

Agabus amnicola (J. SAHLBERG) and *A. jacobsoni* ZAITZEV, two poorly known species of the *uliginosus*-group (Coleoptera: Dytiscidae)

A. N. NILSSON & M. TOLEDO

Abstract

The Nearctic *Agabus triton* FALL, 1922 is considered a junior synonym of *Gaurodytes amnicola* J. SAHLBERG, 1880, described from NW Siberia. *Agabus jacobsoni* ZAITZEV, 1905 is redescribed from two specimens from the Amur Province, in the Far East of Russia. A key is given to the species of the *uliginosus*-group for males.

Key words: Coleoptera, Dytiscidae, *Agabus*, *uliginosus*-group, taxonomy, new synonymy, Siberia.

Introduction

Agabus LEACH is a chiefly Holarctic genus of medium-sized water beetles with about 200 species. Some of the species that were described at or before the turn of the century are poorly known as they never have been found again. The identities of such species need to be examined in order to revise old classifications and establish intercontinental relationships (LARSON & NILSSON 1985).

Agabus jacobsoni ZAITZEV, 1905 is one of the most poorly known species of the genus. It was described from a unique male collected near St. Petersburg in 1856 according to the original label of the holotype, and no additional records are known from the literature. ZAITZEV (1907) found it most likely that the range of this species included Siberia, and JACOBSON (1905) adopted this view and gave the distribution as Siberia. Both ZIMMERMANN (1920, 1934) and WINKLER (1924) followed JACOBSON (1905). Finally, ZAITZEV (1953) suggested that the holotype was mislabelled, as the species never had been recorded again from European Russia.

Equally poorly known is *A. amnicola* (J. SAHLBERG, 1880), known only from a single male from NW Siberia. ZAITZEV (1953) associated it with *A. jacobsoni* and noted that the study of the holotype was needed in order to determine its status. We will here show that the two species are distinct, and that *A. amnicola* is known from North America under another name.

Acronyms

ANNU Coll. Anders N. Nilsson, Umeå, Sweden

MNHS Museum of Natural History, Stockholm, Sweden

MTB Coll. Mario Toledo, Brescia, Italy

TUM, Turku University Museum, Finland

ZMSP Zoological Museum, St. Petersburg, Russia

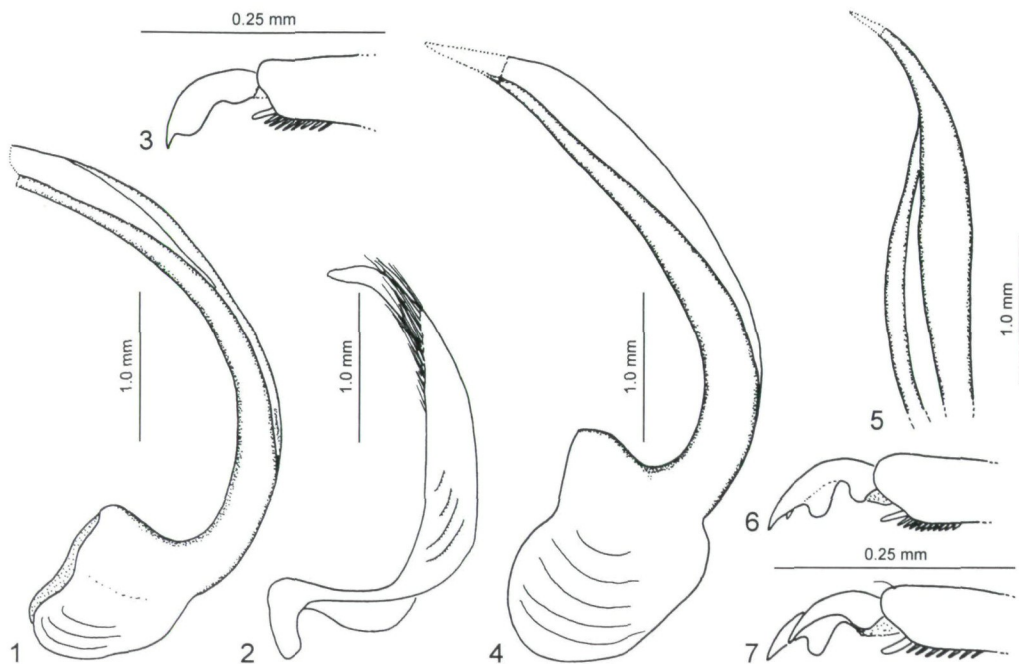
Agabus amnicola (J. SAHLBERG)

Gaurodytes amnicola J. SAHLBERG 1880: 58 (orig. descr.); ZIMMERMANN 1934: 172 (descr.); ZAITZEV 1953: 244 (descr.)

Agabus triton FALL 1922: 17 (orig. descr.); LARSON 1975: 343 (descr.) **syn. n.**

Agabus amnicola (J. SAHLBERG 1880); POPPIUS 1910: 351 (cat.); ZIMMERMANN 1920: 156 (cat.)

TYPE LOCALITY: of *G. amnicola*: "insulae Nikandrovski ostrov" (NW Siberia, upper Yenisey, 70°10'N); of *A. triton*: "Edmonton, Alberta" (Canada).



Figs. 1 - 3: *Agabus amnicola*, holotype male (1) penis, lateral view; (2) paramere, external view; (3) anterior protarsal claw.

Figs. 4 - 7: *Agabus jacobsoni* (4) penis, lateral view; (5) penis, dorsal view; (6) protarsal claw, anterior view; (7) protarsal claw, posterior view.

Scale for Figs. 3, 6 - 7 (at left): 0.25 mm; scale for Figs. 1, 2, 4, 5 (at right): 1.0 mm.

TYPE MATERIAL: *G. amnicola*: Holotype ♂ in TUM, labelled "ins. Nikandr. / J. Sahlbg. / J. Sahlbg. ind. typ. / 27 red square, *G. amnicola* J. Sahlbg."; Of *A. triton* not seen.

ADDITIONAL MATERIAL:

CANADA: Alberta: Edmonton (1 ♂ in MNHS); Highway 1A, 8 miles W Calgary, 18.IV.1971, leg. Carr & Larson (1 ♂ in ANNU).

DESCRIPTION: See LARSON (1975). Holotype of *G. amnicola* has total length 6.8 mm, maximum width 3.8 mm, and WC/WS 2.0. Male protarsal claw, penis, and paramere as in Figs. 1 - 3.

DISTRIBUTION: A Holarctic species known from NW Siberia and the following Canadian Provinces: Alberta, Saskatchewan, and Manitoba (LARSON & ROUGHLEY 1991).

Agabus jacobsoni ZAITZEV

Agabus jacobsoni ZAITZEV 1905: 225 (orig. descr.); JACOBSON 1905: 429 (cat.).

Agabus jacobsoni ZAITZEV 1905: ZIMMERMANN 1920: 167 (incorr. subseq. spell., cat.); WINKLER 1924: 230 (cat.).

Gaurodytes jacobsoni (ZAITZEV 1905); ZIMMERMANN 1934: 171 (descr.); ZAITZEV 1953: 242 (descr.).

TYPE LOCALITY: "Russland: St.-Petersburg, Moskauw Chaussée" (Russia, St. Petersburg).

TYPE MATERIAL: Holotype ♂ not found in ZMSP.

ADDITIONAL MATERIAL:

RUSSIA: Amur Prov., Komsomolsk-na-Amure, Gorniy, 2.VII.1993, leg. Gorodinskiy (1 ♂ and 1 ♀ in MTB).

DESCRIPTION: Body size and shape (lower size values represent female in which width could not be measured). Total length 7.1 - 8.1 mm, without head 6.6 - 7.6 mm; maximum width 4.8

mm; maximum width of pronotum 3.2 - 3.6 mm. Body elongate oval with sides relatively weakly curved.

Colour. Dorsal surface dark piceous: anterior head margin, pair of interocular spots and lateral pronotal and elytral margins broadly rufous. Antenna and palpi rufotestaceous with slight apical infuscation. Ventral surface chiefly black; prosternal process, hypomeron, epipleuron and posterior margins of abdominal sterna 3-6 rufous. Legs rufous.

Sculpture and setation. Dorsal surface with microsculpture simple and consisting of polygonal meshes of irregular size and shape, meshes frequently with relatively strong punctures at intersections. Meshes increasing in average size from head to elytron in male: female elytron opaque with very small rounded meshes deeply engraved. Head with 0-1 additional sensillar punctures. Pronotum with anterior row of punctures coarse and with narrow gap medially; posterior row not broken sublaterally. Elytron with serial punctures in irregular rows; strong in male and obsolete in female. Metacoxal plate with primary reticulation obsolete and provided with longitudinally stretched irregular secondary reticulation. Last abdominal sternum with strong punctation and transverse striation in posterior half, microreticulation reduced. Metafemur with posterodistal setal comb short and irregular. Metatibia provided with AV spines along entire length; punctures well separated. Metatarsomere 1 with 4 PD and 5 PV spines; tarsomere 2 with 2 additional PV spines.

Structural features. Clypeus with anterior marginal bead narrowly broken medially. Pronotum with anterior bead continuous; lateral bead broad, sinuate at anterior angle. Prosternal process tectiform with apex acute; relatively short and narrow. Metasternum with anteromedial emargination short. Metasternal wing relatively short and broad, WC/WS 2.16 - 2.36.

Male. Anterior margin of abdominal sternum 3 not raised to evident stridulatory ridge; sublaterally provided with traces of short comb. Penis with basal apodeme large, and dorsal groove twisted to left (Figs. 4 - 5). Paramere strap-like, relatively narrow. Pro- and mesotarsomeres 1-3 dilated and ventrally provided with numerous small, oblong, adhesive discs. Anterior protarsal claw longer than posterior claw and provided with blunt median tooth (Figs. 6 - 7). Metatarsomeres 1-3 provided with ventral setal fringe.

DISTRIBUTION: The species has been recorded from St. Petersburg in European Russia and from the Far East Amur Province. More evidence is needed in order to say whether *A. jacobsoni* is a rare Transpalearctic species or whether it is restricted to the Far East and described from a mislabelled specimen.

Classification

Agabus amnicola and *A. jacobsoni* belong to the *uliginosus*-group together with the two Palearctic species *A. uliginosus* (LINNAEUS, 1791) and *A. vereschaginae* ANGUS, 1984. The delimitation of this group presents severe problems, especially in the Nearctic fauna. LARSON (1989) included the following three Nearctic species in the *uliginosus*-group: *A. falli* (ZIMMERMANN, 1934), *A. margaretae* LARSON, 1975 and *A. triton* (= *G. amnicola*).

Key to species of *uliginosus*-group for males

- | | | |
|---|---|----------------------|
| 1 | Antennomeres 7-11 dilated anteriorly, dorsoventrally flattened and forming a loose club | <i>vereschaginae</i> |
| - | Antenna normal, without club..... | 2 |
| 2 | Paramere long and narrow, rod-like, with very long subapical setal brush | <i>margaretae</i> |
| - | Paramere strap-like..... | 3 |
| 3 | Pronotum with anterior bead continuous. Metatarsomere 1 with PD spines present..... | 4 |

- Pronotum with anterior bead broadly broken medially. Metatarsomere 1 without PD spines *falli*
- 4 Suture between abdominal sterna 2-3 raised to acute ridge. Penis substraight in dorsal view *uliginosus*
- Suture between abdominal sterna 2-3 not raised to ridge. Penis with apex twisted in dorsal view (Fig. 5) 5
- 5 Anterior protarsal claw spatulate (Fig. 3), i.e. with very short narrow apex instead of broad tooth in distal half *annicola*
- Anterior protarsal claw denticulate (Fig. 6), i.e. with broadly rounded tooth medially *jacobsoni*

Acknowledgements

We thank Dr. H. Hippa, Turku, and the late Dr. P. Lindskog, Stockholm, for the loan of specimens from collections under their former care.

References

- FALL, H.C. 1922: A review of the North American species of *Agabus* together with a description of a new genus and species. - Privately Printed, Mount Vernon, NY: 36 pp.
- JACOBSON, G.G. 1905: Coleoptera of Russia and western Europe. Volume 1. - Petersburg, A.F. Devrien, pp. 1-656. (In Russian.)
- LARSON, D.J. 1975: The predaceous water beetles (Coleoptera: Dytiscidae) of Alberta: systematics, natural history and distribution. - *Quaestiones Entomologicae* 11: 245-498.
- LARSON, D.J. 1989: Revision of North American *Agabus* Leach (Coleoptera: Dytiscidae): introduction, key to species groups, and classification of the *ambiguus*-, *tristis*-, and *arcticus*-groups. - *The Canadian Entomologist* 121: 861-919.
- LARSON, D.J & NILSSON, A.N. 1985: The Holarctic species of *Agabus* (sensu lato) Leach (Coleoptera: Dytiscidae). - *The Canadian Entomologist* 117: 119-130.
- LARSON, D.J. & ROUGHLEY, R.E. 1991: Family Dytiscidae predaceous diving beetles, pp. 62-72. - In: Bosquet, Y. (ed.). Checklist of beetles of Canada and Alaska. - Ottawa. Research Branch, Agriculture Canada Publications 1861/E.
- POPPIUS, B. 1910: Die Coleopteren des arktischen Gebietes. - *Fauna Arctica* 5: 289-447.
- SAHLBERG, J. 1880: Bidrag till nordvestra Sibiriens insektfauna. Coleoptera. I. - *Kungliga svenska Vetenskaps Akademiens Handlingar* 17(4): 1-115 + 1 pl.
- WINKLER, A. 1924: Catalogus Coleopterorum regionis palearcticae. Pars 2, pp. 113-240. - Wien, Albert Winkler.
- ZAITZEV, Ph.A. 1905: Zwei neue Dytisciden-Arten (Coleoptera). - *Entomologicheskoe Obozrénie* 5: 225-226.
- ZAITZEV, Ph.A. 1907 (1906): Diving and whirligig beetles (Haliplidae, Dytiscidae and Gyrinidae) of the St. Petersburg Gouv. - *Annuaire du Musée Zoologique de l'Académie Impériale des Sciences de St.-Petersbourg* 11: 69-114. (In Russian.)
- ZAITZEV, Ph.A. 1953: Coleoptera. Volume 4. Families Amphizoidae, Hygrobiidae, Haliplidae, Dytiscidae, Gyrinidae. - *Fauna of the U.S.S.R., New Series* 58: 1-377. (In Russian.)
- ZIMMERMANN, A. 1920: Pars. 71. Dytiscidae, Haliplidae, Hygrobiidae, Amphizoidae. - In S. Schenkling (ed.): *Coleopterorum Catalogus*. - Berlin: W. Junk, 326 pp.
- ZIMMERMANN, A. 1934: Monographie der paläarktischen Dytiscidae. V. Colymbetinae (1. Teil). - *Koleopterologische Rundschau* 20: 138-214.

Anders N. NILSSON

Department of Animal Ecology, University of Umeå, SE - 901 87 Umeå, Sweden

Mario TOLEDO

Museo di Storia Naturale dell'Università, via Farini 90, I - 43100 Parma, Italy

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Koleopterologische Rundschau](#)

Jahr/Year: 1999

Band/Volume: [69_1999](#)

Autor(en)/Author(s): Nilsson Anders N., Toledo Mario A.

Artikel/Article: [Agabus amnicola and A. jacobsoni \(Dytiscidae\). 29-32](#)