of joints which are not swollen and with only a few shorter silks underneath.

The first joint of the same tarsi is particularly short, much longer in vividum. In addition, the mouth parts, seen from underneath, including the stem of the jaws and the mentum, bear long, hirsute silks. The underside of the tibiae also bears rather long, usually recumbent silks .

Differences are noted, lastly, in the aedeagus (fig. 18) : the median lobe thins out regularly and slightly, from the base to the end; it is wider than in vividum beyond the orifice, less widened beyond, and the parameres are narrower in their second half than in this species . From above, Waterstradti and vividum appear almost identical as to form, shape and sculpture, although the last character is not very variable in the first.

Type:

Northern Borneo: Mount Marapok (Dent Province),  
ex Janson, ♂ , 3.7 X 2.2 mm.

Paratypes :

Borneo: Brunei (Waterstradt). A small series of ♂♂ and of ♀♀ communicated by Janson. The size varies in length from 3.7 to 4.2 mm.

C. (s.str.) Rohani A; d'Orchymont, 1930

Coelostoma Rohani Bull. Mus. Paris, 2<sup>nd</sup> series, vol. I,  
no. 6, p. 634, fig.

Western Rhodesia, on the river Cuando. Size: 4.25 X 2.5  
to 4.5 X 2.8 mm.

The labrum is fairly narrowly notched on its anterior  
edge, but much less deeply than in subsphaeroides.

Elytra posteriorly spotted with red, but this coloration  
has a tendency to disappear in the ♂, a little more finely  
punctate than in phalacroides. The pronotum is shorter than  
in this species, more transverse, more lunulate, and the  
punctation of the disk is finer, more widely spaced .

Chinpiece without tooth.

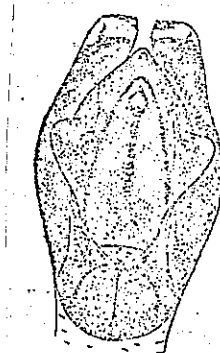


Fig. 19. C. Rohani A. d'Orchymont. Dorsal face of the -  
aedeagus, X50. Ventral orifice seen transparently .

Arrow head of the mesothorax fairly narrow, rounded on its  
longitudinal section. Anterior extension of the metasternum  
fairly thin and fine. Hind femora with fore side rather  
curved, their extremity rather wide and rounded; they are  
covered underneath with a very fine, fairly widely spaced  
punctation, and with microscopic striolae.

Parameres of the aedeagus (fig. 19) in a thin blade  
and widely truncated at the end, with the inner terminal angle  
a little sharper and more protuberant;

their outer side is only imperceptibly sinuate a little before the tip, so that the paramere is scarcely constricted at the end. Median lobe, seen dorsally, taking on the form of a very wide lance: the end is triangular, with the tip rounded; the lobe then widens abruptly on either side in a wing-like shoulder whose straight anterior side forms an obtuse angle with the terminal triangular part. Beyond this shoulder, the lobe shrinks gradually toward the base. The median ventral orifice is slightly distant from the end of the lobe.

The figure of the aedeagus has been turned around in the original publication, contrary to my instructions. Thus the relief does not appear in the drawing, which was done assuming the object to be lighted by light arriving from the left upper angle. The position has been corrected in figure 19.

C. (s.str.) rhomphea sp.n;

This species is very closely related to Rohani; I have seen, two ♂♂ which are identical, especially from the standpoint of the aedeagus, and of very different origins, so that I find myself obliged to choose a new name for it.

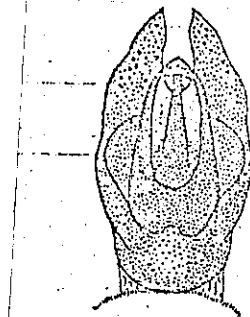


Fig. 20. C. rhomphea, sp.n. Dorsal face of the aedeagus, X 50. The ventral orifice seen transparently.

Labrum fairly narrowly and fairly deeply notched at its anterior edge, but not so deeply as in subsphaeroides.

Pronotum normally transversal, in the middle a little less than half as long as its base.

The elytra are reddish on the edges and behind, as in the species compared, but the punctation of the top is a little finer and closer .

The aedeagus (fig. 20) is perceptible different from that of Rohani (fig. 19), longer, the parameres not truncate, but ending in a point at the end, and dorsally punctate (practically not punctate in Rohani); the median lobe is egg-shaped, with curved sides pointed at the end, beyond the lateral wing-shaped expansions, the latter less protuberant and regularly rounded externally; the pseudo-opening of the lobe is more terminal.

Type:

D.O.A. (= Deutsch-Ost-Afrika), ex Staudinger, ♂, 4.4 X3mm

Paratypes :

Zambeze, Nova Chupanga, J. Surcouf, October 1928,  
1 ♂ (Paris Museum).

There is also in the Paris Museum one slightly malformed ♀, and another specimen in bad condition, the latter from Chemba (Zambeze), J. Surcouf, December 1929, the former from Beira (Mozambique), p. Lesne, December 1928, which appear to belong to this species; but in the absence of ♂♂ caught in the same place, I prefer not to consider them as paratypes.

C. (s.str.) Lesnei sp.N;

This species, taken until now by Knisch and myself for punctulatum, is quite distinct from it by its very different aedeagus. The form is also longer.

Labrum fairly widely and shallowly notched at its anterior edge, as in punctulatum .

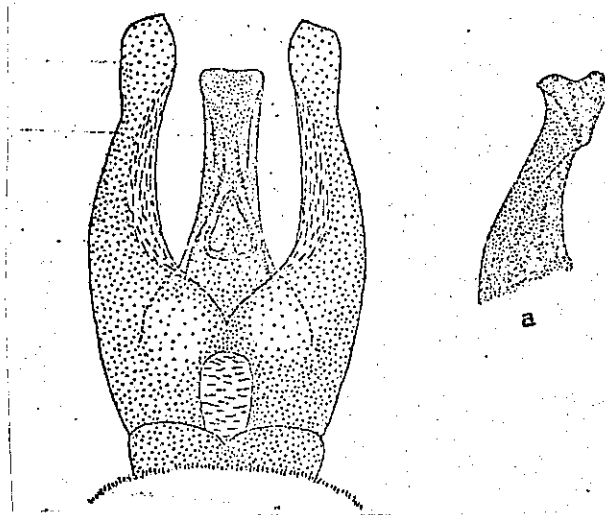


Fig. 21. C. Lesnei, sp.n. Ventral face of the aedeagus, X50. The base of the median lobe seen transparently. a: extremity of the median lobe seen dorsally and slightly from the side.

The punctation of the top, including that of the scutellum, is uniformly and densely distributed, moderately fine. The pronotum is normally transverse, in the middle approximately half as long as its base. The top, which is not shiny because of the dense sculpture, is uniformly black, except for a very narrow brownish or iron-red rim transparently, not always very apparent, around the pronotum and the elytra.

The process of the mesothorax is rounded on its longitudinal section, and the middle of the metasternum, fairly widely glabrous and shiny in the middle, forms a kind of long pentagon the base of which lies against the hind coxae and

the lateral sides of which are badly delineated and invaded by the dense pubescence of the metasternum itself. Well-spaced setiferous pores of the mid femora with a very short, gilded silk, those of the hind femora much finer, like their silk, which is also a little longer and recumbent.

Despite all this, these characters do not sufficiently define the species. Only by the aedeagus (fig. 21) can it be recognized, with certainty. This organ is fairly wide, considering its length; the parameres have a membranous lower part and they end in a very flattened, fairly wide blade, obtusely angular at the tip, which is raised by dessication in all the the specimen. But what I consider to be the original feature of this aedeagus is primarily the median lobe, strongly incurvate from top to bottom, wide at the base, then considerably thinned, widening again, though very little, near the extreme tip, where, examined ventrally, it is slightly notched; the ventral orifice lies quite far from this tip, near the basal enlargement. Dorsally, the end of the median lobe has quite another appearance: there it forms a protuberance ending in a triangle furrowed longitudinally and joined right to the body of the median lobe by a kind of spike or small carina. The whole is vaguely reminiscent of the extremity of the proboscis of a common fly, the sides of which are straight instead of rounded.

Type :

Mozambique: Beira, P. Lesne, 1928, ♂, 6.3 X 3.9 mm.  
(Paris Museum.)

Paratypes:

Same origin, A. Bodong, 3 ♂♂, 3 ♀♀, including four subjects (1 ♂, 3 ♀♀), Knisch coll., marked by Knisch "punctulat.", as well as one ♂♀ of Rhodesia: Salisbury (A. Bodong) of his collection.

C. (s.str.) Conradsi sp.n.

A small series that was sent me from the island of Ukerewe, in Lake Victoria Nyanza, by the R.P. Conrads, belongs to a species which is extremely closely related to Lesnei. Only the size is slightly smaller. Both have the same general form, the same form of the labrum, the same rather strong and closely spaced sculpture.

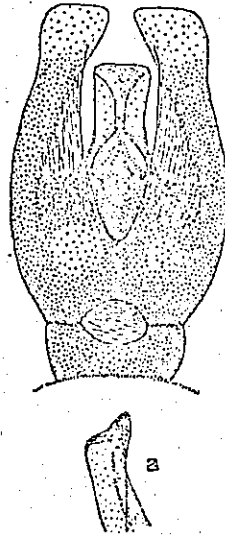


Fig. 22. C. Conradsi sp. n. Ventral face of the aedeagus, X 50. The base of the median lobe seen transparently.  
a : The extremity of the median lobe seen dorsally and slightly from the side.

But the aedeagus (fig. 22), although built on the same plan, is distinctly different in the two :

Parameres (fig. 21) wide and a little angular at the end. Dorsally they are wide at the base and cover a good part of the widened base of the median lobe with an expansion in a thin blade.

Ventral pseudo-orifice of the median lobe in a long triangle, rounded at the 3 angles, with at the base a small sclerified tooth which decreases its light.

Median lobe, seen dorsally, more longly narrow in its posterior part; strongly widened at the base, but gradually, without marked angle.

Triangular differentiated extremity of the same lobe joined dorsally to the remainder of this lobe by a short carina .

Completely truncated at the end and strongly rounded externally at the end. Dorsally they are very narrow at the base, leaving the median lobe entirely free.

This orifice, in the form of a V-shaped slit, whose opening is basal, because of the development assumed by the sclerified basal tooth.

This lobe relatively wider in its posterior part, more widely in a thin blade on the sides, strongly widened at the base also, but abruptly, forming a very accentuated inward facing obtuse angle. Extremity more rounded externally, the smaller differentiated triangular part smaller joined dorsally to the remainder of the lobe by a carina at least twice as long.

Type:

I. Ukerewe (R.P. Conrads), July, ♂, 5.4 X 3.2 mm,  
no. 3/1379.

Paratypes :

Same origin, July and August, 2 ♂♂, 5 ♀♀, no. 3/1379, 2/69 and 2/128, 5/70. The size varies in length from 4.9 to 5.8 mm.

C. (s.str.) Mocquerysi sp.n.

Here again we have a species, distinct by its very different aedeagus, which has been confused with punctulatum, especially by Regimbart, inasmuch as one can judge by what that author thought of large specimens collected in Gabon and in the inner Loango by Mocquerys,<sup>15</sup> and which I have not seen.

The size, the sculpture of the top are very similar to those of Lesnei; the pronotum simply appears slightly less transverse in comparison with its length in the middle. The coloration is also very black, with the posterior edge of the pronotum, on the sides, scarcely transparently brownish or iron-red. The labrum is shallowly and widely notched on its anterior edge.

Aedeagus (fig. 23): The parameres are long and slightly widened toward the end, which is fairly pointed, the widened part elliptically spoon-shaped; the median lobe is wide to beyond the middle; it then thins down and ends ventrally in a minute semi-circle, the lateral tips of which extend on either side beyond the thinned part of the lobe.

Dorsally this semi-circular part is supported by a small vertical and longitudinal shoulder forming a small carina with a rounded segment.

15 Ann. Soc. Ent. Fr., LXXII, 1903, p. 45. Perhaps ♀♀, for these are sometimes a little larger than the ♂♂.

The ventral orifice is rather distant from the end of the lobe .

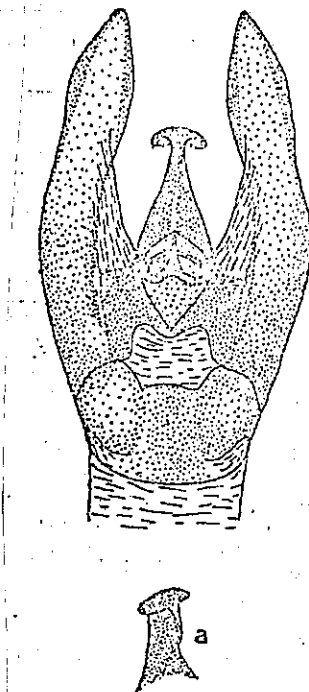


Fig. 23. C. Mocquerysi sp.n. Ventral face of the aedeagus, X 50. The base of the median lobe seen transparently.  
a: End of the median lobe seen dorsally and slightly from the side .

Type:

Gabun, ex Staudinger, ♂, 5.3 (head folded) X 3.4 mm.

Paratypes :

Same origin as the type, 1 ♂ ♀; Gabon, W. Africa (Mocquerys), 1 ♂, 2 ♀♀; Belgian Congo: Boma (Tschoffen ), 5 ♂♂, 8 ♀♀, Boma Sundi (P. Rolin), 1 ♀ ; French Congo: Libreville , 1 ♂ .

C. (s.str.) insotum sp.n.

This unpublished species has also been confused with punctulatum, and all the more easily so in that it seems to be peculiar to Madagascar, the home of punctulatum.

It is even more like C. Mocquerysi, for the form of the aedeagus in the two species follows one and the same basic plan. From above, the three coleoptera are practically identical as to coloration, general form and facies, form of the labrum, sculpture of the head, the pronotum and the elytra

The lateral edges of the pronotum nonetheless appear slightly less incurvate in insolitum, and especially in punctulatum, than in Mocquerysi, and the posterior angles are very much rounded in the latter, slightly less so in insolitum and they are almost straight in punctulatum.

The aedeagus, observed in insolitum in three identical specimens of different origins, is the only organ which, by its very differentiated morphology, makes it possible to separate the species without risk of error (fig. 24).

As in Mocquerysi, the extremity of the parameres is separated by a constriction from the base of these organs in a spoon-shaped piece, with parallel curved sides, angularly truncated at the end in insolitum, in a long oval, longly attenuated in a blunt point in Mocquerysi.

The median lobe, examined ventrally, is also

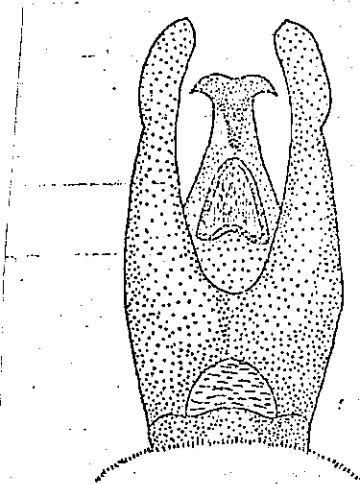


Fig 24. C. insolitum sp.n. Ventral face of the aedeagus, X 50

different. In insolitum it is notched in the middle at the end, which is advanced laterally on either side in a sharp point. The ventral orifice is distant from this extremity, in the form of an elongated heart, or better a long triangle, whose angles rounded and whose base in a curve slightly concave in the middle, in the orifice. In Mocquerysi the lobe is rounded at the end, without notching, rounded on the sides of the sides of the terminal widening; the ventral orifice is also distant from the extremity, but is in the form of a very short heart, or of a V open toward the bottom, because of a long, fine edge-like separation dividing the orifice into two convergent, distally communicating parts (fig. 23).

Type :

Southern and eastern Madagascar: Midongy (ex Staud.), ♂, 5.4 X 3.4 mm.

Paratypes :

Madagascar: Boeni, formerly Malvatanana, 1 ♂; northern Androy, Imanombo, September, 1 ♂.

In addition, an isolated ♀ from "S. Antongil Bay," identified as punctulatum by Regimbart, seems rather to belong to insolitum, for the posterior angles of the pronotum appear more rounded, because of the more incurvate parts of the posterior edge and of the lateral edges which are in contact with these angles; in punctulatum the portions of the outer edge of the pronotum adjacent to the posterior angles are straighter, and the angles themselves appear straighter and sharp.

This detail is not, however, easy to perceive; the identification of females of Madagascar remains even today, in fact, somewhat uncertain. On the other hand males of the series from this large island hitherto designated by several names (punctulatum, rufitarse -- Regimbart -- and even orbiculare -- Fairmaire, Wollaston), can be separated very easily into three species which differ totally as to their aedeagus (compare figs. 3, 6 and 24).

C. subtile sp.n.

This new African species forms the transition to the aberrant Coelostoma and probably already belongs to this series. It is still described here, at the end of this work, because some of the paratypes belong to collections made by Mr. Lesne in Mozambique .

The prosternum is dentate in the middle, anteriorly, and the first ventral segment is longitudinally carinate at the base, in the middle. But the mid femora are sparsely pubescent on their lower face, except narrowly along the

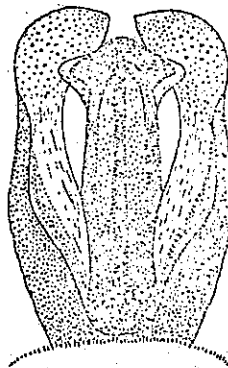


Fig. 25. C; subtile sp.n. Dorsal face of the aedeagus, X50, anterior edge, where the pubescence is densely waterproof.

The species is separated from dentatum Knisch (aberrant Coelostoma) by the larger size; despite this the much finer sculpture of the head and of the pronotum, by the pubescence of the mid femora largely spaced, the parameres not at all tapered the median lobe is lacking in the only ♂ specimen (paratype) of dentatum that I have been able to compare .

C. subtile differs in addition from C. (s.str.) punctulatum by the more elongate form, the sculpture of the top much more subtle on the head and the pronotum -- and also, but less so, on the elytra -- composed of more superficial, finer punctures thus appearing more sparse; the top, uniformly black, is much shinier. The lateral sides of the pronotum are very little arcate and the posterior angles of the latter more narrowly rounded than the anterior .

C. subtile can be distinguished from subsphaeroides at first sight by the not at all subhemispheric form, the more widely spaced punctation of the elytra, the background of the latter shinier, the anterior edge of the labrum little-notched in the middle but also very silky. The aedeagus (fig. 25) is totally different from that of the last two species compared .

The parameres end in a part which spreads out widely horizontally in a blade, separated by an external construction ; this spoon-shaped part is rounded externally and ends internally in a marked angle . The median lobe is very characteristic: It is wide from the base and widely rounded at the end, but on either side of the end there is a small wing-like expansion in a triangle rounded at the end and lighter in color.

These two expansions widen the lobe considerably distally; this is the opposite of what is observed in the aedeagi of subsphaeroides and of Rohani , where the wing-shaped expansions are much more proximal.

This curious disposition is repeated in all the ♂♂ , eight in number, that I have seen.

The punctures of the sides and end of the elytra to near the sutural angle -- a little larger and closer here than in front -- appear as though lunulate or umbilicate when the insect is oriented, in the artificial light of the illuminated microscope, tangentially to the direction of this light.

This detail, which is apparently insignificant, makes it possible to identify the females easily; nonetheless this peculiarity is found in other species as well .

Type :

Zanguebar, no 87, ex Janson, ♂ 6 X 3.4 mm.

Paratypes :

Same origin as the type, but without number, 1 ♂  
Zam ibar, 2 ♀♀; Mozambique: Bas-Pungue, Ponto do Pungue, end of May, P. Lesne, 1929, 1 ♂ ; environs of Vila Pery, banks of the Mzingaze (foot of the Cabeca de Velho), May 20, P. Lesne, 1929, 5 ♂♂, 1 ♀ southern Ethiopia, banks of Lake Rodolphe, Nanoropus, altitude 565 m, 1 ♀ (Paris Museum).