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ACHTUNG

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Systematic and zoogeographical notes on the genus *Georissus* LATREILLE, 1809 (Coleoptera: Hydrophilidae)

FRANZ HEBAUER

ABSTRACT

The three known subgenera of *Georissus* LATREILLE are redefined and the distribution pattern of this genus is provided.

KEY WORDS

Coleoptera, Hydrophilidae, *Georissus*, subgenera redefinition, distribution.

DIAGNOSIS

Georissus was divided into three subgenera by SATO (1972) based on primarily differences in dorsal sculpture (head, pronotum, elytra) and shape of pronotum. Originally he also included differences in the sculpture of the basal ventrite, but later (1979) omitted these characters. He defined *Georissus* s. str. as having the head granulate anteriorly and provided with a few foveae on posterior portion, pronotal disc smooth in posterior two thirds (but with median groove), pronotal sides not dentate before posterior angles, and elytra provided with series of distinct punctures.

The subgenus *Neogeorissus* was described as having similar sculpture on head, but with pronotum having a distinct pattern of foveae on the disc, notably a central fovea and two oblique ones just before the posterior pronotal margin. Furthermore pronotal disc is sparsely granulate, pronotal sides distinctly dentate just before posterior angles, and elytra bearing rows of granules.

The last subgenus, *Nipponogeorissus* differs from the other two by having distinct foveae on entire dorsal face of head, pronotum entirely and closely granulate and elytra with four longitudinal granulate carinae (alternate interstices). Furthermore, the pronotal sides are regularly curved, i.e. not dentate before posterior angles.

Although SATO (l.c.) based his subgeneric division of *Georissus* on Japanese species, it seems rather unproblematic to classify other species according to this scheme. There is, however, some variation with regard some of the characters used notably the lateral dentition of pronotum and development of elytral carinae and series of granules. Several species have a pattern of foveae on pronotal disc as described for *Neogeorissus* but indistinct or very weak lateral dentition (e.g. *G. laesicollis*, *G. decoratus*) and some even lack distinct granules on elytral interstices (e.g. *G. alticosta*, *G. decorsei*). Other species (e.g. *G. australis*) have a fairly typical *Neogeorissus* type of pronotal foveae and granulation as well as distinctly granulate elytral interstices, but lack lateral pronotal dentition and the median pronotal "fovea" forms a narrow groove (as described for *Georissus* s.str.).

Because of such variation in some of the originally used diagnostic characters it is necessary to modify the concepts of the subgenera. At present, this is probably simplest to expand the limits of *Neogeorissus* to include some species with non-dentate pronotal sides, and non-tuberculate elytral interstices.

In this sense, *Neogeorissus* includes all species with foveae on pronotal disc and with sparsely granulate pronotum. It is by far the largest subgenus, widely distributed in the afro-tropical and oriental region, with some species also in palearctic and australian regions. *Georissus* s.str. have a regularly convex, smooth or sparsely granulate or punctate disc (at most with a narrow median groove). Relatively few species; widespread in palearctic region, also in nearctic and neotropical regions.

Nipponogeorissus have extensive and densely granulate sculpture on entire surface and weak impressions on disc. Barely two species known (Japan + Papua New Guinea).

Two species, *G. pygidialis* (with posteriorly truncate elytra, anteriorly truncate pronotum and peculiar pattern of cephalic and pronotal foveae) and *G. insolitus* (with inner elytral striae, foveae modified to form two rows of very large foveae - corresponding to pair-wise fused striae - separated longitudinally by granulate costae corresponding to alternate interstices), both provisionally referred to *Neogeorissus*, are rather aberrant and will probably have to be placed in separate subgenera. Actually, the subgenus *Neogeorissus* is likely to be a paraphyletic group, containing the more primitive members of *Georissus*. But in the absence of a phylogenetic analysis of the genus I refrain from proposing new formal subgenera.

KEY TO THE SUBGENERA

- 1 Pronotum densely granulate on entire surface, disc weakly uneven, sides without dentition, regularly curved. Alternate elytral interstices more or less costate, granulate
 - Pronotum sparsely granulate to almost smooth on disc 2
Nipponogeorissus SATO, 1972
- 2 Pronotal disc with distinct foveae, including a central one (rarely narrow linear) and two oblique, subbasal ones, usually more or less granulate, sides often with lateral tooth before posterior corners. Elytral interstices usually granulate, the alternate ones often more raised
 - Pronotal disc (behind anterior projecting lobe) regularly convex, at most with narrow median groove, smooth or sparsely punctate or granulate, sides without dentition. Elytral interstices smooth, not raised
Neogeorissus SATO, 1972
 - Pronotum densely granulate on entire surface, disc weakly uneven, sides without dentition, regularly curved. Alternate elytral interstices more or less costate, granulate
Neogeorissus SATO, 1972

Table (ref. Satō 1972):

	<i>Georissus</i>	<i>Neogeorissus</i>	<i>Nipponogeorissus</i>
Pronotal sides subbasally	simple	dentate	simple
Pronotal disc	smooth (without grooves, except medially)	sparsely granulate with a pair of large subbasal grooves	extensively granulate (obsolete grooves)
Head	median posterior furrow	few posterior foveae	extensive foveae throughout separated by carinae
Elytra	seriate-punctate	8 rows of granules	4 granulate costae
Basal ventrite	(non-excavate)	pair of basal excavations or punctures	(non-excavate)

For description of the genus see HANSEN (1991); for summarizing descriptions of species and for keys see CHAMPION (1923), DELÈVE (1967, 1972), HEBAUER (1998), MOTSCHULSKY (1843), PAULIAN & LEGROS (1943).

DISTRIBUTION PATTERN (FIG. 1).

Up to now there are known 76 described species.

<i>Georissus</i> s.str.	9 spp.	<i>Neogeorissus</i>	65 spp.	<i>Nipponogeorissus</i>	2 spp.
Total:	4	Total:	7	Total:	1
Palaearctic:	2	Palaearctic:	33	Palaearctic:	1
Nearctic:	2	Afrotropical:	4	Australian:	1
Neotropical:	1 ?	Australian:	21		
Oriental:		Oriental:			

For distribution and synonyms see HANSEN (1999).

REFERENCES

- CHAMPION, G. C. 1923: Some Indian Coleoptera (11). - Entomologist's monthly Magazine 59: 165-179.
- DELÈVE, J. 1967: Les *Georissus* de Madagascar (Coleoptera Georissidae). - Bulletin et Annales de la Société royale d'Entomologie de Belgique 103: 233-254.
- DELÈVE, J. 1972: Le *Georissidae* (Coleoptera) de Ceylan. - Bulletin et Annales de la Société royale belge d'Entomologie 108: 149-165.
- HANSEN, M. 1991: The Hydrophiloid Beetles. Phylogeny, Classification and a Revision of the Genera (Coleoptera, Hydrophiloidea). - Biologiske Skrifter. Det Kongelige Danske Videnskabskabernes Selskab 40: 1-368.
- HANSEN, M. 1999: World Catalogue of Insects, Vol. 2, Hydrophiloidea (Coleoptera). - Apollo Books, 1-416.
- HEBAUER, F. & KLAUSNITZER, B. 1998: Insecta: Coleoptera: Hydrophiloidea (exkl. Helophorus). Süßwasserfauna von Mitteleuropa 20/7, 8, 9, 10-1. Gustav Fischer.
- LATREILLE, P. A. Genera Crustaceorum et Insectorum, secundum ordinem naturalem in Familias disposita, iconibus exemplisque plurimis explicata. Vol. 4. 399 pp. - Amant Koenig, Parisiis et Argentorati.
- MOTSCHULSKY V. 1843: Monographie du genre *Georissus* Latreille. - Bulletin de la Société impériale des Naturalistes de Moscou 16: 645-662, pl. xi-xii.
- PAULIAN, R. & LEGROS, C. 1943: Les *Géorissides* africains. - Revue de Zoologie et de Botanique africaines 37: 190-202.
- SATO, M. 1972: The *Georissid* Beetles of Japan. - Journal of Nagoya Women's College 18: 207-213.

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Revision der Gattung *Amarygmus* DALMAN, 1823
sowie verwandter Gattungen. XXI.
Nachbeschreibungen, Neubeschreibungen und Illustrationen
von *Amarygmus*-Arten der orientalischen Region
(Coleoptera; Tenebrionidae; Amarygmmini).
H. J. BREMER

SUMMARY

BREMER, H. J.: Revision of the genus *Amarygmus* DALMAN, 1823 and of related genera. Part XXI. *Amarygmus* species of the Oriental region; redescriptions, descriptions of new species, illustrations (Coleoptera; Tenebrionidae; Amarygmmini). The following species of *Amarygmus* DALMAN are redescribed and illustrated: *Amarygmus acutestriatus* (FAIRMAIRE, 1896); *Amarygmus adonis* PIC, 1922; *Amarygmus aeneolus* FAIRMAIRE, 1893; *Amarygmus baluensis* PIC, 1951; *Amarygmus banensis* PIC, 1929; *Amarygmus bedagelensis* PIC, 1951; *Amarygmus binhanus* PIC, 1922; *Amarygmus consocius* GEBIEN, 1943 [= *Amarygmus foveolatus* PIC, 1926]; *Amarygmus cyaneipennis* PIC, 1938; *Amarygmus diversetinctus* PIC, 1925; *Amarygmus diversiceps* PIC, 1926; *Amarygmus girardi* BREMER, 2001 [= *Amarygmus niasensis* PIC, 1915]; *Amarygmus klossi* BLAIR, 1929; *Amarygmus leseleuci* PIC, 1954; *Amarygmus postdepressus* PIC, 1938; *Amarygmus saigonensis* PIC, 1938; *Amarygmus salvazai* PIC, 1954; *Amarygmus sinensis* PIC, 1922; *Amarygmus striatipennis* PIC, 1935; *Amarygmus subannulipes* (PIC, 1922); *Amarygmus surdaensis* BREMER, 2001 [= *Amarygmus diversepunctatus* PIC, 1938]; *Amarygmus tonkinensis* PIC, 1922.

The following new species are described and illustrated: *Amarygmus centesimus* sp. n. (Sumatra, Peninsular Malaysia, Thailand); *Amarygmus communis* sp. n. (Sabah); *Amarygmus dryitidis* sp. n. (Peninsular Malaysia); *Amarygmus jeni* sp. n. (Peninsular Malaysia); *Amarygmus maiusculus* sp. n. (Thailand; Peninsular Malaysia); *Amarygmus rivalis* sp. n. (Sumatra); *Amarygmus sincerus* sp. n. (Thailand); *Amarygmus viridicatus* sp. n. (Sabah). *Amarygmus lacanus* PIC, 1924 is a junior synonym of *Amarygmus tonkinensis* PIC, 1922 [syn. n.]; *Amarygmus dupontii* PIC, 1938 is a junior synonym of *Amarygmus tonkinensis* PIC, 1929 [syn. n.]; *Amarygmus purpureosaturalis* PIC, 1951 is a junior synonym of *Amarygmus hoanus* PIC, 1929 [syn. n.]; *Amarygmus alternans* (CARTER, 1928) is a junior synonym of *Amarygmus klossi* BLAIR, 1929 [syn. n.]; *Amarygmus apicalis* PIC, 1915 is a junior synonym of *Amarygmus viridipennis* (FABRICIUS, 1794) [syn. n.]; *Amarygmus cyaneipennis* PIC, 1938 is the new status of *Amarygmus micans* (FABRICIUS, 1794) var. *cyaneipennis* PIC, 1938 [stat. n.].

KEY WORDS

Coleoptera; Tenebrionidae; Amarygmmini; *Amarygmus*; redescriptions of species of FAIRMAIRE, PIC, GEBIEN, BLAIR and KULZER; description of new species of *Amarygmus*; Oriental faunal region.

EINLEITUNG

Alle durch PIC und die meisten durch FAIRMAIRE beschriebenen *Amarygmus*-Arten sind so kurzformal beschrieben, dass auf der Basis ihrer Beschreibungen eine Zuordnung von zu bestimmenden Tieren nicht möglich ist; daneben sind Hinweise auf verwandte Arten in sehr vielen Fällen falsch. Es fehlen ohne Ausnahme Abbildungen dieser Arten, die bei der Identifizierung helfen könnten. Deshalb ist ohne Typenvergleich eine Zuordnung unmöglich. Es besteht daher die Notwendigkeit, Nachbeschreibungen der PIC'schen und FAIRMAIRE'schen Arten mit Abbildungen sowie Hinweise auf verwandte Arten zu geben. Auch Arten anderer Autoren sind zum Teil durch mangelhafte Beschreibung unsicher, so dass sich Nachbeschreibungen und Abbildungen lohnen.

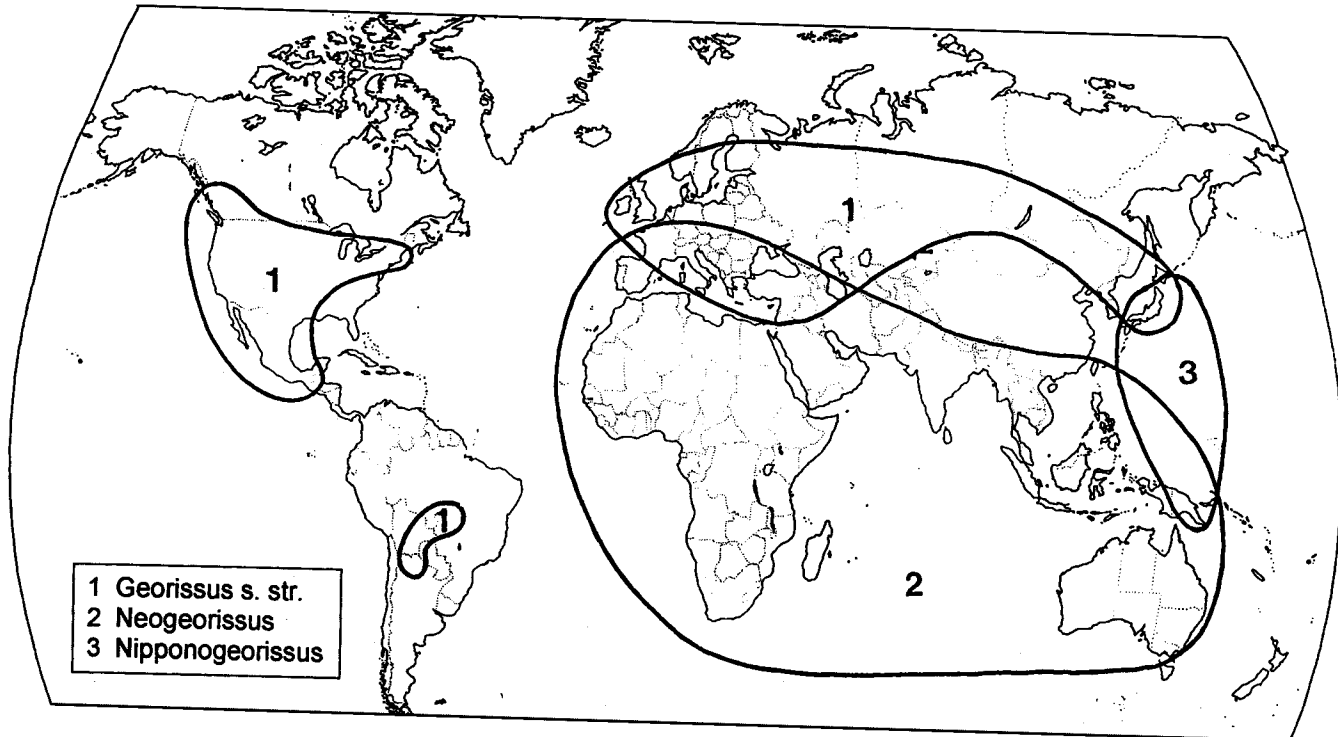


Fig. 1. Geographical distribution of the genus *Georissus* LATREILLE.