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### Taxonomic and nomenclatural acts formalizing the classification provided in the world catalogue of the Cleonini (Curculionidae: Lixinae)

MASSIMO MEREGALLI

Dept. Life Sciences and Systems Biology - University of Turin, Italy. Via Accademia Albertina 13, 10123 TORINO, ITALY.

E-mail: [massimo.meregalli@unito.it](mailto:massimo.meregalli@unito.it)

Several taxonomic and nomenclatural acts required to formalize the classification provided in the online World Catalogue of the Cleonini are proposed. The genera *Epirrhynchus* Schoenherr, 1826 and *Nomimonyx* Faust, 1904 are excluded from the Lixinae: Cleonini and provisionally referred to the Cyclominae. *Phaulosomus kilimanus* Faust, 1904 is designated as type species of genus *Phaulosomus* Faust, 1904. The lectotype of *Curculio nebulosus* Linnaeus, 1758 is designated. New synonymies are proposed for 20 species, new combinations are proposed for 13 species, 11 species are resurrected from synonymy, 1 subspecies is resurrected from synonymy, 1 species is promoted to species rank from subspecies.

The World Catalogue of the Lixinae: Cleonini (WCC from here on) (Meregalli 2017) is available at <http://weevil.info/content/world-catalogue-curculionidae-lixinae-cleonini>. Even though this online catalogue is not meant to be a taxonomic or phylogenetic revision of the tribe, during its preparation some taxonomic and nomenclatural changes were necessary to more properly accommodate some taxa. The formal taxonomic and nomenclatural acts to validate these changes are proposed in this paper. Since in the past several names had various interpretations, changes, for the Palearctic taxa, refer to the classification provided in the Catalogue of the Palearctic Coleoptera (CPC from here on; Meregalli & Fremuth 2013 for Lixinae: Cleonini). For the extra-Palearctic taxa, changes usually refer to the classification provided by Csiki (1934).

This paper corresponds to the “New nomenclatural and taxonomic acts” published in the CPC to formalize the nomenclatural changes there proposed. Therefore, no detailed discussion or illustrations are here added. The taxonomic and nomenclatural changes in the WCC were based usually on the examination of type specimens, or a critical reading of the descriptions. In the WCC photographs of almost all type specimens are provided, including those of the synonyms (HT = holotype; PT = paratype; ST = syntype; LT = lectotype). Some additional remarks are made, when necessary, to better document the reasons behind the proposed changes.

#### Taxa excluded from the Cleonini

*Epirrhynchus* Schoenherr, 1826 transferred from Lixinae: Cleonini to Cyclominae.

*Nomimonyx* Faust, 1904 transferred from Lixinae: Cleonini to Cyclominae.

**Remarks.** These two closely related genera, or possibly a single genus, with three species [*E. argus* (Sparrmann, 1785), *E. humerosus* Faust, 1904 and *N. perturbans* Faust, 1904] from southern Africa have always been included in the Lixinae: Cleonini, based on their external morphology. However, they differ in the characters of the genitalia: the females do not possess the symbiont pouches associated with the gonocoxites, a synapomorphy of the Lixinae present in all species; moreover, the ovipositor, both gonocoxites and styli, as well as the male sternum VIII have completely different shapes from the Lixinae, and also from the Molytinae. They are provisionally referred to the Curculionidae: Cyclominae, pending research on their affinities. It should be added that these species have not been found since the end of the 19<sup>th</sup> century. Specimens examined are often generically labeled “Cape Province” (or a similar expression, such as “Cap. b. Spe.”), with the exception of two specimens of *N. perturbans* that are labeled “Riversdale” and two of *E. humerosus* respectively labeled “Port Elizabeth” and “Natal”. It seems likely that most of their populations have been wiped out by human settlements and habitat destruction.

## Type species designations

*Phaulosomus kilimanus* Faust, 1904 here designated as type species of genus *Phaulosomus* Faust, 1904.

## Lectotype designations

*Curculio nebulosus* Linnaeus, 1758. As illustrated by The Linnean Society (<http://linnean-online.org/insects.html>), seven specimens are labeled with this name. Four of them (LINN 7737, LINN 7738, LINN 7740 and LINN 7741) belong to the species currently named *Coniocleonus nebulosus* Linnaeus, 1758. The others are *C. excoriatus* (Gyllenhal, 1834) (LINN 7739), *Pseudocleonus cinereus* (Schrank, 1781) (LINN 7742) and *Bothynoderes affinis* (Schrank, 1781) (LINN 7743). The specimen labelled LINN 7737 is here designated as the **Lectotype of *Curculio nebulosus* Linnaeus, 1758.**

## Other nomenclatural and taxonomic acts

*Asproparthenis meridionalis* (Chevrolat, 1873) transferred from synonymy with *A. lusca* (Chevrolat, 1869) to synonymy with *Asproparthenis crotchi* (Chevrolat, 1873) **syn. n.** (ST of each species examined, photographs in WCC).

*Asproparthenis remaudierei* (Hoffmann, 1962) resurrected as **valid species**, from synonymy with *A. punctiventris* (Germar, 1823) **stat. res.** (ST of *A. remaudierei* examined, photograph in WCC).

*Atactogaster dejeani* (Faust, 1904) synonym of *Atactogaster paraleucosomus* (Desbrochers des Loges, 1891) **syn. n.** (based on description of *A. paraleucosomus*; ST of *A. dejeani* examined, photograph in WCC).

*Bothynoderes karakumicus* Bajtenov, 1981 synonym of *Chromonotus (Faustius) menetriesi* Faust, 1884 **syn. n.** (PT of *B. karakumicus* examined, photograph in WCC).

*Bothynoderes richteri* Voss, 1959 synonym of *Chromonotus (Faustius) menetriesi* Faust, 1884 **syn. n.** (HT of *B. richteri* examined, photograph in WCC).

*Brachyrhinus granulatus* Fischer von Waldheim, 1821 transferred to genus *Chromosomus* Motschulsky, 1860 as *Chromosomus granulatus* (Fischer von Waldheim, 1821) from genus *Maximus* Alonso-Zarazaga & Lyal, 2009 **comb. rev.**

*Cleonus fischeri* Fåhraeus, 1842 synonym of *Chromosomus granulatus* (Fischer von Waldheim, 1821) **syn. n.**; consequently, *Cleonus rugifer* Motschulsky, 1845, formerly synonym of *C. fischeri*, is now synonym of *Chromosomus granulatus* **syn. n.**

*Maximus verrucosus* (Gebler, 1829) resurrected as **valid species** from synonymy with *Brachyrhinus granulatus* Fischer von Waldheim, 1821 **stat. res.** (LT of *M. verrucosus* examined, photograph in WCC).

**Remarks.** *Chromosomus fischeri* (Fåhraeus, 1842) is a name currently used for a well-known species widespread in central Asia. However, it has a senior synonym, *Brachyrhinus granulatus* Fischer von Waldheim, 1821. The synonymy between *B. granulatus* and *C. fischeri* has been generally recognized, at least since Faust (1904: 208) but, for unknown reasons, the correct priority was never adopted. In CPC *B. granulatus* was erroneously referred to the genus *Maximus*, as the senior synonym of *M. verrucosus*.

*Chromonotus (Chevrolatius) striolatus* (Gebler, 1829) resurrected as **valid species** from synonymy with *C. bipunctatus* (Zoubkoff, 1829) **stat. res.** (LT of *C. striolatus* examined, photograph in WCC).

*Chromonotus (Chromonotus) zaisanensis* Legalov, 1999 synonym of *Chromonotus (Chromonotus) beicki* Günther, 1937 **syn. n.** (ST of *C. beicki* and PT of *C. zaisanensis* examined, photographs in WCC).

*Cleonus bisignatus* Roelofs, 1873 transferred to genus *Atactogaster* Faust, 1904 as synonym of *Atactogaster inducens* (Walker, 1859), as in Csiki (1934), from valid species in genus *Cyphocleonus* Motschulsky, 1860 as indicated by Egorov (1976) **comb. rev., syn. rev.** (ST of *C. bisignatus* examined, photograph in WCC).

*Cleonus oculiventris* Quedenfeldt, 1888, formerly considered species *incertae sedis* (Csiki 1934), transferred to genus *Neocleonus* Chevrolat, 1872 as synonym of *Neocleonus maculipes* (Gyllenhal, 1834) **comb. n., syn. n.** (ST of both species examined).

*Cleonus ovulum* Quedenfeldt, 1888, formerly considered species *incertae sedis* (Csiki 1934), transferred to genus *Calodemus* Faust, 1904 as *Calodemus ovulum* (Quedenfeldt, 1888) **comb. n.** (based on description).

*Coniooleonus* (*Coniooleonus*) *ferrugineus* (Fåhraeus, 1842) resurrected as **valid species** from synonymy with *C. alpinus* (Gebler, 1833) **stat. res.** (ST of *C. ferrugineus* and LT of *C. alpinus* examined, photographs in WCC).

*Coniooleonus alpinus* (Gebler, 1833) and *C. vinokurovi* Ter-Minasyan & Korotyaev, 1977, formerly in subgenus *Angarocleonus* Arzanov, 2006, referred to **subgenus Coniooleonus** (LT of *C. alpinus* and HT of *C. vinokurovi* examined, photographs in WCC).

*Conorhynchus conirostris* (Gebler, 1829) resurrected as **valid species** from synonymy with *C. pulverulentus* (Zubkov, 1829) **stat. res.** and *C. pulverulentus* (Zubkov, 1829) synonym of *Conorhynchus conirostris* (Gebler, 1829) **syn. rev.**

**Remarks.** The paper by Gebler (1829), formerly considered to have been published in 1830, and dated as such on the first page, actually appeared on October 4, 1829 (Schmitt 2017 and Alonso-Zarazaga, personal communication). The paper by Zubkov (1829) was surely printed after November 1, 1829 (date of the printing permit as reported on the second page). In the past, *C. pulverulentus* was considered a variety of *C. conirostris*. In 2013 Gebler's paper was thought having been published in 1830, and therefore in the CPC *C. pulverulentus* was used with priority over *C. conirostris*, but now the former use of *C. conirostris* has to be resurrected. A few other names in Cleonini are affected by this reversal of priority. However, in these cases Gebler's names were never used as valid (even at infraspecific rank). Therefore, pending further research on the possible application of Art. 23.9, or alternatively to propose the conservation of Zubkov's names to the International Commission on Zoological Nomenclature, the present day status is maintained (each case is indicated in WCC under the respective genus).

*Cosmogaster* (*Arabocleonus*) *medvedevi* Arzanov, 2009 synonym of *Cosmogaster* (*Arabocleonus*) *dealbata* (Germar, 1834) **syn. n.** (topotypical specimen of *A. medvedevi* examined, photograph in WCC).

*Cosmogaster* (*Arabocleonus*) *dealbata venusta* (Walker, 1871) synonym of *Cosmogaster* (*Arabocleonus*) *dealbata* (Germar, 1834) as (doubtfully) in Csiki (1934) **syn. rev.** (topotypical specimen of *C. dealbata venusta* examined, photograph in WCC).

*Curculio omogeron* Herbst, 1797 **valid species** in genus *Xanthochelus* Chevrolat, 1872, from homonym of *C. omogeron* Lichtenstein, 1796. The latter name was published in a paper that has been suppressed for nomenclatural purposes (Opinion 1820 by the International Commission on Zoological Nomenclature). As a consequence, since Art. 23.9 cannot be applied, *Xanthochelus ewersmanni* (Fåhraeus, 1842) becomes a synonym of *Xanthochelus omogeron* (Herbst, 1797) **syn. n.**

*Entymetopus* (*Sforzia*) *pilosus* (Chevrolat, 1873) resurrected as **valid species** from synonymy with *E. limis* (Ménétriés, 1849) **stat. res.** (LT of *E. pilosus* examined, photograph in WCC).

*Epexochus mongolicus* Meregalli & Talamelli, 2009 objective synonym of *Epexochus consobrinus* (Ter-Minasyan, 1972) **syn. n.**

**Remarks.** Ter-Minasyan (1972) used the name *Leucochromus consobrinus* Faust, 1904 for a specimen from Mongolia, that nevertheless she described and labeled as "holotype" of *L. consobrinus* Faust. Faust (1904) had used the name *Leucochromus lehmanni* var. *consobrinus* for specimens from Aulie Ata, in Kazakhstan, sympatric with the type form but characterized by the lighter colour (Faust 1904: 191–192). The name is therefore infrasubspecific. Faust indeed had combined *Cleonus lehmanni* Ménétriés, 1849 and its variety *consobrinus* twice, once in *Leucochromus* and the second time in *Epilectus* (= *Epexochus*) (Faust 1904: 208). During the preparation of his monograph he probably recognized that the species does not belong to *Leucochromus*, and recombined it in *Epilectus*, without deleting the entry in *Leucochromus*. The editor of the Deutsche Entomologische Zeitschrift, who managed the publication of Faust's work after his death, did not notice the double appearance of these names. In the catalogue of the species (Faust 1904: 265) *lehmanni* and its variety are only listed in *Epilectus*. Meregalli & Talamelli (2009) erroneously considered Ter-Minasyan (1972) to have made Faust's name available for the population from Aulie Ata, according to Art. 45.6.4.1, and used Ter-Minasyan's specimen from Mongolia as the holotype of *E. mongolicus* Meregalli & Talamelli, 2009. Indeed, according

to Art. 45.5.1, Ter-Minasyan had validly, though inadvertently, described a new species as *Leucochromus consobrinus* Ter-Minasyan, 1972.

*Gonocleonus amenokal* (Peyerimhoff, 1931) upgraded to **species rank** from subspecies of *G. insignis* (Desbrochers des Loges, 1875) **stat. prom.** (ST of both species examined, photographs in WCC).

*Gonocleonus angulatus* Chevrolat, 1873 resurrected as **valid species** from synonymy with *G. margaritiferus* (Lucas, 1844) **stat. res.** and *G. furcifrons* (Marseul, 1876) transferred from synonymy with *G. margaritiferus* to synonymy with *Gonocleonus angulatus* **syn. n.** (ST of both *G. angulatus* and *G. furcifrons* examined, photographs in WCC).

*Gonocleonus foveatus* Faust, 1904 resurrected as **valid species** from synonymy with *G. munieri* (Bedel, 1875) **stat. res.** (ST of both species examined, photographs in WCC).

*Gonocleonus multicostatus* Chevrolat, 1876 transferred from synonymy with *G. munieri* (Bedel, 1875) to synonymy with *Gonocleonus heros* (Chevrolat, 1876) **syn. n.** (HT of *G. multicostatus* and ST of *G. munieri* examined, photograph in WCC).

*Gonocleonus scabrithorax* Desbrochers des Loges, 1898 transferred to **genus Coniocleonus** Motschulsky, 1860 as synonym of *Coniocleonus (Plagiographus) variolosus* (Wollaston, 1864) **comb. n., syn. n.** (based on description).

*Maximus leucophaeus* (Ménétriés, 1849) transferred to **genus Asproparthenis** Gozis, 1886 as *Asproparthenis leucophaea* (Ménétriés, 1849) **comb. n.** (ST examined, photograph in WCC).

*Mecaspis caesimvirgata* Arnol'di, 1956 transferred to **genus Georginus** Jakobson, 1913 as *Georginus caesimvirgatus* (Arnol'di, 1956) **comb. n.** (ST examined, photograph in WCC).

*Mecaspis pallasii* (Fåhraeus, 1842) transferred to **genus Georginus** as *Georginus pallasii* (Fåhraeus, 1842) **comb. n.** (ST examined, photograph in WCC).

*Meneleonus anxius* (Gyllenhal, 1834) transferred from synonymy with *M. virgatus* (Schoenherr, 1832) to synonymy with *Meneleonus signaticollis* (Gyllenhal, 1834) **syn. n.**

*Meneleonus simplicirostris* (Chevrolat, 1873) transferred from synonymy with *M. virgatus* (Schoenherr, 1832) to synonymy with *Meneleonus signaticollis* (Gyllenhal, 1834) **syn. n.** (ST of *M. simplicirostris* examined, photograph in WCC).

**Remarks.** *Meneleonus signaticollis* and *M. anxius* were both described from Persia, whereas *M. virgatus* was described from Caucasus. All specimens examined from Caucasus differ from those from Persia in the key-characters cited by Faust (1904) for the distinction between the two species. It seems thus that the two taxa are geographical allopatric vicariants.

*Microcleonus sedakoffi* (Boheman, 1842) synonym of *Microcleonus panderi* (Fischer von Waldheim, 1835), as in Csiki (1934) **syn. rev.** (ST of *M. sedakoffi* examined, photograph in WCC).

*Neocleonus maculipes* (Gyllenhal, 1834) resurrected as **valid species** from synonymy with *N. sannio* (Herbst, 1795) **stat. res.** (ST examined); *N. coquereli* Chevrolat, 1873, *N. frater* Chevrolat, 1873, *N. sannio modestus* Faust, 1904, *N. sordidus* Chevrolat, 1873, *N. subsignatus* (Walker, 1871) transferred from synonymy with *N. sannio* to synonymy with *Neocleonus maculipes* **syn. n.** (based on types or type locality, photographs in WCC).

*Neocleonus sannio ripicola* Voss, 1962 synonym of *Atactogaster affixa* (Faust, 1894) **syn. n.** (HT of *N. sannio ripicola* and ST of *A. affixa* examined).

*Neocleonus trifasciatus* Chevrolat, 1873, formerly considered synonym of *Neocleonus sannio* (Csiki 1934), transferred to **genus Calodemus** Faust, 1904 as *Calodemus trifasciatum* (Chevrolat, 1873) **valid species; comb. n., stat. res.** (ST examined, photograph in WCC).

*Pachycerus blucheaui* Fairmaire, 1898 transferred to genus *Centrocleonus* Chevrolat, 1872 as *C. blucheaui* (Fairmaire, 1898) comb. n. (ST examined, photograph in WCC).

*Pachycerus granulatus* (Olivier, 1807) transferred to genus *Prionorhinus* Chevrolat, 1872 as *P. granulatus* (Olivier, 1807) comb. n. (ST examined, photograph in WCC).

*Paraleucochromus* Obst, 1908 synonym of *Stephanocleonus* Motschulsky, 1860 syn. n.; consequently, *P. pleurocleonoides* Obst, 1908 transferred to genus *Stephanocleonus* as *Stephanocleonus pleurocleonoides* (Obst, 1908) comb. n.

**Remarks.** According to the description, the type of *P. pleurocleonoides* Obst, 1908 should be conserved at ZHMB. Unfortunately, it was not found there, so it is presumably lost, or mislabeled and thus not recognizable anymore. Hence, it was not possible to ascertain its precise identity, but, based on the description and the original drawing, there are no doubts that it belongs to the genus *Stephanocleonus*. It is probably a synonym of a Chinese species of *Stephanocleonus*, but in absence of the type no specific identification can be proposed.

*Pseudocleonus (Pseudocleonus) theryi* Hustache, 1931 synonym of *Pseudocleonus parallelus* Escalera, 1914, syn. n. (ST of *P. theryi* and HT of *P. parallelus* examined, photographs in WCC).

*Pycnodactylopsis ephippium* (Faust, 1904) resurrected to subspecies of *Pycnodactylopsis tomentosa* (Fåhraeus, 1842) from synonymy with *P. tomentosa* stat. res. (ST of *P. ephippium* examined, photograph in WCC).

*Stephanocleonus acerbus* Faust, 1904 transferred to genus *Calodemus* Faust, 1904 as *Calodemus acerbus* (Faust, 1904) comb. n. (ST examined, photograph in WCC).

*Stephanocleonus nasutus* Ballion, 1878, formerly considered species *incertae sedis* (Csiki 1934), reinstated in genus *Stephanocleonus* as *Stephanocleonus (Stephanocleonus) nasutus* Ballion, 1878 comb. rev. (based on description).

*Stephanocleonus parshus* Anderson, 1987 transferred to genus *Coniocleonus* Motschulsky, 1860 as *Coniocleonus (Angarocleonus) parshus* (Anderson, 1987) comb. n. (PT examined, photograph in WCC).

*Stephanocleonus plumbeus* Leconte, 1876 transferred to genus *Coniocleonus* as *Coniocleonus (Angarocleonus) plumbeus* (Leconte, 1876) comb. n. (based on description).

*Tennorhinus rungsi* (Hoffmann, 1938) resurrected as valid species from synonym of *T. mixtus* (Fabricius, 1792) stat. res. (ST of *T. rungsi* examined, photograph in WCC).

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