

Checklist and bibliography of the Gymnopleurini (Coleoptera: Scarabaeidae: Scarabaeinae)

Jiří ZÍDEK

jrzidek@gmail.com

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Abstract. Presented are a checklist of the tribe Gymnopleurini (Coleoptera: Scarabaeidae: Scarabaeinae) including synonyms, geographic distributions and type repositories where known; a table of valid species by genera; and bibliography that includes citations of all papers containing original descriptions and supplemental literature on various other aspects of the tribe.

INTRODUCTION

Janssens (1940) revised the tribe Gymnopleurini Lacordaire, 1856, in addition to *Gymnopleurus* Illiger, 1803 and *Paragymnopleurus* Shipp, 1897 described the genera *Allogymnopleurus* and *Garreta*, provided keys and synonymies for each genus and species, placed 44 species in *Gymnopleurus* s. str., and left out from the key to species and assignment to genus *G. atratus* Klug, 1845, *G. barovskyi* Kieseritzky, 1928, *G. laetus* Hope, 1842 and *G. singularis* Waterhouse, 1890, which he was not able to examine. He suspected *G. singularis* of being *Paragymnopleurus*, which was subsequently supported by Balthasar (1963b) and verified by Pokorný & Zídek's (2014) examination of BMNH types; it is a synonym of *Paragymnopleurus maurus* (Sharp, 1875). Of the remaining three species *Gymnopleurus laetus* Hope is *Garreta* (see Moretto & Génier 2015), *G. barovskyi* Kieseritzky is a synonym of *Gymnopleurus flagellatus* (Fabricius, 1787) (see Kabakov 2006: 73-74), and *Gymnopleurus atratus* Klug is valid. Ferreira (1972: 123) included in *Gymnopleurus* s. str. also *G. zavattarii* Müller, 1941, which has since been shown to be *Allogymnopleurus* (see Pokorný & Zídek 2009: 145). One species of *Garreta* and 11 species of *Gymnopleurus*, 10 of them presently deemed valid, have been described subsequent to the 1940 revision (Müller 1941, Ferreira 1954a, Petrovitz 1955, Balthasar 1960, 1963a, Endrődi 1976, Davis 1986, Schäfer & Fischer 2001, Montreuil 2009, 2011, Pokorný & Zídek 2018). In addition, Kabakov (2006) proposed the subgenus *Metagymnopleurus* of *Gymnopleurus* for 10 partially to fully pubescent and mostly iridescent species with narrow elytral emarginations, in which an arcuate double-crested keel visible in dorsal view connects the front and hind upper corners of the first ventrite, and whose parameres have reduced tips and overlap left over right. The included species are denoted as such in the checklist. This subgenus is well defined, and it is possible that more species will prove to belong in it.

Gymnopleurus (55 spp.) is the most speciose genus comprised of mostly smaller species, some of them iridescent and brightly colored. Nearly three-quarters of the species (36) are Afrotropical, with eight or nine of them extending north into the Palearctic saharan Africa and three reaching southern Europe. Of the 16 Asian species three occur also in Europe and 11 are known from the Indian subcontinent (Oriental region), with two reaching east into Bangladesh and four south into Sri Lanka. In the more northern Palearctic subregion the easternmost species is *G. mopsus* (Pallas, 1781) recorded from South Korea (Kim 2000: 48). No records are known from Southeast Asia where *Gymnopleurus* is replaced by *Paragymnopleurus* (12 spp.), which contains some of

the largest members of the tribe, up to 24 mm in length. Because most of the species of *Paragymnopleurus* extend from the continent onto the islands of Indonesia and western Philippines (Palawan) or are known only from islands, they form isolated populations some of which have been recognized as subspecies. *Allogymnopleurus* (18 spp.) is a prevalently African genus with only two Asian (ne. India) species, whereas species of *Garreta* (24 spp.) are more evenly distributed between Africa (14 spp.) and Asia (10 spp.). For convenience, Table 1 at the end of the checklist shows only the valid species by genus.

The checklist is based on recent reviews of *Allogymnopleurus*, *Paragymnopleurus* and *Garreta* (Pokorný & Zídek 2009, 2014, 2016, 2018) and on an ongoing study of *Gymnopleurus*. Of the 246 entries in the checklist only 109 are deemed valid species, the others are synonyms, infrasubspecific categories in the sense of ICZN (1999) Article 45.6.2 (aberration, race), varieties, and in a few instances subspecies of unsettled status. Due to their pre-1961 vintage, the varieties must also be regarded as of subspecific rank (ICZN 1999, Article 45.6.4). However, here they are treated as synonyms of the nominotypical taxa because they concern iridescent species in which temperature-induced changes in ultrastructure of the exocuticle result in altered reflected colors (Davis et al. 2008 and references therein) but morphology remains the same or within the limits of intraspecific variation. *Gymnopleurus somaliensis* Lansberge, 1882 was described twice, and the 1882a paper in which the species is presented as new is considered to be the more appropriate reference. *Gymnopleurus corruscans*, ascribed by Shipp (1897) to Wiedemann, is nowhere to be found in Wiedemann's works and is excluded from the checklist as an unpublished name or a lapsus. Some of the names in Janssens' (1940) synonymies that look like homonyms are also left out, because the literature reveals them to be merely references to taxa previously described by other authors. Not all type repositories could be identified, for instance according to Janssens (1940) some of Mulsant's types should be at the Sainte-Marie Institut in Chamond, France, but their whereabouts could not be verified and that institute is therefore left out. However, all names that lack type repositories are long-recognized synonyms, for all those deemed valid the type repositories have been identified.

Distributions of gymnopleurine species are based on Janssens' (1940) revision, subsequent reviews of genera (Pokorný & Zídek 2009, 2014, 2016, 2018, Moretto & Génier 2015), and regional studies. The coverage is necessarily uneven, good for the Indian subcontinent (Mittal & Jain 2015), Iran and Iraq (Montreuil 2009, 2011), Russia and adjacent countries (Kabakov 2006) and the Arabian Peninsula, namely UAE (Král & Batelka 2017), and weak for large parts of the sub-Saharan Africa, from where specimens are mostly old and poorly labeled.

MATERIAL AND METHODS

Collections housing type and other specimens pertinent to this study are identified by the following codens, chiefly after Arnett et al. (1993):

BMNH	Natural History Museum, London, UK;
ETHZ	Eidgenössische Technische Hochschule Zürich, Switzerland;
HMUG	Hunterian Museum, University of Glasgow, UK;
HNHM	Hungarian Natural History Museum, Budapest, Hungary;
INPC	National Pusa Collections, New Delhi, India;
ISNB	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium;
MCST	Museo Civico di Storia Naturale, Trieste, Italy;
MAMU	MacLeay Museum, University of Sydney, NSW, Australia;
MHNG	Muséum d'Histoire Naturelle, Geneva, Switzerland;

MNHB	Museum für Naturkunde Leibniz-Institut, Berlin, Germany;
MNHN	Muséum National d'Histoire Naturelle, Paris, France;
MRAC	Musée Royal de l'Afrique Centrale, Tervuren, Belgium;
MSNT	Museo Civico di Storia Naturale di Trieste, Italy;
NHMB	Naturhistorisches Museum, Basel, Switzerland;
NHMW	Naturhistorisches Museum, Vienna, Austria;
NHRS	Naturhistoriska Riksmuseet, Stockholm, Sweden;
NMPC	National Museum (Natural History), Prague, Czech Republic;
NSMT	National Science Museum (Natural History), Tokyo, Japan;
ONUM	Odessa National University Museum, Odessa, Russia;
OXUM	Oxford University Museum of Natural History, Oxford, UK;
RMNH	Nationaal Natuurhistorische Museum, Leiden, The Netherlands;
SAMC	South African Museum, Cape Town, RSA;
SMTD	Staatliches Museum für Tierkunde, Dresden, Germany;
TMSA	Ditsong National Museum of Natural History, Pretoria, RSA;
ZMAS	Zoological Museum, Academy of Sciences, St. Petersburg, Russia;
ZMUC	Universitets Zoologisk Museum, Copenhagen, Denmark;
ZMUH	Zoologisches Institut und Museum Universität Hamburg, Germany;
ZMUM	Zoological Museum of Moscow University, Russia;
ZSMC	Zoologische Sammlung des Bayerischen Staaten, Munich, Germany.

Other abbreviations:

CAR = Central African Republic, DRC = Democratic Republic of the Congo, RC = Republic of the Congo, RSA = Republic of South Africa, UAE = United Arab Emirates.

CHECKLIST

Genus-group Taxa

Allogymnopleurus Janssens, 1940: 9; type species *Gymnopleurus chloris* Klug, by original designation.

Garreta Janssens, 1940: 9, 22; type species *Ateuchus azureus* Fabricius, by original designation (Janssens 1940: 22, as *Scarabaeus azureus*).

Gymnopleurus Illiger, 1803: 199; type species *Scarabaeus geoffroyi* Fuesslins, 1775 originally cited as *Scarabaeus pilularius* Fabricius, 1801, by subsequent designation (Reiche 1841: 212, see Branco 2007: 12-13).

Syn. **Spinigymnopleurus** Shipp, 1897: 168; type species *Gymnopleurus tristis* Castelnau, by original designation.

Syn. **Progymnopleurus** Garreta, 1914a: 52; type species *Copris sinuatus* Geoffroy, by original designation.

Subgenus **Metagymnopleurus** Kabakov, 2006: 78; type species *Scarabaeus miliaris* Fabricius, by original designation.

Paragymnopleurus Shipp, 1897: 166; type species *Scarabaeus sinuatus* Olivier, by original designation.

Syn. **Progymnopleurus** Garreta, 1914a: 52; type species *Scarabaeus sinuatus* Olivier (see Janssens 1940: 5).

Species-group Taxa

Abbreviations: **AL** = *Allogymnopleurus* Janssens, **GA** = *Garreta* Janssens, **GY** = *Gymnopleurus* Illiger, **GY(MG)** = subgenus *Metagymnopleurus* Kabakov, **PA** = *Paragymnopleurus* Shipp.

Invalid names are preceded by m-dashes, subspecies are denoted by asterisks.

* *abax* (Sharp, 1875: 39), as sp. of GY; MNHN; Cambodia; = ssp. of *sinuatus* – *abyssinicus* Müller, 1941: 335, as ssp. of *sericeifrons*; MSNT, = *sericeifrons*

- aciculatus* Gebler, 1841: 372; **GY**; ZMAS; Caucasus, Transcaspia, Kyrgyzstan, Turkmenistan, ne. Iran, n. Afghanistan, China (Xinjiang).
- aeneipes* Fairmaire, 1893: 147; MNHN; = *sericeifrons*
- aenescens* Wiedemann, 1821: 128; **GY**; ZMUH; Botswana, Mozambique, Namibia, RSA.
- aeneus* (Harold, 1875: 453), as GY; **AL**; MNHN; Ghana, Liberia, Mauritania, Senegal, Tanzania.
- aeruginosus* Harold, 1867: 94; **GY**; MNHN; Egypt, Libya, Sudan.
- aethiops* (Sharp, 1875: 34); MNHN; = *melanarius*
- affinis* (MacLeay, 1821: 515), as *Scarabaeus*; BMNH; = *coerulescens*
- alluaudi* (Garreta, 1914b: 412), as GY (PA); **AL**; MNHN; Burundi, DRC, Kenya, Rwanda, Uganda.
- ambiguus* Janssens, 1943b: 1; **PA**; ISNB; Taiwan.
- andreaei* Ferreira, 1954a: 1; **GY**; SAMC; RSA (Cape).
- anthracinus* (Klug, 1845: pl. 41.7), as GY; **AL**; MNHB; Arabia, Djibouti, Ethiopia, Sudan.
- arabs* Garreta, 1914b: 357; MNHN; = *persianus*
- * *arnoldi* Krikken & Huijbregts, 1987: 3; RMNH; Sumatra; = ssp. of *sparsus*
- * *asperatus* Mulsant, 1842: 58, as var. of *flagellatus*, stat. n. Montreuil 2011; MNHN; ssp. of *flagellatus*
- asperrimus* Felsche, 1909: 751; **GY**; SMTD; Namibia, RSA (Cape).
- * *assamensis* (Waterhouse, 1890b: 411), as sp. of GY; BMNH; Burma, China, India (Arunachal Pradesh, Nagaland, Uttarakhand, W. Bengal), Nepal; = ssp. of *sinuatus*
- atratulus* Motschulsky, 1849: 100; ZMUM; = *geoffroyi*
- atratus* Klug, 1845, pl. 41.4; **GY**; MNHB; Arabia.
- atronitidus* (MacLeay, 1821: 513), as *Scarabaeus*; BMNH; = *sturmii*
- atrovirens* Kolbe, 1895: 335; MNHB; = *jacksoni*
- azureus* (Fabricius, 1801: 57), as *Ateuchus*; **GA**; ZMUC; Angola, Burundi, Cameroon, DRC, Eritrea, Ethiopia, Gambia, Ghana, Kenya, Mozambique, RSA (Natal), Rwanda, Sierra Leone, Tanzania, Uganda, Zimbabwe.
- azureus* Ferreira, 1954b: 2, as var. of *humanus*; TMSA; = *humanus*
- barovskyi* Kieseritzky, 1928: 46; ZMAS; = *flagellatus*
- basilewskyi* Balthasar, 1961: 96, as GY (GA); MRAC, NMPC; = *crenulatus*
- bechynei* Pokorný & Zídek, 2018: 96; **GA**; NMPC; Guinea.
- benadiensis* Müller, 1941: 334, as ssp. of *laevicollis*; MSNT; = *laevicollis* Cast.
- bicallosus* Felsche, 1909: 751; **GY(MG)**; SMTD; Afghanistan, Pakistan, India ('Assam', Rajasthan).
- bicolor* Latreille, 1827: 11(=281); **GY(MG)**; MNHN; Chad, Ethiopia, Sudan.
- bicolor* Castelnau, 1840: 72; MNHN, OXUM (Hope Coll., syntype?); = *leei*
- bidentatus* Mulsant, 1842: 55; = *geoffroyi*
- biharensis* Arrow, 1931: 62; **GY**; BMNH; India (Bihar).
- bocandei* (Waterhouse, 1890a: 368), as GY; BMNH; = *umbrinus*
- bombayensis* Arrow, 1931: 65; **GY**; BMNH; India (Karnataka, 'Kashmir'), Pakistan.
- brahminus* (Waterhouse, 1890b: 411), as GY; **PA**; BMNH; China (Fujian, Shanghai, Sichuan, Zhejiang), n. Vietnam.
- bufo* (MacLeay, 1821: 514), as *Scarabaeus*; BMNH; = *aenescens*
- caelatus* Wiedemann, 1821: 127; ZMUH; = *leei*
- caffer* (Fähraeus, 1857: 181), as GY; **GA**; NHRS; Angola, Namibia, RSA, Tanzania.
- calcar* (Sharp, 1875: 36), as GY; MNHN; = *planus*
- * *caliginosus* Balthasar, 1934: 148, stat. n. Montreuil 2011; NMPC; ssp. of *flagellatus*
- cantharus* Illiger, 1803: 201; = *geoffroyi*
- capensis* Ferreira, 1954b: 1, as var. of *aenescens*; = **aenescens**
- capicola* (Castelnau, 1840: 70), as GY; MNHN, OXUM (Hope Coll.); = *mundus*
- castanonota* Seabra, 1907: 70; = *mopus*
- celebicus* (Sharp, 1875: 37), as GY; MNHN; = *planus*
- centralis* Bates, 1890: 482; as var. of *coerulescens*; MNHN, BMNH?; = *coerulescens*
- cherenicus* Müller, 1941: 336; as ssp. of *kuntzeni*; MSNT; = *laevicollis* Cast.
- chloris* (Klug, 1855: 650), as GY; MNHB; = *splendidus*

- chlorophanus Müller, 1941: 335; as var. of ssp. *abyssinicus*; MSNT; = *sericeifrons*
 –*clypeolatus* Mulsant, 1842: 57; = *flagellatus*
 –*coeruleovirens* (Kolbe, 1897: 138), as var. of GY *splendens*; GA; MNHB; = *nitens*
coerulescens (Olivier, 1789: 189), as *Scarabaeus*; **GY(MG)**; MNHN; DRC, Sudan.
colmantii Janssens, 1938, 39, 56; **GY**; MRAC; DRC.
 –*confagratius* Motschulsky, 1849: 102, as var. of *flagellatus*; ZMUM; = *flagellatus*
 –*confusus* Mulsant, 1842: 57; = *flagellatus*
 –*consanguineus* (Kolbe, 1895: 334), as GY; GA; MNHB; = *malleolus*
consocius (Péringuay, 1901: 66, 68), as GY; **AL**; SAMC; RSA (Transvaal).
 –*convexusculus* Motschulsky, 1849: 101; ZMUM; = *sturmii*
 –*coracinus* (Fåhraeus, 1857: 185), as GY; NHRS; = *splendidus*
 –*coriarius* (Herbst, 1789: 309), as *Scarabaeus*; = *flagellatus*
crenulatus (Kolbe, 1895: 333), as GY; **GA**; MNHB; DRC, Ghana, Rwanda, Sudan, Uganda.
 –*cribellatus* Motschulsky, 1849: 102, as var. of *flagellatus*; ZMUM; = *flagellatus*
 –*cuprarius* Kolbe, 1914: 320, as var. of *sericeifrons*; MNHB; = *sericeifrons*
 –*cupreovirens* (Kolbe, 1895: 333), as GY; MNHB; = *laetus*
 –*cupreus* Fåhraeus, 1857: 189; NHRS; = *aenescens*
 –*cupreus* (Kolbe, 1914: 318), as var. of GY *azureus*; ISBN; = *laetus*
 –*cyanescens* Motschulsky, 1849: 101; ZMUM; = *geoffroyi*
 –*cyanescens* (Roth, 1851: 123), as GY; ZSMC; = *indigaceus*
cyaneus (Fabricius, 1798: 34), as *Copris*; GY; ZMUC; Bangladesh, India (Andhra Pradesh, Chandigarh, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand, W. Bengal), Nepal, Sri Lanka.
 –*cyaneus* Kolbe, 1914: 320, as var. of *sericeifrons*; MNHB; = *sericeifrons*
 –*cyanicollis* Ferreira, 1954b: 205, as var. of *signaticollis*; SAMC; = *signaticollis*
dejeanii (Castelnau, 1840: 70), as GY; **GA**; MNHN? (type not found); India (Chhattisgarh, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttarakhand).
 –*delagorguei* (Waterhouse, 1890: 370), as GY; BMNH; = *unicolor*
diffinis (Waterhouse, 1890: 372), as GY; **GA**; BMNH; sw. DRC, Gabon, Gambia, Senegal.
 –*djibiticus* Balthasar, 1956: 15, as ab. of *plicatulus*; NMPC; = *plicatulus*
 –*dorsalis* Mulsant, 1842: 55; = *mopsis*
 –*dubius* (Sharp, 1875: 36), as GY; MNHN; = *planus*
 –*ebenus* (Janssens, 1938: 43, 59), as var. of GY (PA) *azureus*; ISBN; = *laetus*
elegans Klug, 1845: pl. 41.6; **GY**; MNHB; Arabian Peninsula (Oman, Saudi Arabia, UAE, Yemen).
 –*exanthema* (Wiedemann, 1823: 22), as GY; ZMUC; = *maculosus*
fastiditus (Harold, 1867: 74), as GY; **GA**; MNHN; Mozambique, RSA, Zimbabwe.
flagellatus (Fabricius, 1787: 17), as *Scarabaeus*; **GY**; ZMUC; s. Europe, n. Africa, Israel, Syria, Caucasus, Armenia, Iran, Afghanistan, Pakistan, c. Asia, n. India (Jammu & Kashmir), w. China, w. Mongolia.
foricarius Garreta, 1914b: 357; **GY**; MNHN; Ethiopia.
fulgidus (Olivier, 1789: 167), as *Scarabaeus*; **GY(MG)**; MNHN; DRC, Gambia, Ghana, Guinea, Mauritania, Rwanda, Senegal, Somalia, Sudan, Tanzania.
gemmatus Harold, 1871: 117; **GY(MG)**; MNHN, Afghanistan, India (Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Pondicherry, Tamil Nadu, Uttarakhand, W. Bengal), Sri Lanka.
geoffroyi (Fuesslins, 1775: 2), as *Scarabaeus geofroae*; GY; ETHZ; c.+ s. Europe, n. Africa, Cyprus, Asia Minor, Armenia, Iran.
 –*gibbosus* Roth, 1851: 123; ZSMC; = *virens*
gilleti (Garreta, 1914b: 412), as GY; **GA**; MNHN; India (Uttar Pradesh), Thailand?, Vietnam?
 –*glabriusculus* Mulsant, 1842: 55; = *sturmii*
 –*gracilipes* (Kolbe, 1897: 138), as var. of GY *splendens*; MNHB; = *nitens*
 –*granulatus* (Fabricius, 1792: 65), as *Scarabaeus*; ZMUC; = *gemma*
 –*guttatus* (Gmelin, 1790: 1558), as *Scarabaeus*; = *koenigii*
 –*hilaris* (Hope, 1842: 494), as GY; OXUM; = *nitens*

- hildebrandti* (Harold, 1875a: 218), as GY; MNHN; = *anthracinus*
- histrio* Balthasar, 1963b: 287, as GY (AL); **AL**; NMPC; Djibouti, Kenya, Tanzania.
- * *hornei* Waterhouse, 1890b: 410, stat. n. Montreuil 2011; BMNH; ssp. of *flagellatus*
- hortobagyensis* Papp, 1943: 453; = *mopsus*
- humanus* (MacLeay, 1821: 514), as *Scarabaeus*; **GY**; BMNH; sw. Angola, Namibia, RSA (Cape). [Putative syntypes in the Burchell Coll., OXUM.]
- humeralis* Klug, 1855: 650; MNHB; = *humanus*
- hypocrita* Balthasar, 1960: 88; **GY(MG)**; NMPC; India (Orissa).
- ignitus* Klug, 1855: 650; **GY**; MNHB; Angola, Botswana, DRC, Kenya, Mozambique, Namibia, RC, Tanzania, Zimbabwe.
- imitator* Balthasar, 1963b: 284, 285; **GY**; NMPC; Namibia.
- impressus* Castelnau, 1840: 73; OXUM (ex Gory Coll.); = *cyanescens* Fab.
- inconspicuus* (Waterhouse, 1890a: 371), as GY; BMNH; = *dejeanii*
- indicus* Castelnau, 1840: 73; OXUM (Hope Coll.); = *cyanescens* Fab.
- indigaceus* (Reiche, 1847: 306), as GY; **AL**; MNHN; Ethiopia, Kenya.
- indistinctus* Mulsant, 1842: 55; = *mopsus*
- infranitens* (Fairmaire, 1887: 108), as GY; **AL**; MNHN; Somalia.
- insidiosus* (Péringuier, 1901: 66, 69), as GY; SAMC; = *laetus*
- jacksoni* Waterhouse, 1890a: 370; **GY**; BMNH; DRC, Tanzania.
- janssensi* Schäfer & Fischer, 2001: 22; **GY**; MRAC; Rwanda.
- janthinus* (Castelnau, 1840: 71), as GY; MNHN; = *nitens*
- japonicus* Balthasar, 1955: 395, as GY (PA) ssp. of *stipes*; PA; NMPC; = *ambiguus*
- jeanneli* (Garreta, 1914b: 413), as GY (PA); **AL**; MNHN; Kenya, Tanzania.
- * *javanus* Krikken & Huijbregts, 1987: 3; RMNH; Java; = ssp. of *sparsus*
- kilimanus* (Kolbe, 1897: 138), as var. of *GY splendens*; MNHB; = *nitens*
- koenigii* (Fabricius, 1775: 29), as *Scarabaeus*; **GY(MG)**; ZMUC; Mongolia, China (Xizang), India (Kerala, Pondicherry, Rajasthan, Tamil Nadu), Sri Lanka.
- krugeri* Kolbe, 1895: 336; MNHB; = *sericeifrons*
- kuntzeni* Müller, 1941: 335; MSNT; = *laevicollis* Cast.
- lacunosus* Klug, 1845: pl. 41.5; **GY**; MNHB; Arabia.
- laetus* (Hope, 1842: 494), as GY; **GA**; OXUM; Benin, Burkina Faso, Cameroon, CAR, Chad, DRC, Eritrea, Ethiopia, Ghana, Guinea, Kenya, Liberia, Niger, Nigeria, Senegal, Sierra Leone, Tanzania, Togo, Uganda.
- laevicollis* Castelnau, 1840: 71; **GY**; MNHN; Eritrea, Ethiopia, Kenya, Somalia, Sudan, Tanzania.
- laevicollis* Mulsant, 1842: 55; = *mopsus*
- laevis* (Arrow, 1900: 23), as GY; BMNH; = *lugens*
- laeviuscula* Kolbe, 1895: 336, as var. of *ignitus*; MNHB; = *ignitus*
- laeviusculus* Mulsant, 1842: 56; = *sturmii*
- lattreillei* Castelnau, 1840: 71; **GY**; MNHN; Sudan (Nubia).
- leei* (Fabricius, 1792: 65), as *Scarabaeus*; **GY**; ZMUC; Lesotho, RSA. [BMNH, OXUM, putative syntypes ex "Lees Cabinet".]
- leei* (Donovan, 1798: pl. 1.4), as *Scarabaeus*; type lost; = *sinuatus*
- lichtensteinii* Fähraeus, 1857: 186; NHRS; = *leei* Fab.
- lugens* (Fairmaire, 1891: 284), as GY; **GA**; NHMW; Botswana, Ethiopia, Kenya, Mozambique, RSA, Somalia, Tanzania.
- macleayi* Castelnau, 1840: 72; MNHN; = *leei* Fab.
- maculosus* (MacLeay, 1821: 517), as *Scarabaeus*; **AL**; BMNH; India (Uttarakhand, Madhya Pradesh, Maharashtra, Karnataka, Kerala, 'Assam'), Nepal.
- malayanus* Ochi & Kon, 1997: 236, as ssp. of *maurus*; NSMT; = *maurus*
- malleolus* (Kolbe, 1895: 334), as GY; **GA**; MNHB; Burundi, DRC, Mozambique, Rwanda, Tanzania, Uganda, Zimbabwe.
- martinezii* Balthasar, 1955: 393, as GY (PA); **PA**; NMPC; China (Sichuan).
- martini* Balthasar, 1960: 90, as GY (AL) ab. of *anthracinus*; NMPC; = *anthracinus*

- matabelensis* (Janssens, 1938: 44, 60), as GY (PA); **GA**; ISBN; Zimbabwe.
- maurus* (Sharp, 1875: 34), as GY; **PA**; MNHN; Malaysia, Borneo, Sumatra.
- melanarius* (Harold, 1867: 76), as GY; **PA**; MNHN; China (Hong Kong, Shanghai, Sichuan), Taiwan, India (Karnataka, Kerala, Tamil Nadu), Indonesia (Borneo, Java, Sumatra), Sri Lanka, Laos, Vietnam.
- melancholicus* Garreta, 1914a: 55, as var. of *laevicollis*; MNHN; = *laevicollis* Cast.
- miliaris* (Fabricius, 1775: 817), as *Scarabaeus*; **GY(MG)**; HMUG; Afghanistan, Bhutan, India (Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand, W. Bengal), Pakistan, Sri Lanka.
- mimus* Balthasar, 1934: 148, as ssp. of *geoffroyi*, full sp. stat. Montreuil 2011; **GY**; NMPC; Iran (Khuzestan), e. Turkey, Iraq?
- minor* Seabra, 1907: 75, as “typo” of *flagellatus*; = *flagellatus*
- minor* Ladeiro, 1950: 4, as var. of *sturmii*; = *sturmii*
- modestus* Lansberge, 1886: 72; RMNH; = *sericatus*
- modestus* Péringuey, 1888: 94; SAMC; = *humanus*
- moerens* Kolbe, 1895: 335; **GY**; MNHB; Ethiopia.
- mombelgi* (Boucomont, 1929: 760), as GY; **GA**; MNHN; China (Sichuan, Yunnan).
- mopsus* (Pallas, 1781: 3), as *Scarabaeus*; **GY**; MNHB; c.+ s. Europe, n. Africa, Asia Minor, Transcaspia, S. Korea, Mongolia.
- morosus* (Fairmaire, 1886: 319), as GY; **GA**; MNHN; China (Sichuan, Yunnan).
- mundus* (Wiedemann, 1819: 162), as GY; **GA**; formerly ZMUH (destroyed during WW II); sw. China, India (Bihar, Chhattisgarh, Himachal Pradesh, ‘Kashmir’, Madhya Pradesh, Punjab, Uttarakhand).
- naviaxi* Montreuil, 2009: 420; **GY**; MNHN; Iraq.
- nigrocupreus* Janssens, 1938: 36, 53, as var. of *ignitus*; ISBN; = *ignitus*
- nitens* (Olivier, 1789: 159), as *Scarabaeus*; **GA**; MNHN; Angola, Benin, Burkina Faso, Cameroon, CAR, Chad, DRC, Eritrea, Ethiopia, Ghana, Guinea, Guinea Bissau, Ivory Coast, Liberia, Kenya, Malawi, Mali, Mozambique Namibia, Niger, Nigeria, RSA, Rwanda, Senegal, Sierra Leone, Sudan, Tanzania, Uganda, Zambia.
- nyankpalaensis* Endrödi, 1976: 159; **GY**; HNHM; Ghana, Niger.
- nyassicus* (Kolbe, 1897: 137), as var. of *GY caffer*; MNHB; = *caffer*
- obtusus* Mulsant & Rey, 1871: 58; = *mopsus*
- olivaceus* (Quedenfeldt, 1884: 269), as GY; MNHN; = *laetus*
- olivieri* (Castelnau, 1840: 72), as GY; **AL**; MNHN; Burkina Faso, Ghana, Niger, Senegal.
- opacus* (Kollar & Redtenbacher, 1844: 516), as GY; **GA**; NHMW? (type not found); India (Himachal Pradesh, Jammu and Kashmir, Uttarakhand), Nepal.
- palawanicus* Ochi & Kon, 1997: 236, as ssp. of *sparsus*; NSMT; = *sparsus*
- particolor* Davis, 1986, 378; **GY**; MNHN; Ghana, Niger.
- parvus* (Macleay, 1821: 517), as *Scarabaeus*; **GY(MG)**; BMNH; Bangladesh, India (Bihar, Haryana, ‘Kashmir’, Madhya Pradesh, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand, W. Bengal), Sri Lanka.
- pauliani* Janssens, 1940: 17, 19, as sp.; ISBN; = *maurus*
- peringueyi* Shipp, 1895: 2; BMNH; = *humanus*
- persianus* Reitter, 1909: 79, as var. of *mopsus*, stat. n. Montreuil 2009; **GY**; HNHM; Iran (Bushehr, Hormozgan, Kerman, Sistan & Baluchestan), Iraq, UAE.
- pilularius* (Fabricius, 1787: 17), as *Scarabaeus*; ZMUC; = *geoffroyi*
- planus* (Sharp, 1875: 35), as GY; **PA**; MNHN; Malaysia, Sulawesi.
- plicatulus* Fairmaire, 1890: 547; **GY**; MNHN; Eritrea, Ethiopia, Oman, Somalia.
- * *productus* (Sharp, 1875: 38), as sp. of GY; MNHN; Cambodia, Laos, Vietnam; = ssp. of *sinuatus*
- profanus* (Fabricius, 1792: 64), as *Scarabaeus*; **GY**; ZMUC; CAR, Guinea, Senegal.
- profanus* (Latreille, 1827: 281), as GY; MNHN; unavailable name.
- pumilus* Reiche, 1847: 308; MNHN; = *virens*
- puncticollis* Gillet, 1909: 434; **GY(MG)**; ISBN; Egypt, Ghana, Guinea, Libya, Niger, Nigeria, Senegal, Sudan.
- purpureus* Garreta, 1914a: 55, as var. of *laevicollis*; MNHN; = *laevicollis*
- pustulatus* (Kolbe, 1895: 335), as GY; MNHB; = *signaticollis*

- qurosh* Montreuil, 2011: 414; **GY**; MNHN; Iran, Azerbaijan.
-refulgens Müller, 1941: 336; as var. of *kuntzeni*; MSNT; = *laevicollis*
reichei Waterhouse, 1890a: 369; **GY**; BMNH; Ethiopia, RSA (Transvaal).
rhomesianus Balthasar, 1963b: 285; **GY**; NMPC; DRC, Zimbabwe.
ruandensis Janssens, 1938: 39, 56; **GY**; MRAC, ISBN; Rwanda.
-rubrocupreus (Janssens, 1938: 43, 59), as var. of *GY* (PA) *azureus*; ISBN; = *laetus*
rudis (Sharp, 1875: 37), as *GY*; **PA**; MNHN; Flores, Java, Lombok, Sumbawa, Thailand.
ruficornis (Motschulsky, 1854: 63), as *GY*; **GA**; ZMUM; Afghanistan, China (Shanghai, Yunnan), India ('Assam', Himachal Pradesh, Punjab, Uttarakhand), Burma, Thailand.
-rufipes Seabra, 1907: 75, as var. of *flagellatus*; = *flagellatus*
-rugulosus Mulsant, 1842: 57; = *flagellatus*
rutilans (Castelnau, 1840: 71), as *GY*; **GA**; MNHN; Botswana, e. RSA, Sudan, Zimbabwe.
sagnai Nicolas & Moretto, 2002: 3; **AL**; MNHN; Burkina Faso, Mali, Senegal.
-scriptus (Pallas, 1781: 7), as *Scarabaeus*; = *koenigii*
sericatus Erichson, 1843: 232; **GY**; MNHB; Angola, Namibia, RSA.
sericeicollis Frey, 1958: 914; **AL**; NHMB; Guinea.
sericeifrons Fairmaire, 1887: 108; **GY**; MNHN; e.+ s. Africa, Egypt, Somalia.
* *serratus* Fischer von Waldheim, 1821: 11, stat. n. Montreuil 2011; SMTD; ssp. of *flagellatus*
-sexdentatus Balthasar, 1963b: 288; as *GY* (**AL**); CNMP; = *alluaudi*
signaticollis (Waterhouse, 1890a: 369), as *GY*; **AL**; BMNH; Ethiopia, Sudan (Nubia).
-similaris Janssens, 1940: 25, 31, as var. of *Garreta gilletti*; ISBN; = *gilletti*
sindensis Arrow, 1931: 66; **GY**; BMNH; 'India'.
-sinensis Balthasar, 1934: 148, as var. of *mopsus*; NMPC; = *mopsus*
-singularis (Waterhouse, 1890b: 410), as *GY*; BMNH; = *maurus*
-sinuatus (Geoffroy, 1785: 15), as *Copris*; MNHN; = *geoffroyi*
sinuatus (Olivier, 1789: 160), as *Scarabaeus*; **PA**; MNHN; China, Taiwan, Korean Peninsula, Nepal, India (Haryana, Karnataka, Kerala, Madhya Pradesh, Uttarakhand), se. Asia, Indonesia.
smaragdifer (Walker, 1858: 208), as *GY*; **GA**; BMNH; India (Chhattisgarh, Madhya Pradesh, 's. India'), Sri Lanka.
-smaragdinus Fåhraeus, 1857: 187; NHRS; = *ignitus*
somaliensis Lansberge, 1882a: 22, 1882b: 15; **GY**; MNHN; Somalia.
sparsus (Sharp, 1875: 38), as *GY*; **PA**; MNHN; Kalimantan, Sabah.
spilotus (MacLeay, 1821: 517), as *Scarabaeus*; **AL**; MAMU; Bangladesh, India (Bihar, Karnataka, Tamil Nadu, W. Bengal).
-spinotus (Boucomont, 1914: 248), as *GY*; MNHN; = *striatus*
-splendens (Castelnau, 1840: 71) as *GY*; OXUM; = *sumptuosus*
-splendens (Castelnau) sensu Péringuey (1901: 67); OXUM; = *rutilans*
-splendidulus of Nicolas & Moretto (2002) = incorrect subsequent spelling of *splendidus*
splendidus (Bertoloni, 1849: 393), as *GY*; **AL**; types lost?; Botswana, DRC, Ethiopia, Kenya, Mozambique, Namibia, RSA, Sudan, Tanzania, Zimbabwe.
-sternalis Müller, 1942: 76, as ssp. of *virens*; MSNT; = *virens*
stipes (Sharp, 1875: 35), as *GY*; **PA**; MNHN; Philippines (Mindoro).
striatus (Sharp, 1875: 33), as *GY*; **PA**; MNHN; Indonesia (Borneo, Sumatra), Singapore.
sturmii (MacLeay, 1821: 512), as *Scarabaeus*; **GY**; BMNH; s. Europe, n. Africa.
-subauratus Kolbe, 1914: 320; MNHN; = *sericeifrons*
-subcupratus (Fåhraeus, 1857: 184), as *GY*; NHRS; = *splendidus*
-subtilis (Waterhouse, 1890a: 372), as *GY*; BMNH; = *ruficornis*
sumatrensis Ochi & Kon, 1997: 235; **PA**; NSMT; w. Sumatra.
sumptuosus (Castelnau, 1840: 71), as *GY*; **GA**; OXUM (ex Gory Coll.); India (Gujarat, Madhya Pradesh, Maharashtra, Tamil Nadu, 's. India').
-suturalis Mulsant, 1842: 57; = *flagellatus*
sylvestris Mittal, 2011: 297; **GA**; INPC; India (Haryana).

- **szechuanicus* Balthasar, 1934: 149, as GY (PA); NMPC; China (Sichuan, Xizang), Thailand; = ssp. of *sinuatus*
 –*thalassinus* (Klug, 1855: 650), as GY; MNHB; = *splendidus*
thelwalli Waterhouse, 1890a: 367; **GY**; BMNH; e. RSA, Tanzania, Zimbabwe.
thoracicus Harold, 1868: 79; **GY**; MNHN; Egypt, n. Sudan (Nubia), Ethiopia?; 'Caffraria'?
 –*transpyrenaeus* Gistel, 1857: 83; = *sturmii*
tristis Castelnau, 1840: 72; **GY**; MNHN, OXUM (ex Gory coll.); Niger, Senegal.
 –*tuberculatus* Mulsant, 1842: 55; = *geoffroyi*
tuxeni Petrovitz, 1955: 276; **GY**; MHNG; Afghanistan.
umbrinus (Gérstaeker, 1871: 49), as GY; **AL**; MNHB; DRC, Gambia, Ghana, Kenya, Senegal, Sudan, Tanzania, Uganda.
unicolor (Fåhraeus, 1857: 182), as GY; **GA**; NHRS; Mozambique, RSA, Zimbabwe.
 –*vanderkelleni* Lansberge, 1886: 72, as var. of *virens*; RMNH; = *virens*
 –*variegatus* Ferreira, 1954b: 3, as var. of *plicatulus*; SAMC; = *plicatulus*
 –*variolosus* Motschulsky, 1849: 102; ZMUM; = *flagellatus*
 –*violaceus* Ballion, 1871: 331, as var. of *aciculatus*; ONUM?; = *aciculatus*
virens Erichson, 1843: 231; **GY**; MNHB; Angola, DRC, Ethiopia, Guinea, Mozambique, Namibia, e. RSA, Rwanda, Tanzania.
 –*virescens* Müller, 1902: 451; = *geoffroyi*
 –*virescens* Seabra, 1907: 72, as var. of *sturmii*; = *sturmii*
 –*viridimicans* (Kolbe, 1897: 137), as var. of *GY azureus*; MNHB; = *laetus*
 –*wahlbergi* (Fåhraeus, 1857: 183), as GY; NHRS; = *nitens*
youngai Endrödi, 1973: 201; **AL**; HNMH; RSA, Ghana?
zavattarii (Müller, 1941: 333), as GY; **AL**; MSNT; Ethiopia, Kenya.
 –*zumpti* Frey, 1967: 404, 405; NHMB; = *nitens*

Gymnopleurus	Allogymnopleurus	Paragymnopleurus	Garreta
<i>aciculatus</i> - As	<i>leei</i> - Af	<i>aeneus</i> - Af	<i>azureus</i> - Af
<i>aenescens</i> - Af	<i>miliaris</i> - As	<i>alluaudi</i> - Af	<i>bechynei</i> - Af
<i>aeruginosus</i> - Af	<i>mimus</i> - As	<i>anthracinus</i> - Af	<i>caffer</i> - Af
<i>andreaei</i> - Af	<i>moerens</i> - Af	<i>consocius</i> - Af	<i>crenulatus</i> - Af
<i>asperimus</i> - Af	<i>mopsus</i> - Eu/Af/As	<i>histrion</i> - Af	<i>dejeanii</i> - As
<i>atratus</i> - Af	<i>naviauxi</i> - As	<i>indigaceus</i> - Af	<i>diffinis</i> - Af
<i>bicallosus</i> - As	<i>nyankpalaensis</i> - Af	<i>infranitens</i> - Af	<i>fastiditus</i> - Af
<i>bicolor</i> - Af	<i>particolar</i> - Af	<i>jeanneli</i> - Af	<i>gilleti</i> - As
<i>bombayensis</i> - As	<i>parvus</i> - As	<i>maculosus</i> - As	<i>laetus</i> - Af
<i>coerulescens</i> - Af	<i>persianus</i> - Af/As	<i>olivieri</i> - Af	<i>lugens</i> - Af
<i>colmanti</i> - Af	<i>plicatulus</i> - Af	<i>sagnai</i> - Af	<i>malleolus</i> - Af
<i>cyaneus</i> - As	<i>profanus</i> - Af	<i>sericeicollis</i> - Af	<i>matabelensis</i> - Af
<i>elegans</i> - Af	<i>puncticollis</i> - Af	<i>signaticollis</i> - Af	<i>mombelgi</i> - As
<i>flagellatus</i> - Eu/As	<i>qurosh</i> - As	<i>spilotus</i> - As	<i>morosus</i> - As
<i>foricarius</i> - Af	<i>reichei</i> - Af	<i>splendidus</i> - Af	<i>mundus</i> - As
<i>fulgidus</i> - Af	<i>rhodesianus</i> - Af	<i>umbrinus</i> - Af	<i>nitens</i> - Af
<i>gemmatus</i> - As	<i>ruandensis</i> - Af	<i>youngai</i> - Af	<i>nyassicus</i> - Af
<i>geoffroyi</i> - Eu/Af/As	<i>sericatus</i> - Af	<i>zavattarii</i> - Af	<i>opacus</i> - As
<i>humanus</i> - Af	<i>sericeifrons</i> - Af		<i>ruficornis</i> - As
<i>hypocrita</i> - As	<i>sindensis</i> - As		<i>rutilans</i> - Af
<i>ignitus</i> - Af	<i>somaliensis</i> - Af		<i>smaragdifer</i> - As
<i>imitator</i> - Af	<i>sturmii</i> - Eu/Af		<i>sumptuosus</i> - As
<i>jacksoni</i> - Af	<i>thelwalli</i> - Af		<i>sylvestris</i> - As
<i>janssensi</i> - Af	<i>thoracicus</i> - Af		<i>unicolor</i> - Af
<i>koenigii</i> - As	<i>tristis</i> - Af		
<i>lacunosus</i> - Af	<i>tuxeni</i> - As		
<i>laevicollis</i> - Af	<i>virens</i> - Af		
<i>latreillei</i> - Af			

Table 1. Valid species of Gymnopleurini by genera. Af = Africa, As = Asia, Eu = Europe.

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