

The Linnean Species of *Lamellicornia* Described in "Systema Naturae", Ed. X (1758). (Col.)

By

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Introduction.

In connection with my studies of other old collections of *Lamellicornia*, in order to get a more realistic view of the later interpretations of the species described by old authors, I have taken the opportunity to examine the Linnean species from 1758 ("Syst. Nat.", Ed. X). The original material of the Linnean Coleoptera is kept in the collections of the Linnean Society in London, and partly also in Coll. Ludovicae Ulricae, now deposited in Uppsala (Zoological Inst.). Through the kindness of the Linnean Society the *Lamellicornia* were put at my disposal at the Entomological Dept. of the British Museum, N. H., where I had an opportunity to study them in 1955. I want to express my gratitude to these Institutes, and to Dr. Bertil Kullenberg, Uppsala, for their support in my work.

As regards the specimens in the collection of Ludovica Ulrica, they can be handled as the real original material on which Linné's descriptions are founded (at least in the case of the *Lamellicornia* of the collection). The collection was founded by Linné by order of the Queen, and it contains only one or two specimens of each species. It is dealt with by Linné in a special work, "Museum S. R. M. Ludovicae Ulricae Reginae etc." (1764), which is sometimes incorrectly cited as also including the original descriptions of species previously described in "Systema Naturae" 1758.

On the other hand, the collection of the Linnean Society in London contains not only material from Linné's own collection, but also many species and specimens collected by other entomologists. Therefore it is hardly possible to state with absolute certitude which specimens of this collection can be regarded as authentic Linnean material. The study of the pins in order to confirm that these are of the kind used by Linné must be regarded as a rather uncertain method. The specimens referred to in the following, are, however, all in the state to be conceivably authentic Linnean material, if nothing else is said. In two cases, the pins are labelled with a number corresponding to that of the species in "Systema Naturae" 1758 (*Scarabaeus typhoeus* and *Sc. lunaris*). It may be that these specimens could be more surely regarded as original Linnean ones (but not absolutely as the "types").

The descriptions given in the work of 1764 are, as a rule, very good in comparison with those of 1758. Many descriptions in Linné's works are supported by a reference to the beautiful and excellent figures of Roesel (1749, 1761), which can, in many cases, support the identification of the Linnean species.

General information about Linnean collections is found, e.g. in the works of Hope (1837), Jackson (1888, 1913), Lindroth (1956), Löwegren (1952), and Motschulsky (1855).

In this paper I use the abbreviations **L.U.** for the collection of Ludovica Ulrica, and **L.S.** for the collection of the Linnean Society.

I. The species.

(The numbers of the species are in accordance with those in "Syst. Nat." 1758.)

1. *hercules* (1758, p. 345; 1764, p. 3). **L.S.:** 2 specimens, **L.U.:** 2 specimens, all = *Dynastes hercules* auct. The specimens are unlabelled. Linné's description is quite sufficient. Vide Fig. 6.

2. *actaeon* (1758, p. 345; 1764, p. 4). In **L.S.** one specimen and one prothorax, in **L.U.** 2 specimens, all = *Megasoma actaeon* auct. No labels. The description is sufficient. Linné's note (1758, l.c.) "Mus. L.U." makes it possible that the authentic "type" specimen is kept in **L.U.**

3. *simson* (1758, p. 345; 1764, p. 5). **L.S.:** 3 unlabelled specimens = *Strategus simson* auct. No specimens preserved in the **L.U.** collection.

4. *atlas* (1758, p. 345; 1764, p. 6). **L.S.:** one prothorax with the fore legs only, **L.U.:** 1 specimen, all = *Chalcosoma atlas* auct. The description must be regarded as sufficient. Linné has noted "M.L.U." (see above).

5. *aloëus* (1758, p. 345; 1764, p. 7). In **L.S.:** 2 specimens, of which one unlabelled, the other labelled "W. B. Clark"; in **L.U.:** 1 specimen, all = *Strategus aloëus* auct. Linné's "M.L.U." (1758, l.c.) indicates that the **L.U.** specimen should be regarded as the most authentic one. At least the labelled specimen in **L.S.** is not Linnean. Vide Fig. 4.

6. *typhoeus* (1758, p. 346; 1764, p. 8). **L.S.:** 3 specimens, one of which labelled "6 Typhoeus"; **L.U.:** 1 unlabelled specimen, all = *Typohoeus typhoeus* auct. The number of the label on one of the **L.S.** specimens indicates that it could be an original Linnean specimen. On the other hand, Linné's note "M.L.U." makes it more likely that he has used the **L.U.** specimen for the description. It seems quite conceivable that he has later used his own number system from "Systema Naturae" when arranging his own collection. On the other hand, he had no reason for writing "M.L.U." in the connection with the 1758 description if, at that time, he had specimens of the species in his own collection.

7. *nasicornis* (1758, p. 346). **L.S.:** 2 specimens (unlabelled) = *Oryctes*
Entomol. Ts. Arg. 77. H. 1, 1956

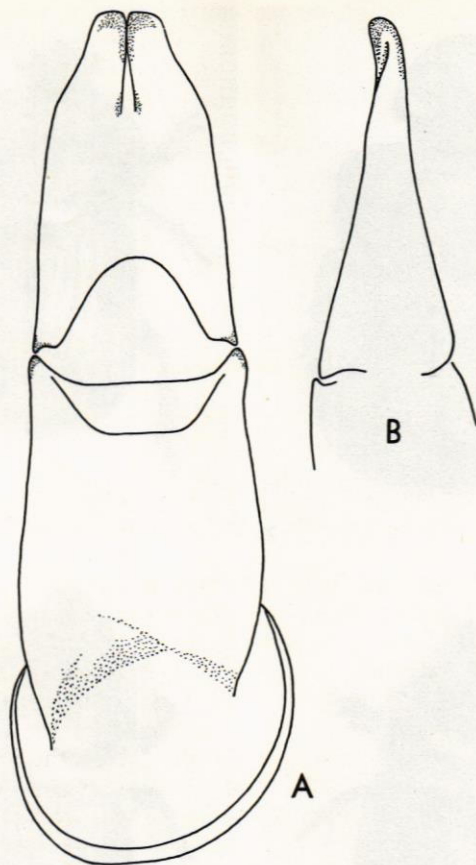


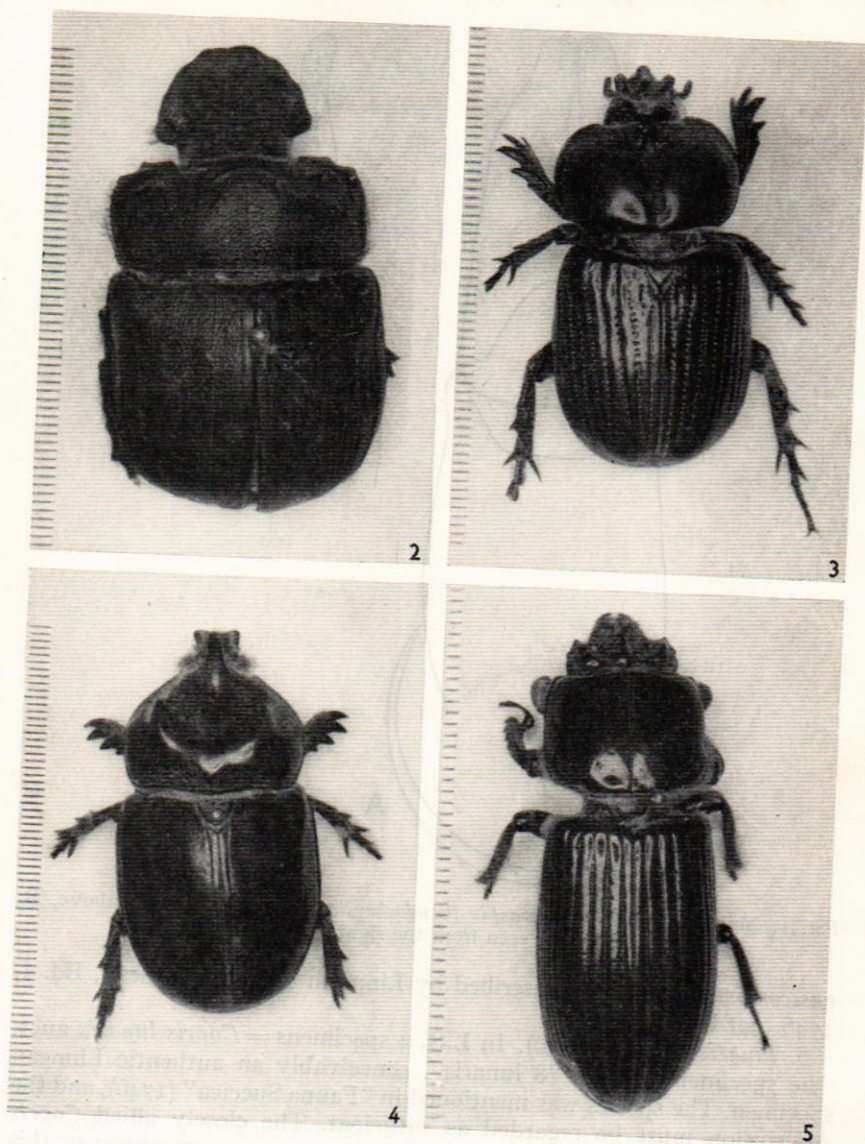
Fig. 1. Male genitalia of *Macraspis pseudochrysis* nov. A: seen from above, B: apical part, seen from the right. (Allotypus.)

nasicornis auct. Earlier described by Linné in "Fauna Suecica", Ed. I, 1746 (not binomial).

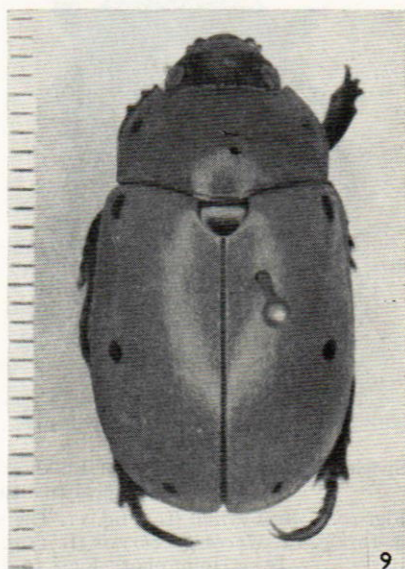
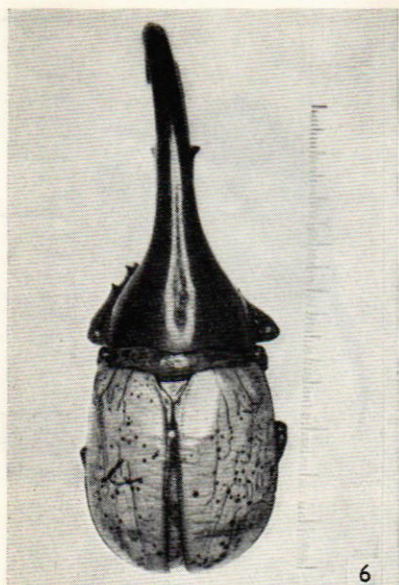
8. *lunaris* (1758, p. 346). In L.S. 4 specimens = *Copris lunaris* auct. One specimen labelled "8 lunaris", conceivably an authentic Linnean specimen. The species was mentioned in "Fauna Suecica" (1746), and the description must be regarded as sufficient. The closely allied *Copris hispanus* was described by Linné in 1764, p. 12; one specimen of this species (sensu auct.) is in L.U.

9. *cylindricus* (1758, p. 346). L.S.: 4 unlabelled specimens = *Sinodendron cylindricum* auct. The description is sufficient.

10. *carnifex* (1758, p. 346). L.S.: 4 specimens = *Phanaeus carnifex* auct. Linné's description is sufficient.



Species from the collection of Ludovica Ulrica, Uppsala.
 Fig. 2. *Heliocopris gigas* (L.); fig. 3. *Phileurus didymus* (L.); fig. 4. *Strategus aloëus* (L.); fig. 5. *Passalus interruptus* (L.). (Åke Holm phot.)



Species from the collection of Ludovica Ulrica, Uppsala.

Fig. 6. *Dynastes hercules* (L.); fig. 7. *Euchirus longimanus* (L.); fig. 8. *Cotalpa lanigera* (L.); fig. 9. *Pelidnota punctata* (L.). (Åke Holm phot.)



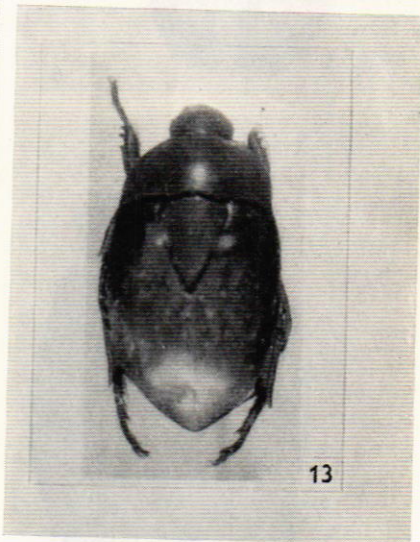
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11



12



13

Species from the collection of Ludovica Ulrica, Uppsala (Figs. 10-12), and the Zoological Institute, Lund (Fig. 13).

Fig. 10. *Cotinis nitida* (L.); fig. 11. The same specimen after cleaning, cf. the text, p. 10; fig. 12. *Macraspis chrysis* (L.); fig. 13. *Macraspis pseudochrysis* nov. (typus). (Åke Holm phot.: Figs. 10-12; P. Meurling phot.: Fig. 13.)

11. *rhinoceros* (1758, p. 346; 1764, p. 10). **L.S.:** 2 specimens, **L.U.:** 2 specimens, all = *Oryctes rhinoceros* auct. One of the **L.S.** specimens is labelled "E. Ind. NĚK", the others are unlabelled. In "Syst. Nat." Linné has noted "M.L.U.". Probably the **L.U.** specimens are the original material of the description.

12. *molossus* (1758, p. 347; 1764, p. 11). In **L.S.:** 5 specimens, in **L.U.:** 2 specimens, all unlabelled, and = *Catharsius molossus* auct. Linné's description, probably founded on the **L.U.** specimens, is very short but may be sufficient. He noted "M.L.U.".

13. *mimas* (1758, p. 347; 1764, p. 9). **L.S.:** One, unlabelled specimen = *Taurocopris mimas* auct. Although Linné noted "M.L.U." in his description, no specimen is preserved in the **L.U.** collection. As the species is mentioned in the work of 1764 it is most likely that it is later discharged from the collection.

14. *sacer* (1758, p. 347; 1764, p. 13). **L.S.:** 2 specimens, **L.U.:** 1 specimen, all = *Scarabaeus (Ateuchus) sacer* auct. No labels. Linné's description must be regarded as sufficient.

15. *didymus* (1758, p. 347; 1764, p. 14). In **L.U.:** One unlabelled specimen = *Phileurus didymus* auct. The species is lacking in the **L.S.** collection, but present in **L.U.** (the mentioned specimen), although it is not noted as "M.L.U." in 1758. Consequently the **L.U.** specimen probably should not be regarded as the "type" specimen, but only as an authentic Linnean one. Vide Fig. 3.

16. *valgus* (1758, p. 347; 1764, p. 15). No Linnean specimen preserved. The species should belong to the genus *Phileurus* Latr. (vide e.g. Cazier 1939) and has not until recently got its clear synonymy: *Phileurus valgus* (Linné, 1758; sensu Cazier, op. c., and Blackwelder 1944, 1948). It is, however, to be noted that Linné's description must be regarded as very insufficient: "Elytra brevia. — Scutellum nullum." These characteristics do not agree with those of *Phileurus*.

17. *nuchicornis* (1758, p. 347). **L.S.:** 3 unlabelled specimens = *Onthophagus nuchicornis* auct. Earlier described in "Fauna Suecica" (not binomial). Surely Linné did not distinguish *nuchicornis* from e.g. *fracticornis* Preysl.; nevertheless the **L.S.** collection contains only the former species.

18. *subterraneus* (1758, p. 348). In **L.S.** 3 specimens without labels, all = *Aphodius (Colobopterus) subterraneus* auct.

19. *erraticus* (1758, p. 348). **L.S.:** 5 unlabelled specimens = *Aphodius (Colobopterus) erraticus* auct. Linné's note "Habitat in Europa, forte et in India." could show that he included more than one species under the name *erraticus*. This is, however, not quite certain, because Linné's "India" must often refer to America (vide e.g. below, 26. *scaber*, and 34. *chrysis*), and *Aphodius erraticus* is even distributed in America. It must be noted that in "Syst. Nat.", Ed. XII (1767, p. 547), Linné only says: "Hab. in Europa.". The description is sufficient for *Aphodius erraticus*

auct., but does not exclude the more closely allied species. In the L.S. collection, however, only *erraticus* auct. is represented.

20. *maurus* (1758, p. 348). L.S.: One unlabelled specimen = *Glaphyrus maurus* auct. The description is sufficient.

21. *fossor* (1758, p. 348). L.S.: 2 unlabelled specimens = *Aphodius* (*Teuchestes*) *fossor* auct. Although the description cannot be regarded as sufficient, there is no reason to doubt the identity of the species.

22. *fimetarius* (1758, p. 348). In L.S. 4 specimens are preserved, all unlabelled, and = *Aphodius* (*s. str.*) *fimetarius* auct. The description could possibly refer also to *foetens* Fabr., but it seems most likely that Linné really means *fimetarius* auct. The var. β described at the same time (l.c.), is interpreted as *Aphodius foetidus* (Herbst) (*scybalarius* auct., nec Fabr., vide Landin 1956) which would perhaps be true (vide e.g. Schmidt 1922); the interpretation must then be founded on the colour of the head, prothorax, and elytra, because the colour of the legs ("*pedibus pallidis*") seems more to indicate the *Aphodius sordidus* (Fabr.) (the legs of *foetidus* are more or less reddish, but not yellowish). No specimen of the var. is preserved.

23. *haemorrhoidalis* (1758, p. 348). L.S.: One unlabelled specimen = *Aphodius* (*Teuchestes*) *haemorrhoidalis* auct. The noted colour of the legs ("*pedibus rufis*", l.c.) is peculiar, but in other respects the description could be considered as quite sufficient.

24. *conspurcatus* (1758, p. 348). In L.S.: 3 specimens, without labels, all = *Aphodius* (*Volinus*) *conspurcatus* auct. Linné noted "M.L.U." in his description; no specimen, however, is preserved in the L.U. collection, and the species is *not mentioned* in the work of 1764. It is quite impossible to distinguish *conspurcatus* auct. from other *Volinus* species (or from many species with black-spotted elytra belonging to other subgenera) by Linné's description. We have to rely on the fact that there are only *conspurcatus* auct. under that name in the L.S. collection. However, we have also to consider the interpretations made by Sturm, Illiger, and other previous authors (vide e.g. Landin 1956).

25. *gigas* (1758, p. 348; 1764, p. 16). L.U.: One unlabelled specimen = *Heliocopris isidis* (Latr. et auct.). One specimen in L.S. labelled "Antenor? Fab. 1. 49." is apparently not Linnean. The identification of *gigas* L. has caused the authors a good deal of trouble, and it is hitherto not definitively interpreted, although it has early been placed correctly in the genus *Heliocopris* Hope. As an uncertain species it has been placed under *isidis* Latreille, 1819. Linné (1758, l.c.) noted "M.L.U." in connection with the description, and the single L.U. specimen could be designated as the lectotype of *Scarabaeus gigas* L. As this species in all respects is identical with *isidis* Latr., the synonymy should be: *Heliocopris gigas* (Linné, 1758, nec Olivier, 1789) (*isidis* Latreille, 1819).

Consequently *Heliocopris gigas* (Olivier, 1789) must be called: *Heliocopris colossus* Bates, 1868 (*gigas* Olivier, nec Linné). Vide Fig. 2.

26. *scaber* (1758, p. 349; 1764, p. 17). No specimen preserved. The original description of this species is always in the catalogues wrongly referred to 1764, although Linné here cited his own description of 1758. The species is interpreted as the female of *Dynastes hercules* (Linné et auct.), and the descriptions (esp. the comprehensive one of 1764) support this opinion. That Linné noted "Habitat in India" (1758, l.c.) and "Habitat in Indiis" (1764, l.c.), is peculiar, but must be regarded as a mistake, or as including the West Indies in the conception of "India" ("Indiis"); cf. above, 19. *erraticus*, and below, 34. *chrysis*. The distribution record from 1758 and 1764 has not been changed in "Syst. Nat." Ed. XII, 1767.

27. *longimanus* (1758, p. 349; 1764, p. 18). In L.U.: One unlabelled specimen = *Euchirus longimanus* auct. Lacking in the L.S. collection. Linné noted "M.L.U." in his description of this magnificent species, which indicates that the L.U. specimen is an authentic one. The description is quite sufficient. Vide Fig. 7.

28. *pilularius* (1758, p. 349; 1764, p. 19). L.S.: 3 specimens, L.U.: 1 specimen, all = *Canthon pilularium* auct. (*laeve* Drury, 1770); nomina mut. ab. *pilularius* and *laevis*, vide e.g. Blackwelder 1944. All specimens seen are unlabelled. Although *pilularium* and *laeve* refer to the absolutely identical species, Linné's name has just in very recent times been given priority (vide Blackwelder, op. c.). The note "M.L.U." in the description makes it likely that the L.U. specimen could be regarded as the "type".

29. *schaefferi* (1758, p. 349). In L.S.: 3 unlabelled specimens = *Sisyphus schaefferi* auct.

30. *stercorarius* (1758, p. 349). L.S.: One specimen, without label = *Geotrupes stercorarius* auct. Like many of the coprophag species mentioned above, this was earlier described in "Fauna Suecica" 1746 (not binomial). That Linné's description refers to a *Geotrupes* species seems quite clear, but it seems also evident that Linné included more than one species under the name *stercorarius* (he has, at least, included one American species). With reference to the preserved specimen in the L.S. collection, however, there is no more reason to discuss the synonymy. Linné's note "Acaris obnoxius" in connection with the description is interesting to note.

31. *vernalis* (1758, p. 349). In the L.S. collection: 3 unlabelled specimens = *Geotrupes vernalis* auct. Earlier mentioned in "Fauna Suecica" 1746. The description is sufficient. (One other specimen in the same collection, labelled "vernalis Hampst. 1784", consequently not Linnean, is *G. stercorosus* Scriba.)

32. *calcaratus* (1758, p. 349). No specimen preserved. Schönherr (1806, p. 57) placed this species under "*Copris*", but noted: "vix hujus Generis?". As a matter of fact it does not seem to belong to the coprophag beetles at all, but probably to a *Melolonthin* or a *Rutelini* group. Hope (1837) suggested that it could probably belong to *Dichelus* Serv., but there are arguments against that opinion. The name must, however, be neglected.

33. *sabulosus* (1758, p. 350). **L.S.:** 5 specimens, of which 2 very damaged, = *Trox sabulosus* auct. 3 of the specimens are labelled "sabulosus".

34. *chrysis* (1758, p. 350; 1764, p. 21). In **L.S.:** No Linnean specimen. In the **L.U.** collection: One specimen, without label, = *Macraspis chrysis* (Linné, nec auct.). The note "M.L.U." (1758, l.c.) indicates that the **L.U.** specimen could be regarded as the "type". The species is hitherto erroneously interpreted. As a matter of fact, it is identical with *Macraspis lucida* (Olivier). In accordance with the priority rules the correct synonymy will be: *Macraspis chrysis* (Linné, 1758, nec auct.) (*lucida* Olivier, 1789).

For the species *chrysis* auct., I propose *Macraspis pseudochrysis* nom. nov. (*chrysis* auct., nec Linné). This already well-known species will be summarily described at the end of this paper.

In 1758 (l.c.) Linné says: "Habitat in India."; in 1764 (l.c.): "Habitat in America meridionali"; in 1767 (p. 551): "Habitat in America australi.". The record of 1758 is apparently a mistake (cf. above, 19. *erraticus*, and 26. *scaber*). Vide Figs. 12, 13.

35. *nitidus* (1758, p. 350; 1764, p. 26). **L.S.:** 3 specimens (one of which labelled "nitidus"), **L.U.:** 1 specimen (without label), all = *Cotinis nitida* auct. As Linné noted "M.L.U." in his original description (1758, not 1764 as always cited!), there are reasons for designating the **L.U.** specimen as a lectotype. From the beginning I doubted the general interpretation of this species, because the name, "*nitidus*", does not correspond well with the appearance of *Cotinis nitida* auct. This species is not shiny, but on the contrary quite dull (on the overside!) as a result of a very dense microsculpture, giving the surface an aloutaceous silky shine. Therefore it was not surprising to find that the lectotype specimen in the **L.U.** collection was, in some respects, not at all similar to *C. nitida* auct. The whole overside was very strongly shining, and the coarse lateral punctures of metasternum were quite lacking. The specimen was really worthy to be called "nitidus"! To make quite sure, however, I washed the specimen in spirit. The result was that it became quite similar to the generally accepted *C. nitida*. Apparently, before it was examined by Linné, it had been "varnished" with something which had made the surface shiny and covered the metasternal punctures. This case may be noted by the scientists working on revisions of old material. Old collections often consist of species (esp. tropical ones) bought from special firms, and it could be suggested that less scrupulous commercial houses made "embellishments" of more insignificant specimens, in order to enhance their commercial value. The collection of Ludovica Ulrica consists to a large extent of material bought from commercial houses (vide e.g. Löwegren 1952, p. 310, etc.). Vide Figs. 10, 11.

36. *lanigerus* (1758, p. 350; 1764, p. 22). In **L.S.:** 2 specimens, in **L.U.:** 1 specimen, all unlabelled, and = *Cotalpa lanigera* auct. The species was first described in 1758, not, as always cited, in 1764. The original descrip-

tion contains the note "M.L.U.", and must be regarded as sufficient. Vide Fig. 8.

37. *festivus* (1758, p. 350). No specimen preserved. In the general works, the species is cited from "Syst. Nat." Ed. XII (1767). It is, however, described in the same way in 1758. Valid name: *Oxysternon festivum* (L.) (Castelnau 1840, p. 82).

38. *lineola* (1758, p. 350). In the L.S. collection: 5 specimens = *Rutela lineola* auct. One specimen labelled "Allen", one "Cayenne", one "lineola et deser.", and two unlabelled (= var. *surinama* Linné, 1767). Probably the specimen from Cayenne could be an authentic Rolander specimen; this collector is mentioned in the description (1758, l.c.). It is further not quite unlikely that even the two specimens of var. *surinama* L. et auct. are collected by Rolander. There is no doubt that *surinama* really is to be regarded as merely differently coloured variety of *lineola*.

39. *punctatus* (1758, p. 350; 1764, p. 23). In L.U.: One specimen, without label = *Pelidnota punctata* auct. Noted as a "M.L.U." species (1758, l.c.). The description is quite sufficient. Vide Fig. 9.

40. *sepicola* (1758, p. 351; 1764, p. 24). No Linnean specimen preserved. Linné's description seems to indicate a species belonging to the genus *Phyllopertha* Steph. According to Hope (1837) it could probably belong to *Anisoplia* Serv., but it could also be referred to the genus *Amphicoma* Latr. or related (cf. below, 41. *syriacus*). It has remained uninterpreted, and the name must be neglected.

41. *syriacus* (1758, p. 351; 1764, p. 25). No specimen preserved. The species is referred to the subfam. *Glaphyrinae*: *Amphicoma syriaca* (L.), vide Burmeister 1844, p. 21. The description does not contradict this opinion.

42. *horticola* (1758, p. 351). L.S.: One specimen, labelled "horticola", = *Phyllopertha horticola* auct. Already mentioned in "Fauna Suecica" 1746 (not binomial). The description is sufficient.

43. *melolontha* (1758, p. 351). In the L.S. collection: 3 specimens, one labelled "Melolonth." = *Melolontha melolontha* auct., two unlabelled specimens, = *Melolontha hippocastani* Fabr. et auct. Linné's description shows that the species described must be regarded as a *Melolontha* species, but it seems quite possible that the author has also included *hippocastani* Fabr. under the specific name. As the name-labelled specimen in the L.S. collection is *M. melolontha* auct. (the label-text is in an old handwriting, perhaps Linné's own) there is every reason to use that name, according to practice.

44. *solstitialis* (1758, p. 351). L.S.: 3 specimens, labelled "solstitialis", = *Amphimallon solstitialis* auct. The description is sufficient.

45. *hemipterus* (1758, p. 351). In L.S.: 2 name-labelled specimens = *Valgus hemipterus* auct. The description is quite sufficient.

46. *fullo* (1758, p. 352). **L.S.:** Besides several specimens of younger date, the **L.S.** collection contains one damaged specimen (head and prothorax preserved) with a name-label in an old handwriting (possibly Linné's own) of *Polyphylla fullo* auct. The record from Sweden (1746, p. 130; 1758, l.c.) is not improbable; the species has hitherto been found twice in Sweden in this century. The description can also be regarded as sufficient.

47. *fasciatus* (1758, p. 352). In **L.S.:** 4 unlabelled specimens = *Trichius fasciatus* auct. The description is quite sufficient.

48. *indus* (1758, p. 352; 1764, p. 27). In **L.S.:** 1 old, mouldy, and roughly treated specimen; in **L.U.:** 1 specimen, both = *Euphoria inda* auct. The quite sufficient description contains the note "M.L.U."

49. *brunnus* (= *brunneus* nom. emend., vide e.g. Hope 1837, p. 26) (1758, p. 352). **L.S.:** 3 specimens = *Serica brunnea* auct. One of the specimens is labelled "brunnus", and could very probably be the "type" specimen; the two others wear the label "brunneus". Although Linné noted "M.L.U." in the description, the species is not mentioned in the work of 1764, and no specimen is preserved in the **L.U.** collection (cf. above, 24. *conspurcatus*). The description could be regarded as quite sufficient.

50. *capensis* (1758, p. 352; 1764, p. 30). **L.S.:** 2 unlabelled specimens, **L.U.:** 1 specimen, without label, all = *Trichostetha capensis* auct. The description, which is quite sufficient, is not marked "M.L.U.", although the species is thoroughly described in the work of 1764. It is therefore impossible to know, if the "type" specimen is in the **L.S.** or in the **L.U.** collection (if in any of them), but it seems likely that all specimens seen by me, and esp. the **L.U.** one, are authentic Linnean specimens.

Note: *Trichostetha capensis* (L.) is always wrongly cited as described in "Syst. Nat." Ed. XII (1767). The same applies to another species, *Trichostetha fascicularis* (Linné et auct.), described in "Mus. Ludov. Ulr. Reg." (1764). One specimen of the latter species is in the **L.U.** collection.

51. *lanius* (1758, p. 352). No specimen preserved. The valid designation of this species, as proposed by Gory and Percheron (1833, p. 351), is: *Gymnetis lanius* (L.).

52. *auratus* (1758, p. 352). In the **L.S.** collection: 3 specimens = *Cetonia* (s. str.) *aurata* auct. One specimen is labelled "Angl. Jones", one is unlabelled, and one wears a label with "auratus" written in an old handwriting, probably an authentic Linnean specimen.

53. *variabilis* (1758, p. 352). In **L.S.:** 2 specimens, one of which labelled "variabilis", both = *Gnorimus variabilis* auct. (octopunctatus Fabr.). The original description has the note "M.L.U.", but the species is not mentioned in the work of 1764, and is lacking in the **L.U.** collection (cf. above, 24. *conspurcatus*, and 49. *brunneus*).

This species has also been interpreted as partly (♀) identical with *Osmoderma eremita* (Scop.), vide Gyllenhal 1808 (p. 54-55), and Bedel *Entomol. Ts. Arg.* 77. H. 1, 1956

1906 (p. 257), 1911 (p. 151). The opinion of Gyllenhal and Bedel, that *variabilis* Linné (1758) includes both *Osmoderma eremita* (♀), and one *Gnorimus* species, might perhaps be true, and it is supported by the fact that Linné's description has the note "Mas femina quintuplo minor est;" and that it includes the cite: "Roes. ins. 2. scarab. I. t. 3.". In Tab. III (1749) Roesel really has a figure of *Osmoderma*. Linné does not directly indicate the Fig. 6 (= *Osmoderma*) in Roesel's work, but surely he means that figure (Fig. 1-5 = *Gnorimus nobilis*, also cited by Linné under that name). In all his works from 1761, however, Linné's description of *variabilis* cannot refer to anything but *Gnorimus variabilis* auct. (octopunctatus Fabr.) (vide Linné 1761, p. 139: "elytris albis punctatis", 1767, p. 558: "elytris albo punctatis" etc.). It should also be noted that Scopoli's description of *eremita* is dated 1763, that is, after Linné's elucidation of the description of *variabilis* (1761, l.c.). Schenkling in *Coleopterorum Catalogus* (1922) put the name *variabilis* L. (1758) as a synonym of *Osmoderma eremita* (Scop.) as well as of *Gnorimus octopunctatus* (Fabr.). It seems to me, however, quite justifiable to select one of the two species as the valid Linnean one. With the support of the fact that there are two specimens of *Gnorimus variabilis* auct. (octopunctatus Fabr.) in the collection of L.S., one of which is labelled "variabilis", written in an old handwriting (probably Linné's own), I think it might be quite justified to use the following synonymy: *Gnorimus variabilis* (Linné) (*octopunctatus* Fabricius).

Osmoderma eremita (Scopoli) (*variabilis* auct. partim).

54. *nobilis* (1758, p. 353). L.S.: 3 specimens, of which one labelled "Angl. Jones", one unlabelled, and one labelled "nobilis", written in an old handwriting. All specimens = *Gnorimus nobilis* auct. The description is quite sufficient.

55. *rufipes* (1758, p. 353). In L.S.: 4 specimens, of which 2 wear the label "Angl. Jones", and two are unlabelled, all = *Aphodius (Acrossus) rufipes* auct. Earlier described in "Fauna Suecica" 1746 (not binomial).

56. *aquaticus* (1758, p. 353). No specimen preserved. The early interpretation of this species as a *Hydrophilus* species (vide e.g. Schönherr 1808, p. 4) is, of course, very uncertain. Linné says (l.c.): "... antennis flavescens, filiformibus.". This could mean that the species belongs to the Fam. *Dytiscidae*, but it is not unlikely that Linné only noticed the long palpi of a *Hydrophilid* species, and suggested them to be the antennae. Hope (1837) does not mention this species at all. Anyhow, the species does not belong to the *Lamellicornia*, and the name must be neglected.

57. *ceratoniae* (1758, p. 353; 1764, p. 31). No specimen preserved. The species, first mentioned by Hasselquist (1757, p. 409), has remained uninterpreted. The description does in some respects indicate an *Ipid* beetle, but in others it does not agree with that group. It seems unlikely that it should belong to the *Lamellicornia* (vide also Motschulsky 1859, p. 147, note 2). Hope says about this species (1837, p. 27): "It would ...

be rashness to decide to which genus this insect belongs at present." Even to-day we cannot say more about it. The name must be neglected.

58. *cervus* (1758, p. 353). In the **L.S.** collection: 7 specimens, all = *Lucanus cervus* auct. 4 specimens ($\delta\delta\eta\eta$) are unlabelled, 2 ($\delta\eta$) labelled "Angl. Jones", 1 (δ) with a "cervus" label. The species is already mentioned in "Fauna Suecica" 1746. There is no doubt that the description refers to this species.

59. *interruptus* (1758, p. 354; 1764, p. 33). **L.S.**: 2 specimens, one unlabelled, and one with the label "interruptus"; **L.U.**: 1 specimen without label. All = *Passalus interruptus* auct. Already mentioned in "Mus. Adolph. Frider." (1754, p. 82). The interpretation is certainly quite correct. Vide Fig. 5.

60. *carinatus* (1758, p. 354; 1764, p. 34). In the **L.U.** collection: One unlabelled specimen = *Odontolabis carinatus* auct. = *Chalcodes carinatus* (L.), vide Didier et Séguy 1953 (p. 91). Linné noted "M.L.U." in his sufficient description, which indicates that the **L.U.** specimen could be regarded as an authentic one.

61. *tridentatus* (1758, p. 354). This is the famous artefact, constructed by some of Linné's pupils and consisting of a *Lucanus cervus*-♀ with an applied prothorax of *Prionus coriarius* (L.) (vide Hagen 1844, p. 70). The "species" should have been seen by Afzelius in the **L.S.** collection (Hagen, l.c.). This curiosity is pleasantly described by the Linné expert Felix Bryk (1943, p. 173).

62. *parallelipipedus* (1758, p. 354). **L.S.**: 3 specimens = *Dorcus parallelipipedus* auct. One specimen unlabelled, one labelled "parallelipipedus", and one "Angl. Jones". The description is sufficient.

63. *caraboides* (1758, p. 354). In the **L.S.** collection: 3 specimens, one of which without label, two labelled "caraboides".

When examining these specimens in London, I never doubted the taxonomical homogeneity of the species *Platycerus caraboides* auct. Later on, the Swedish coleopterist Dr. Thure Palm, Uppsala, wrote me about the Swedish "stock" of *Platycerus*, which should consist of two different species instead of one. He clears up the question (which was first raised by German entomologists) in a paper published simultaneously in this journal (Palm, 1956). I made myself further investigations on the male and female genitalia of Swedish material of *Platycerus caraboides* auct., and *Pl. caraboides* var. *rufipes* Herbst. The results were the same as those obtained by Dr. Palm, and showed two different and well defined species. There arose, however, nomenclatorial problems. Which of the two species based the Linnean description of *Scarabaeus caraboides* 1758? To clear up this question I asked Mr. R. D. Pope, Commonwealth Institute of Entomology, London, to help me with the identification of the Linnean specimens. I also sent some series of "caraboides" and "rufipes" to Mr. Pope for comparison. Mr. Pope very kindly carefully investigated the Linnean specimens, and found that the two labelled specimens (authentic material)

of the Linnean collection correspond well to "*rufipes*". I cite his letter: "... The two labelled specimens differ somewhat, the one from the other, but both seem to me to correspond closely to the series sent by you as '*cribratus* Muls. et Rey'." (It may be mentioned that in my correspondence with Mr. Pope, I used the specific name *cribratus* Muls. et Rey instead of *rufipes* Herbst, in accordance with the "working names" used by Palm, op. c.). Thus, I find it justified to designate one of the labelled Linnean specimens of *caraboides* in the L.S. collection as the lectotype, in order to clear up the nomenclatorial question. I want here to express my deepest gratitude to Mr. R. D. Pope for valuable assistance.

The second problem was: what should be the name of the species *caraboides* auct. part., nec Linné? The oldest name, apart from Linné's *caraboides*, is *caprea* De Geer, 1774, later synonymized under *caraboides* Linné (vide e.g. Didier et Séguéy 1953, p. 169). Dr. Palm has kindly examined the *caprea* specimens in De Geer's collection in Riksmuseum, Stockholm. He found that out of 6 specimens, there are 4 "*caraboides*" auct. part., nec L., and 2 *caraboides* L. (*rufipes* Hbst., ?*cribratus* Muls. et Rey). From De Geer's description (1774, p. 334-335) it is not possible to decide with absolute certainty which species he described. There is, however, a detail that might be used as a separating character, in order to solve the nomenclatorial question. In his diagnosis De Geer writes (l.c.): "... à grandes dents avancées etc. ...", and: "... maxillis magnis exsertis." It is, as a matter of fact, easy to distinguish the two *Platycerus* species on the mandibles (♂); vide Palm, op. c. The figure of *caprea*, made by De Geer (op. c., Pl. 12, fig. 11) supports the opinion that he means the species with the greater, more protruding mandibles. Then this species cannot be the same as the Linnean one. To avoid further confusion, I find it also justified to designate one of the 4 *caprea* specimens mentioned above as the lectotype of this species described by De Geer.

Finally, the species *cribratus* Mulsant et Rey, 1863, should be synonymized with "*caraboides*" (cf. Palm, op. c.). I have not had an opportunity to see any original specimen from the Mulsant-Rey collections, but the description given does not contradict the opinion that *cribratus* should be identical with *caraboides* L. (*rufipes* Hbst.), vide Mulsant and Rey, 1863, p. 7. This, however, is still unsettled.

According to the discussion above, the synonymy of these species runs as follows:

Platycerus caraboides (Linné et auct. part.) (*rufipes* Herbst; ?*cribratus* Muls. et Rey). Lectotype (*caraboides* L.): Linnean Society, London.
Platycerus caprea (De Geer) (*caraboides* auct. part., nec Linné). Lectotype (*caprea* D. G.): Riksmuseum, Stockholm.

II. Results.

The revision has shown that, fortunately, it is only in a few cases that there are any reasons for changes and corrections of the currently used synonymy of the Linnean *Lamellicornia*, described in 1758.

However, it seems impossible to avoid the following changes:

1. *Heliocopris isidis* (Latr.) is identical with *Scarabaeus gigas* L., nec Oliv.
 SYNONYMY: *Heliocopris gigas* (Linné, nec Olivier) (*isidis* Latreille).
 LECTOTYPE (*gigas* L.): Coll. Ludov. Ulr., Zool. Inst. Uppsala.
2. *Heliocopris gigas* (Oliv., nec L.) must have an other name. Bates' *H. colossus* (1868) may be re-established.
 SYNONYMY: *Heliocopris colossus* Bates (*gigas* Olivier, nec Linné).
3. *Macraspis lucida* (Oliv.) is identical with *M. chrysis* (L., nec auct.).
 SYNONYMY: *Macraspis chrysis* (Linné, nec auct.) (*lucida* Olivier).
 LECTOTYPE (*chrysis* L.): Coll. Ludov. Ulr., Zool. Inst. Uppsala.
4. *Macraspis chrysis* auct., nec L., must have a new name. I propose *pseudochrysis* instead of the preoccupied *chrysis*.
 SYNONYMY: *Macraspis pseudochrysis* nov. (*chrysis* auct., nec Linné).

A short description of this species is given:

Length (pygidium not included): 16–18.5 mm.

Width (over the shoulders): 8–10 mm.

Colour: Overside lighter or darker green or olive-green, often with a brownish or cupreous tinge, underside reddish-brown, with a strong green or olivaceous shine. Legs reddish, with a green shine, tarsi black or dark brown. The whole beetle is shiny. Antennae and palpi dark brown, antennal club darker, usually black.

Body more slender than in related species, backwards narrowing (more strongly in ♂).

Head quadrate, densely and finely punctate, clypeus evenly rounded, more coarsely punctate, eyes slightly protruding.

Prothorax wider than long, anteriorly strongly narrowing, very finely and densely, in the middle more sparsely punctate, esp. in ♂.

Elytra without regular striae and ridges, finely and rather densely punctate.

Scutellum almost as long as the suture (but comparatively shorter than in *chrysis* L.), half as wide as one elytron.

Pygidium finely and irregularly transverse-striate, in ♂ more narrowly elongated.

Legs with the hind femora and tibiae dilatate, esp. in ♂. First tarsal joint in the median and hind legs short. The claw pairs all with the distal claw forked.

Underside: Meso-metasternal process straight, apically slightly bent. The

sterna are very finely and sparsely, laterally more densely, punctate, finely transverse-striate, the segments on each side with a transverse row of larger punctures.

Male genitalia, vide Fig. 1, A and B.

Type (♀): Zoological Institute, Lund; *allotypus* (♂), and *paratypi*: Coll. Museum of Natural History (Riksmuseum), Stockholm. Vide Fig. 13.

Geographical distribution (according to Blackwelder 1944, p. 241, "chrysis Linn."): Surinam, Fr. Guiana, Brazil, Perú, Bolivia, Chaco, Argentina.

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