
BISHOP MUSEUM OCCASIONAL PAPERS

A REVISED CHECKLIST OF THE GYRINIDAE
(INSECTA: COLEOPTERA) OF NEW GUINEA AND
PROXIMAL ISLANDS, WITH NOMENCLATORIAL NOTES
AND ADDENDA

DAN A. POLHEMUS



BISHOP MUSEUM PRESS
HONOLULU

RESEARCH PUBLICATIONS OF BISHOP MUSEUM

Bishop Museum Press has been publishing scholarly books on the natural and cultural history of Hawai'i and the Pacific since 1892. The Bishop Museum Occasional Papers (eISSN 2376-3191) is a series of short papers describing original research in the natural and cultural sciences.

The Bishop Museum Press also publishes the Bishop Museum Bulletin series. It was begun in 1922 as a series of monographs presenting the results of research throughout the Pacific in many scientific fields. In 1987, the Bulletin series was separated into the Museum's five current monographic series, issued irregularly and, since 2017, electronically:

Bishop Museum Bulletins in Anthropology	(eISSN 2376-3132)
Bishop Museum Bulletins in Botany	(eISSN 2376-3078)
Bishop Museum Bulletins in Entomology	(eISSN 2376-3124)
Bishop Museum Bulletins in Zoology	(eISSN 2376-3213)
Bishop Museum Bulletins in Cultural and Environmental Studies	(eISSN 2376-3159)

All articles herein are © the Author(s) and are open access distributed under the terms of the Creative Commons Attribution License 4.0 (CC-BY-NC-SA 4.0), which permits the copying, distribution and transmission of the work as long as the original source is cited.

ISSN 0893-1348 (print)
ISSN 2376-3191 (online)
Copyright © by Bishop Museum



BERNICE PAUAHI BISHOP MUSEUM
The State Museum of Natural and Cultural History
1525 Bernice Street
Honolulu, Hawai'i 96817-2704, USA

A Revised Checklist of the Gyrinidae (Insecta: Coleoptera) of New Guinea and Proximal Islands, with Nomenclatural Notes and Addenda¹

DAN A. POLHEMUS 

Pacific Biological Survey, Bishop Museum, 1525 Bernice St., Honolulu, Hawai'i 96817-2704, USA; e-mail: bugman@bishopmuseum.org

Abstract. A revised and updated checklist of all species of Gyrinidae currently described from New Guinea and proximal islands is provided, with updated genus and subgenus assignments, annotations, corrections, and notes on the proper orthography for certain species.

INTRODUCTION

An initial checklist of the Gyrinidae, or whirligig beetles, of New Guinea and closely proximal islands was provided by Polhemus (2011) as an appendix to a paper which otherwise consisted of ecological and biogeographic information for 16 species of Dineutini occurring in this region. The checklist was added to the original paper as a last-minute addendum, at the insistence of the editor. As such, it was hastily prepared and inadequately proofed, and as a result contained certain errors, which were not detected by the author, the editor, or two peer-reviewers. These are corrected in the current version provided here.

In particular, as noted in the ICZN *Code of Zoological Nomenclature (Code)* Article 32.5.2, a name published with a diacritical or other mark, ligature, apostrophe or hyphen must be corrected. In the case of names published prior to 1985 based upon a German word with an umlaut sign, the umlaut is deleted and the letter “e” is inserted after the vowel originally bearing the umlaut. If there is any doubt as to whether the name is based on a German word, this correction is still to be applied. In the original checklist (Polhemus, 2011) this requirement of the Code was overlooked, but the necessary corrections are made and noted in the current version.

In addition to these basic corrections, a recent revision of species concepts in *Rhomborhynchus* (Gustafson & Miller, 2016) coupled with significant revisions to genus and subgenus assignments across the Dineutini based on phylogenetic analysis by these same authors (Gustafson & Miller, 2017) have rendered the original version of this checklist taxonomically obsolete. This new version therefore follows the revised arrangement of species concepts and higher categories set forth in these studies.

1. Contribution No. 2025-004 to the Pacific Biological Survey.

**REVISED CHECKLIST OF THE GYRINIDAE OF NEW GUINEA
AND NEARBY ISLANDS**

Genus *Macrogyrus* Régimbart, 1882

Note: Based on the work of Gustafson & Miller (2017), the New Guinea species previously assigned to the subgenera *Tribologyrus* and *Ballogyrus* are now held under the nominate subgenus *Macrogyrus*. These same authors also note that for *Macrogyrus* as a whole: “The New Guinean fauna and those of the surrounding islands are in desperate need of revision following the work of Ochs (1955), in which the few known species were divided into numerous subspecies, from disparate locations in New Guinea, based on few specimens. The work of Ochs (1955), including no illustrations, nondiscrete morphological characters and excessive splitting of species, has made the identification of New Guinean specimens exceptionally difficult.”

Subgenus *Macrogyrus* Régimbart, 1882

- | | |
|---|------------------------------|
| <i>albertisi</i> Régimbart, 1882 | West New Guinea (widespread) |
| Note: The original checklist gave this species name as “albertisii” which was incorrect. The proper spelling is used here. | |
| <i>blanchardi blanchardi</i> Régimbart, 1883 | NW New Guinea |
| <i>blanchardi brandti</i> Ochs, 1955 | North Central New Guinea |
| <i>blanchardi inexcisus</i> Ochs, 1955 | West Central New Guinea |
| <i>blanchardi lieftincki</i> Ochs, 1955 | Misool Is. |
| <i>blanchardi montanus</i> Ochs, 1955 | West Central New Guinea |
| <i>blanchardi peregrinus</i> Ochs, 1960 | Northeast New Guinea |
| Note: This subspecies was overlooked in the original checklist of Polhemus (2011). | |
| <i>blanchardi quadrisulcatus</i> Ochs, 1925 | NE New Guinea |
| <i>blanchardi schlaginhaufeni</i> Ochs, 1955 | North Central New Guinea |
| <i>blanchardi stueberi</i> Ochs, 1955 | North Central New Guinea |
| Note: The original combination for this subspecies name was <i>Macrogyrus blanchardi stüberi</i> (Ochs, 1955). The previous version of the checklist (Polhemus, 2011) used the subspecies name <i>stuberi</i> , but as per Article 32.5.2 of the Code, it is herein corrected to <i>stueberi</i> . | |
| <i>blanchardi submontanus</i> Ochs, 1955 | West Central New Guinea |
| <i>blanchardi wagneri</i> Ochs, 1960 | Northeast New Guinea |
| Note: This subspecies was overlooked in the original checklist of Polhemus (2011). | |
| <i>elongatus elongatus</i> Régimbart, 1883 | Aru Islands; Kei Islands |
| <i>elongatus beccarii</i> Ochs, 1955 | NW New Guinea |
| <i>elongatus oberthueri</i> Régimbart, 1883 | SE New Guinea |
| Note: The original combination for this taxon name was <i>Macrogyrus Oberthüri</i> (Régimbart, 1883), later treated as a subspecies of <i>M. elongatus</i> by Ochs (1955). The previous checklist (Polhemus, 2011) used the subspecies name <i>oberthuri</i> , but as per Article 32.5.2 of the Code, it is herein corrected to <i>oberthueri</i> . There is some degree of uncertainty as to whether this name is in fact German-derived, because although “Oberthür” is a German name, the entomologist for which this subspecies is named was French, in which case a correction to orthography would not be required. However as noted in the introduction, the Code specifies that in cases of such uncertainty, the correction is still to be applied. | |

<i>frogatti</i> Macleay, 1886	SE New Guinea
Note: Although both Ochs (1955) and Brinck (1981) cited the name for the author of this species as “MacLeay,” more recent works on Gyrinidae, such as Gustafson & Miller (2016), have used “Macleay” because the person in question actually wrote their name in this latter fashion. As such, that orthography is used in the current checklist.	
<i>leopoldi</i> Ball, 1932	West New Guinea
<i>obsoletus</i> Régimbart, 1907	Tagula Is.
<i>ovatus</i> Ochs, 1934	Admiralty Islands (Lou Is.)
<i>reticulatus reticulatus</i> Régimbart, 1899	SE New Guinea
<i>reticulatus detzneri</i> Ochs, 1955	NE New Guinea
<i>reticulatus freudei</i> Ochs, 1955	East Central New Guinea
<i>sexangularis</i> Régimbart, 1907	SE New Guinea

Subgenus *Cyclomimus* Ochs, 1929

<i>loriai</i> Ochs, 1955	SE New Guinea
<i>purpurascens</i> Régimbart, 1883	NW New Guinea
<i>heurni</i> Ochs, 1955	West Central New Guinea
<i>toxopeusi</i> Ochs, 1955	West Central New Guinea

Genus *Dineutus* Macleay, 1825

Note: There has been confusion as to the correct orthography of this name in the literature. The original spelling as proposed by Macleay (1825) was *Dineutus*, but many subsequent American authors used the incorrect subsequent spelling “*Dineutes*” for both extant and fossil taxa.

Subgenus *Cyclous* Dejean, 1833

Note: Based on the work of Gustafson & Miller (2017), the New Guinea species previously assigned to the genus *Spinodineutes* are now held under the nominate subgenus *Cyclous*.

<i>australis</i> (Fabricius, 1775)	Widespread
<i>curvipes</i> Brinck, 1981	SE New Guinea
<i>dunckeri</i> Zimmermann, 1920	Northern New Guinea
<i>neoguineensis</i> Régimbart, 1892	SE New Guinea
<i>neohollandicus</i> Ochs, 1926	Australia and South New Guinea

Subgenus *Dineutus* Macleay, 1825

Note: Based on the work of Gustafson & Miller (2017), the New Guinea species previously assigned to the subgenera *Rhombodineutus* and *Merodineutus* are now held under the nominate subgenus *Dineutus*.

<i>archboldianus</i> Ochs, 1955	West Central New Guinea
<i>chalybaeus</i> Zimmermann, 1924	SE New Guinea
<i>helleri helleri</i> Ochs, 1925	North Central New Guinea
Note: Surbakti <i>et al.</i> (2021) provided additional notes on habitat and distribution.	
<i>helleri stueberi</i> Ochs, 1955	North Central New Guinea

Note: The original combination for this subspecies name was *Dineutus (Rhombodineutus) helleri stueberi* (Ochs, 1955). The previous version of the checklist (Polhemus, 2011) used the subspecies name *stueberi*, but as per Article 32.5.2 of the Code, it is herein corrected to *stueberi*. The subgenus *Rhombodineutus* is now considered a synonym of *Dineutus* (Gustafson & Miller, 2017).

<i>heurni</i> Zimmermann, 1924	West Central New Guinea
<i>jocosus</i> Brinck, 1984	East Central New Guinea
<i>loriae</i> Régimbart, 1899	SE New Guinea
<i>macrochirus</i> Régimbart, 1899	SE New Guinea
<i>pectoralis pectoralis</i> Régimbart, 1882	NW New Guinea
<i>pectoralis alticola</i> Ochs, 1967	East Central New Guinea
<i>pectoralis avicularis</i> Brinck, 1983	NW New Guinea
<i>pectoralis biakensis</i> Brinck, 1983	Biak Is.
<i>pectoralis centralis</i> Brinck, 1983	NE New Guinea
<i>pectoralis mesosternalis</i> Régimbart, 1907	NE New Guinea
<i>pectoralis monticola</i> Ochs, 1955	SE New Guinea
<i>pectoralis neobritannicus</i> Ochs, 1925	New Britain
Note: In the original checklist (Polhemus, 2011) this taxon was listed as <i>Dineutes neobritannicus</i> , which was an incorrect subsequent spelling, and then also listed again under its subsequent assignment by Brinck (1983) as a subspecies of <i>Dineutes pectoralis</i> , the proper current placement. These errors are corrected herein.	
<i>pectoralis occidentalis</i> Brinck, 1983	West Central New Guinea
<i>pectoralis papuanus</i> Ochs, 1955	SE New Guinea
<i>priscus</i> Brinck, 1984	East Central New Guinea
<i>silenus</i> Brinck, 1983	NW New Guinea
<i>sinuaticollis</i> Zimmermann, 1924	West Central New Guinea
<i>spectabilis</i> Brinck, 1984	New Guinea (precise locality unknown)
<i>tetracanthus buergersi</i> Ochs, 1955	East Central New Guinea
Note: The original combination for this subspecies name was <i>Dineutes (Rhombodineutus) bürgersi</i> (Ochs, 1955). The taxon was subsequently treated as a subspecies of <i>Dineutes (Rhombodineutus) tetracanthus</i> by Brinck (1983). The previous checklist (Polhemus, 2011) gave this subspecies name as <i>burgersi</i> , but as per section 32.5.2 of the Code, it is herein corrected to <i>buergersi</i> .	
<i>tetracanthus tetracanthus</i> Régimbart, 1906	West Central New Guinea
<i>unicolor</i> Ochs, 1960	NE New Guinea
<i>virescens</i> Ochs, 1955	SW New Guinea
<i>wauensis</i> Brinck, 1984	SE New Guinea

Subgenus *Rhomborhynchus* Ochs, 1926

Note: *Rhomborhynchus* was formerly held as a subgenus of *Porrrohynchus* but was transferred as a subgenus under *Dineutus* by Gustafson & Miller (2017).

<i>depressus depressus</i> (Régimbart, 1892)	Widespread in New Guinea
Note: Ochs (1955) recognized 5 subspecies of <i>Dineutes (Rhomborhynchus) depressus</i> : the nominate <i>D. (R.) depressus depressus</i> Régimbart from Dilo, in the Papuan Peninsula; <i>D. (R.) depressus jamurensis</i> Ochs, 1955 from Lake Yamur in northwestern New Guinea; <i>D. (R.) depressus versteegi</i> Ochs, 1955 from the Beaufort River of south-central New Guinea; <i>D. (R.) depressus moszkowskii</i> Ochs, 1955 from the Van Daalen River in the Mamberamo Basin; and <i>D. (R.) depressus misoolensis</i> Ochs, 1955 from Misool Island. Gustafson & Miller (2016), after examination of the holotypes coupled with a critical morphological analysis, synonymized all of these subspecies under <i>D. (R.) depressus</i> , with the exception of <i>D. (R.) misoolensis</i> , which they elevated to full species status.	
<i>misoolensis</i> (Ochs, 1955)	Misool Is.

Genus *Gyrinus* Geoffroy, 1762Subgenus *Gyrinus* Geoffroy, 1762

Note: Geoffroy's original use of the name *Gyrinus* in 1767 was rejected by ICZN Opinion 228 (ICZN 1954) in which it was ruled that Geoffroy's names as a whole were not available for nomenclatorial purposes, because he did not apply the principles of binominal nomenclature, as required by Proviso (b) to Article 25 of the *Règles*. However, this ruling also invited specialists in the groups involved to submit applications to the Commission for the validation, under the Plenary Powers, of any name published in it, the rejection of which would, in their opinion, lead to instability or confusion in the nomenclature of the group concerned. In the case of *Gyrinus*, an application was made, and the name under Geoffroy's authorship was conserved under ICZN Opinion 1754 (ICZN, 1994a).

- ahlwarthi* Ochs, 1949 West Central New Guinea
Note: In the original checklist (Polhemus, 2011) this species name was incorrectly spelled as “*ahlwarthi*” but proper spelling is in fact “*ahlwarthi*” as amended here.
- brincki* Svensson, 1991 West Central New Guinea
- convexiusculus* Macleay, 1873 Widespread
Note: As discussed previously, the author of this species is amended from “MacLeay” to “Macleay” in the current checklist.
- sericeolimbatus sericeolimbatus* Régimbart, 1883 Widespread
Note: The other subspecies, *G. sericeolimbatus wegneri* Ochs, 1959, is endemic to Timor.
- toxopeusi* Ochs, 1955 West Central New Guinea

ACKNOWLEDGMENTS

The author thanks Hans Fery of Berlin, Germany for his meticulous review of the manuscript, which noted many small but important corrections.

REFERENCES

- Ball, A.** 1932. Résultats scientifiques du voyage aux Indes orientales néerlandaise de LL. AA. RR. le prince et la princesse Leopold de Belgique. Coleoptera. Dytiscidae, Gyrinidae. *Mémoires du Musée Royal d'Histoire Naturelle de Belgique* **4**: 17–14.
- Brinck, P.** 1981. *Spinosodineutes* (Coleoptera: Gyrinidae) in New Guinea and adjacent islands. *Entomologica Scandinavica Supplement* **15**: 353–364.
- Brinck, P.** 1983. A revision of *Rhombodineutus* Ochs in New Guinea (Coleoptera: Gyrinidae). *Entomologica Scandinavica* **14**: 205–233.
- Brinck, P.** 1984. Evolutionary trends and specific differentiation in *Merodineutus* (Coleoptera: Gyrinidae). *International Journal of Entomology* **26**(3): 175–189.
- Gustafson, G. & Miller, K. B.** 2016. Revision of the Southeast Asia whirligig beetle genus *Porrhynchus* Laporte, 1835 (Coleoptera: Gyrinidae: Gyrininae: Dineutini). *The Coleopterists Bulletin* **70** (4): 675–714.
- Gustafson, G. & Miller, K. B.** 2017. Systematics and evolution of the whirligig beetle tribe Dineutini (Coleoptera: Gyrinidae: Gyrinini). *Zoological Journal of the Linnean Society*, **20**: 1–33.
- International Commission on Zoological Nomenclature.** 1954. Opinion 228. Rejection for nomenclatorial Purposes of Geoffroy, 1 762, Histoire Abrégée des Insectes Qui Se Trouvent Aux Environs de Pans. *Opinions and Declarations Rendered by the International Commission on Zoological Nomenclature* **4**(18): 209–220.

- International Commission on Zoological Nomenclature.** 1994. Opinion 1754. Histoire abrégée des insectes qui se trouvent aux environs de Paris (Geoffroy, 1762): some generic names conserved (Crustacea, Insecta). *Bulletin of Zoological Nomenclature* **51**: 58–70.
- Macleay, W. S.** 1825. *Annulosa Javanica, or an attempt to illustrate the natural affinities and analogies of the insects collected in Java by T. Horsfield*. Published by the author, London. 50 pp.
- Ochs G.** 1925. Über papuanische Gyriniden. *Senckenbergiana* **7**: 172–177.
- Ochs G.** 1926. Die Dineutini. 2. Tribus der Unterfam. Enhydrinae, Fam. Gyrinidae (Col.). *Entomologische Zeitschrift* **40**: 61–74, 112–126, 129–140, 190–197.
- Ochs G.** 1929. Über einige neue und bemerkenswerte Gyriniden, vorzüglich aus dem Dresdener Museum. *Entomologische Blätter* **25**: 197–200.
- Ochs G.** 1934. Prof. Dr. E. Handschin, Studienreise auf den Sundainseln und in Nordaustralien, 1930–1932. *Mittheilungen der Schweizerischen Entomologischen Gesellschaft* **16**: 100–102.
- Ochs G.** 1937. Ueber neue und interessante Gyriniden aus dem Naturhistorischen Museum in Basel. *Decheniana* **95B**: 64–70.
- Ochs G.** 1949. A revision of the Australian Gyrinidae. *Records of the Australian Museum* **22** (2): 171–198.
- Ochs G.** 1955. Die Gyriniden-Fauna von Neuguinea nach dem derzeitigen Stand unserer Kenntnisse (Coleoptera: Gyrinidae). *Nova Guinea, new series*, **6** (1): 87–154.
- Ochs G.** 1960. Nachtrag zur Gyriniden-Fauna von Neuguinea. *Opuscula Zoologica* **53**: 1–4.
- Ochs G.** 1967. Neue Gyriniden aus dem Museum G. Frey in Tutzing (Gyrinidae, Col.). *Entomologische Arbeiten aus dem Museum G. Frey* **18**: 412–418.
- Polhemus, D. A.** 2011. New distributional records for Gyrinidae (Insecta: Coleoptera) on New Guinea and nearby islands, with a checklist of New Guinea species. *Zootaxa*, **2900**: 52–68.
- Régimbart, M.** 1882a. Note IV. New species of Gyrinidae in the Leyden Museum. *Notes from the Leyden Museum*, **4**: 59–71.
Note: Although the date for this work was cited as 1881 in the paper containing the original checklist (Polhemus, 2011), and other authors have used this date as well, examination of an original volume containing the publication housed in the Bishop Museum library has the date “January 1882” indicated on the inside cover for the part in which Régimbart’s article appeared.
- Régimbart, M.** 1882b. Gyrinides nouveaux de la collection du musée civique de Gênes. *Annali del Museo Civico di Storia naturale di Genova* (**18**): 70–74.
- Régimbart, M.** 1882c. Essai monographique de la famille des Gyrinidae. *Annales de la Société Entomologique de France* **6**(2): 401–458.
- Régimbart, M.** 1884. Essai monographique de la famille des Gyrinidae. *Annales de la Société Entomologique de France* **6**(3): 381–482.
Note: A citation in Hatch (1925, *Bulletin of the Brooklyn Entomological Society* **20** (3): 101–114) indicates that the proper pagination for this article should be 381–482, rather than 381–470 as listed by Polhemus (2011) and other authors.
- Régimbart, M.** 1892. Haliplidae, Dytiscidae, et Gyrinidae. Viaggio di Lamberto Loria nella Papuasias orientalis. *Annali del Museo Civico di Storia Naturale di Genova* (2) **2**: 978–997.
- Régimbart, M.** 1899. Dytiscidae et Gyrinidae nouveaux du musée civique de Gênes. *Annali del Museo Civico di Storia Naturale di Genova* (2) **20**: 193–198.

-
- Régimbart, M.** 1906. Dytiscidae, Gyrinidae et Hydrophilidae. *Nova Guinea, Résultats des L'Expédition Scientifique Néerlandaise à la Nouvelle Guinée en 1903 sous les auspices de Arthur Wichmann*, **5** (Zoologie): 21–22.
- Régimbart, M.** 1907. Essai monographique de la famille des Gyrinidae. *Annales de la Société Entomologique de France* **76**: 137–245.
- Surbakti, S., Balke, M., Hajek, J. & Gustafson, G.** 2021. Notes on *Dineutes helleri* Ochs, 1925, with new records for the Cyclops Mountains Whirligig Beetle, *Dineutes h. steuberi* Ochs, 1955 (Coleoptera, Gyrinidae). *Check List* **17**(4): 1061–1066.
<https://doi.org/10.15560/17.4.1061>
- Svensson, B. W.** 1991. Morphological variation in *Gyrinus sericeolimbatus* Rég. in New Guinea and description of a new *Gyrinus* species (Coleoptera: Gyrinidae). *Systematic Entomology*, **16**: 499–514.
- Zimmermann, A.** 1924. Gyrinidae. Neue Dineutes-Arten aus Neu-Guinea. *Nova Guinea, Résultats des Expéditions Scientifiques a la Nouvelle Guinée* **15** (Zoologie), part 1: 1–4.

APPENDIX

Additional Notes and Addenda to Polhemus (2011)

The following corrections are noted regarding the work of Polhemus (2011) on additional Gyrinidae records from New Guinea:

- 1) **Addendum:** Change “MacLeay” to “Macleay” throughout, as per the interpretation adopted in the current checklist.
- 2) **Addendum:** Change “Zimmerman” to “Zimmermann” throughout as per the current checklist.