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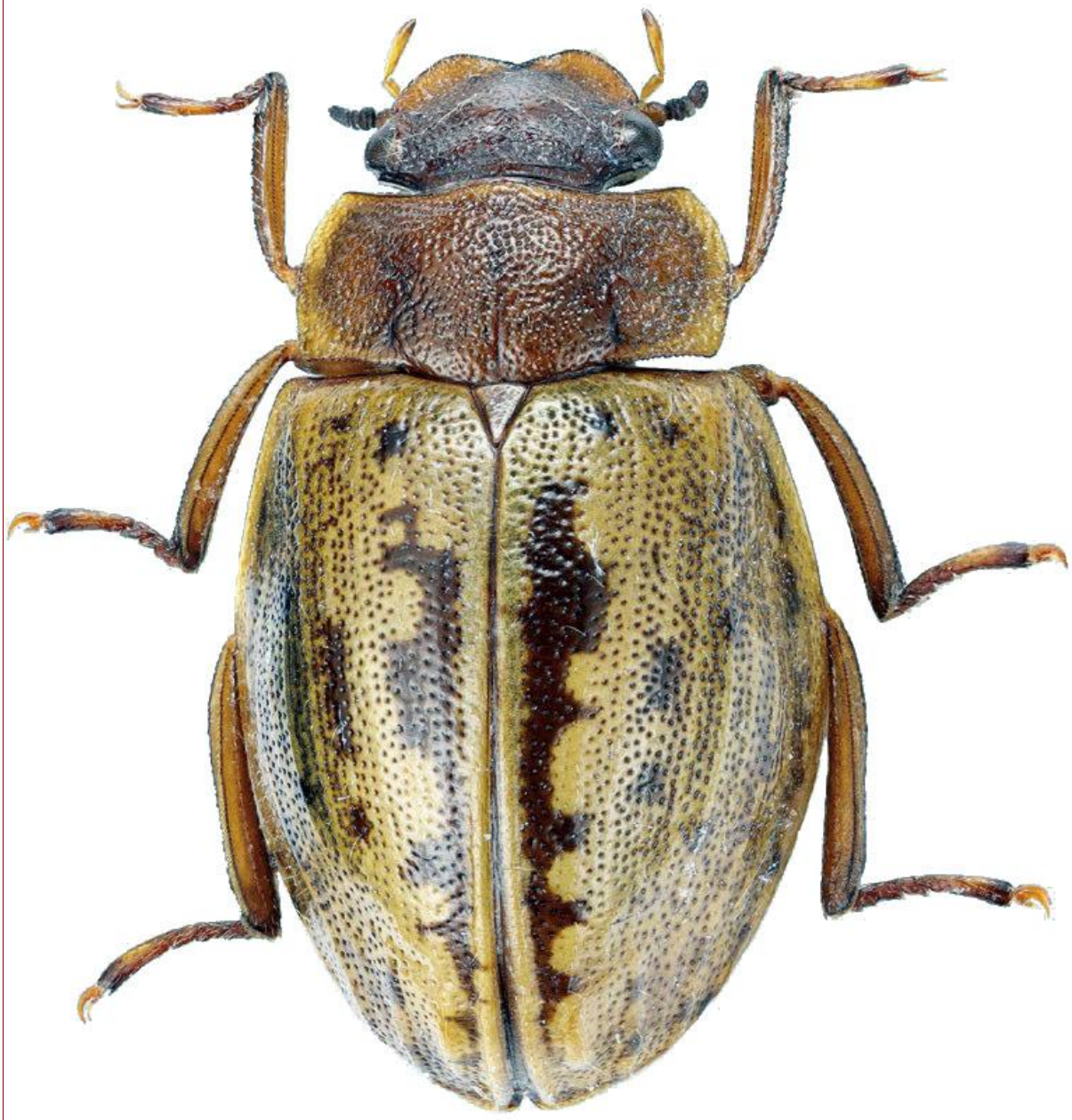
LATISSIMUS

NEWSLETTER OF THE BALFOUR-BROWNE CLUB



Number Fifty Four **April 2023**

Cover photograph*: Spercheus emarginatus* (Schaller), as found in Tashkent Botanical Garden. See page 1. Photograph Lars Hendrich and Michael Balke

ADDRESSES Contacts for articles and reviewed works are given at the end of this issue of ***Latissimus***. The address for other correspondence is: Garth Foster, 3 Eglinton Terrace, Ayr KA7 1JJ, Scotland, UK – latissimus@btinternet.com

BIDESSUS UNISTRIATUS (GOEZE, 1777) REDISCOVERED IN EAST SUSSEX

Sam J L Tasker

Bidessus unistriatus is considered Critically Endangered in Britain, with a scattering of post-1980 records from Norfolk and the New Forest, being found in only three sites in three hectads since 2000 (Foster 2010). Indeed, no specimens at all have been found in Britain since 2008, despite targeted attempts in Norfolk and the single recent New Forest site. Always restricted to southern and eastern England, the species was slightly more widespread and abundant in the past, occurring in both natural and anthropogenic habitats (Foster *et al*. 2016).

Figure 1 A Castle Water, Rye Harbour. Red arrow indicates approximate area in which the *Bidessus* was netted; **B** the *Bidessus unistriatus* specimen itself

A lone *B. unistriatus* was recorded on 5 May 2022 from Castle Water, SWT Rye Harbour (TQ925191), whilst sampling within a *Phragmites australis* reedbed with dense submerged New Zealand Pygmyweed *Crassula helmsii*, in approximately 20 cm of water (Figure 1). Despite additional sampling in Castle Water and nearby waterbodies, no further examples were taken. This is the first record for East Sussex since 1947, when Jack Balfour-Browne noted the species as ‘common’ in a pool behind Camber Sandhills, which was subsequently lost to development (Foster 1972). The 2022 find is also noteworthy in demonstrating that this rare species can occur in the presence of *C. helmsii*, often considered detrimental to freshwater insects. Clearly further effort in the Rye Harbour area would be worthwhile, particularly attempts to locate a possible colony.

FOSTER GN 1972. The aquatic Coleoptera of East Sussex. *Entomologist’s Gazette* **23** 25-60.
FOSTER GN 2010. A review of the scarce and threatened Coleoptera of Great Britain Part (3): Water beetles of Great Britain. *Species Status* **1**. Joint Nature Conservation Committee, Peterborough.

FOSTER GN, BILTON DT & NELSON BH 2016. *Atlas of the Predaceous Water Beetles* (*Hydradephaga*) *of Britain and Ireland*. Field Studies Council.

Received March 2023

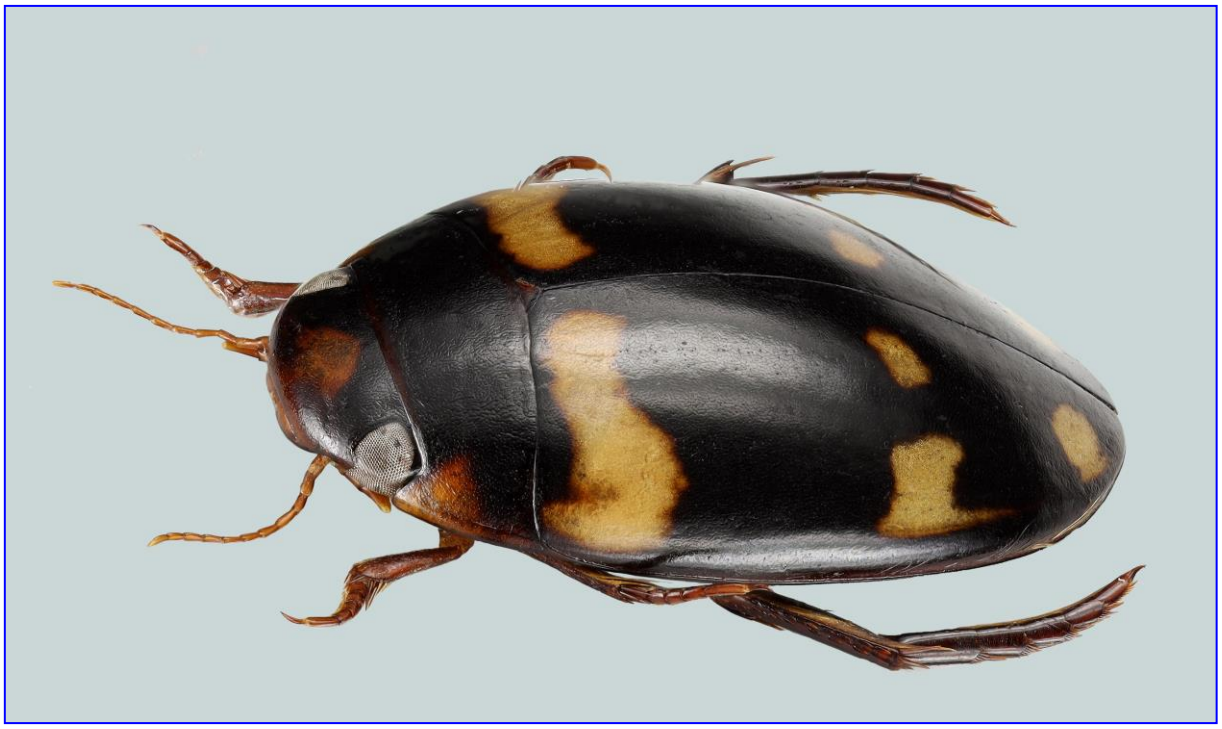
SPERCHEUS EMARGINATUS IN UZBEKISTAN

Specimens were found in Tashkent Botanical Garden in 2005 and on the Chirchiq floodplain in 2009. See our front cover.

HENDRICH L & BALKE M 2023. First record of the filter-feeding water beetle *Spercheus emarginatus* (Schaller, 1783) in Uzbekistan (Coleoptera, Spercheidae). *Spixiana* **45** 255-256.

PLATYNECTES

How good is black with a splash of yellow? Seven of these elegant diving beetles are newly described, including here *P. barana* in a photograph courtesy of Jiří Hájek. A generic name change appears to be in the offing.



HÁJEK J, ŠŤASTNÝ J, HENDRICH L & BALKE M 2023. A review of the genus *Platynectes* from the Solomon Islands (Coleoptera: Dytiscidae: Agabinae). *Acta Entomologica Musei nationalis Pragae* **63** 57-74.

SPHAERIDIUM RECORDS

The following are new country records. *S. bipustulatum* Fab. from Greece and Syria; *S. lunatum* Fab. from Greece, Iran, Russia in Eastern Siberia, Morocco; *S. marginatum* Fab. from Austria, Greece, Iran, and Morocco; *S. scarabaeoides* (L.) from Andorra, Greece, Cyprus, Syria, and Lebanon.

TERZANI F & ROCCHI S 2022. Nuovi dati corologici del genere *Sphaeridium* Fabricius, 1775 (Insecta: Coleoptera: Hydrophilidae: Sphaeridiinae: Sphaeridiini). *Quaderno di Studi e Notizie di Storia Naturale della Romagna* **56** 183-190.

By use of the research ship Minerva water beetles were found on 31 of the little islands around Sardinia from 1985 to 1990. Forty-nine taxa are reported, the most frequent being the rockpool *Ochthebius quadricollis* Mulsant, found on nineteen islands, being the only species on Barrettinelli, here as photographed by Roberto Poggi, use of the photograph being facilitated by Saverio Rocchi. Fourteen other species of *Ochthebius* dominate the lists.

ROCCHI S & POGGI R 2022. Richerche zoologiche della nave oceanografica "Minerva" (C.N.R.) sulle isole circumsarde. XXXIV. Coleoptera Helophoridae, Hydrochidae, Hydrophilidae e Hydraenidae). *Annali de Museo Civico de Storia naturale "G. Doria"* **115** 1-25.

JAPANESE *ANACAENA*

The only *Anacaena* known from Japan before this paper was *A. asahinai* Satô, known from Hokkaidô, Honshû and Russia. Three new species are described from the Ryukyu islands. It is remarked that in the Ryukyu Archipelago the proportion of endemic species in Hydrophilidae is higher in aquatic Hydrophilidae than in Dytiscidae, but still much lower than in stream-living Hydraenidae and Elmidae.

MINOSHIMA Y N, KAMITE Y & FIKÁČEK M 2023. The genus *Anacaena* Thomson from the Ryukyu Archipelago of Japan (Coleoptera, Hydrophilidae). *Deutsche Entomologische Zeitschrift* **70** 145-157.

***HYDROGLYPHUS* IN NEW GUINEA**

The primarily Australian *H. godeffroyi* has been found in Papua and the Kei Islands.

HENDRICH L, SURBAKTI S & BALKE M 2022. First record of the Australian diving beetle *Hydroglyphus godeffroyi* (Sharp, 1882) in New Guinea (Coleoptera, Dytiscidae, Bidessini). *Spixiana* **45** 52.

MALAWI HYDRAENIDAE

Three new species are described from mountains in Malawi, *Coelometopon dedzae* from Mount Dedza, *Hydraena* (*Hydraenopsis*) *mulanje* and *Ochthebius* (*Asiobates*) *erinaceus* from Mount Mulamje, the highest mountain in the country at 3,200 metres asl. The Afrotropical list now has 146 *Hydraena* species. Thanks to David Bilton for use here of the image of *C. dedzae*.

BILTON D T 2023. New species and new records of minute moss beetles from East Africa (Coleoptera: Hydraenidae). *Acta Entomologica Musei nationalis Pragae* **63** 103-110.

GROSSETO IN TUSCANY

Data are presented on 226 taxa including 25 species newly recorded in the Province of Grosseto. The latter are *Haliplus fulvus* (Fab.), *Hygrobia hermanni* (Fab.), *Liopterus haemorrhoidalis* (Fab.), *Acilius sulcatus* (L.), *Eretes griseus* (Fab.), *Bidessus delicatulus* (Schaum), *Helophorus rinki* Angus, *Enochrus testaceus* (Fab.), *Hydraena paganettii* Ganglbauer, *Limnebius myrmidon* Rey, five species of *Ochthebius*, *Contacyphon laevipennis* (Tournier), *Dryops rufipes* (Krynicki), *D. striatellus* (Fairmaire), *Eubria palustris* (Germar), *Prasocuris phellandrii* (L.), and five weevils.

ROCCHI S 2022. Coleotteri acquatici e semiacquatici della Provincia di Grosseto (Toscana, Italia centrale) (Insecta: Coleoptera: Gyrinidae, Haliplidae, Noteridae, Hygrobiidae, Dytiscidae, Helophoridae, Georissidae, Hydrochidae, Hydrophilidae, Hydraenidae, Scirtidae, Elmidae, Dryopidae, Limnichidae, Heteroceridae, Psephenidae, Chrysomelidae, Curculionidae, Erirhinidae). *Bollettino del Museo Civico di Storia Naturale di Verona, Botanica Zoologica* **46** 29-90.

ELMIS BOSNICA

E. bosnica (Zaitzev) is the dominant water beetle in springs in Croatia. A distribution map shows its occurrence in Croatia, Bosnia and Herzegovina, Montenegro and the Republic of North Macedonia. The male genitalia are depicted for this species , *E. aenea* (Müller) and *E. rioloides* (Müller): differences in the distance between the tips of the parameres and the tip of median lobe are considered crucial. DNA barcoding data have been supplied to Genbank.

STANKOVIĆ V M, MAĐARIĆ B B, JÄCH M A & KUĆINIĆ M 2022. Ubiquitous but ignored? A case of water beetle in southeastern Europe. *Diversity* **14** 1-19.

KOLEOPTEROGISCHE RUNDSCHAU 92

It is a mark of a good journal that one notices (and frets) when it does not appear at the usual time. This issue is a little late, and was worth the wait. The front cover shows a staph, but this one, *Hesperomimus bambusae* Schillhammer & Kovac, is aquatic, living by the water-filled internode cavities of bamboo and feeding on the mosquito larvae that breed there.

SCHILLHAMMER H & KOVAV D 2023. Review of the Oriental genus *Hesperomimus* Cameron, 1937. *KR* **92** 103-133.

HYDATICUS - NEW GROUPS, NEW SPECIES

Species of the *Hydaticus* (*Prodaticus*) *fabricii* group are reviewed. Eighteen species, including the newly described *H*. *geiseri* and *H*. *mazzoldii* are covered. The *H*. *grammicus* species group is newly established, distinguished from the *H*. *fabricii* group by the male genitalia. Besides *H*. *grammicus* (Germar), seen here, this group includes *H*. *thermonectoides* Sharp and two new species, *schoenleithneri* and *shaverdoae* sp. n., *H. parallelus* Clark, *H*. *chrisi* Nilsson and another new species, *borneensis,* are included in this review, because their elytral colour patterns are like those of some species of the *H*. *fabricii* and *H*. *grammicus* groups, but their male genitalia are distinctly different.

WEWALKA G 2023. Review of the *Hydaticus fabricii* group and the newly established *H. grammicus* group (Dytiscidae) *KR* **92** 1-72.

HALIPLUS UPDATE

A third update on the World Catalogue of Haliplidae (Coleoptera) (van Vondel 2005) is provided.

van VONDEL B J 2023. World Catalogue of Haliplidae – corrections and additions, 3 (Haliplidae) *KR* **92** 73-86.

HELOPHORUS GUTTULUS GROUP

A review of the *Helophorus guttulus* group include synonymisation of *Helophorus costulatus* Kuwert with *H. guttulus* Motschulsky, designation of a lectotype for *H. nivalis* Giraud, and discussion of the type localities for *H. costulatus, H. dormitans* (Sharp) and *H. guttulus*.

SHATROVSKIY A G, ANGUS R B & JÄCH M A 2023. Notes on the *Helophorus guttulus* group (Helophoridae) *KR* **92** 139–151.

HETERLIMNIUS IN JAPAN

Heterlimnius nitidus (Nomura) is redescribed, with the synonym *Optioservus rugulosus* Nomura, originally described on the same page but used less often as a name.

KAMITE Y 2023. A new synonymy in Japanese *Heterlimnius* (Elmidae) *KR* **92** 153-164.

HETEROCERUS IN SOUTH AFRICA

The new species belongs to the *bredoi* species group of Charpentier. Notes are provided on five other species found in South Africa by M. Snížek.

SKALICKÝ S 2023. *Heterocerus keimoesensis* sp.n. from the Republic of South Africa (Heteroceridae) *KR* **92** 165-171.

CORSICA SURVEY

This meeting produced a huge number of insect records including water beetles such as *Cybister tripunctatus africanus* Laporte de Castelnau, *Hemisphaera striato-punctata* Perris and *Hydroscapha granulum* Motschulsky, but with *Chasmogenus livornicus* Kuwert being the most important find. Philippe Ponel (photographed here by Jean Ichter) was responsible for many of the records.

TOUROULT J, PONEL P & SOLDATI F 2022. Coléoptères. pp. 26-33 in: J. Ichter *et al. La Planète Revisitée en Corse. Bilan scientifique des expéditions terrestres 2021: Côte orientale et Capicorsu.* Paris: Muséum nationale d'Histoire naturelle.

RHÔNE-ALPES POND ANALYSIS

One hundred and five ponds were surveyed in the Rhônes-Alpes, and were classified into five type of ponds in IndVal, each with characteristic species:- 1. "tourbières d'altitude" (*Agabus lapponicus* (Thomson), *Hydroporus sabaudus* Fauvel, *Anacaena globulus* (Paykull); 2. "mares ensoleillées semitemporaires" (*Agabus labiatus* (Brahm); 3. "mares à eaux fraîches (*Dytiscus circumcinctus* Ahrens); 4."marais forestiers" ("ll'ancienneté des milieux aquatiques est probable") *Agabus undulatus* (Schrank), *Ilybius neglectus* (Erichson), *Hydroporus angustatus* Sturm, *H. dorsalis* (Fab.), some of which are flightless; 5. "mares eutrophes et végétalisées" (*Cybister lateralimarginalis* (De Geer)). A table lists thirty characteristic species.

SAURAT R, GERBAUD A & BOGEY R 2022. Assemblage de coleoptères aquatiques rhône-alpins selon la diversité des mares - approche IndVal (Indicator Values). *Bulletin mensuel de la Société linnéenne de Lyon* **91** 76-85.

BALI DYTISCIDAE

Sixteen taxa are recorded from Bali, including *Copelatus oblitus* Sharp, *C. regimbartii* Branden, *C. sumbawensis* Régimbart and *Hydroglyphus laeticulus* (Sharp) newly recorded for the island. *Laccophilus parvulus parvulus* Aubé and *L. sharpi* Régimbart occupy this paddy field. The correspondent is Michael Balke, who permitted this use of the photograph by Nano Suprayitno.

SUPRAYITNO N, NARAKUSUMO R P, SARINO, BUDI A S, HENDRICH L, HÁJEK J & BALKE M 2022. A Citizen Science case study to chart Indonesian biodiversity: updating the diving beetle fauna of Bali (Coleoptera: Dytiscidae). *Treubia* **49** 115-136.

BENHS COLLECTIONS

For British biographical material Peter Chandler's overview belongs alongside Mike Darby's book (see ***Latissimus* 53** 19). The BENH History Society's rooms have several important beetle collections, in particular those of Ernest Charles Bedwell, Norman Joy, Arthur Massee, Harold Forster and Freddie Buck.

CHANDLER P J 2023. Composition of the Society's collections. *British Journal of Entomology and Natural History* 36 15-31.

***PELTODYTES CAESUS* IN WALES**

Amongst other species *P. caesus* (Duftschmid) was found in Glamorgan in 2022, previous records for Wales being on marshes beside the Severn Estuary.

DENTON J 2023. Some additions to the Glamorgan Coleoptera list. *British Journal of Entomology and Natural History* **36** 60.

VIETNAM NATURE RESERVE

The beetles found were *Canthydrus angularis* Sharp, *Cybister sugillatus* Erichson, *C. tripunctatus lateralis* (Fab.), *Hydaticus bipunctatus* Wehncke, *H. ricinus* Wewalka, and *Sandracottus mixtus* (Blanchard). The paper was sent by Sergey Ryndevich.

LUKASHUK A O, TRUONG X L & RYNDEVICH S K 2023. First record of true bugs (Hemiptera: Heteroptera) and beetles (Coleoptera) for Na Khau Natural Reserve in Vietnam. *Zoological Readings: 125th Anniversary Collection of Scientific Papers. Dr. Biol. Sciences Ivan Nikolaevich Serzhanin/Yanka Kupala State University; Grodno* pp. 11-12 [in Russian]

PALM PETIOLES IN ECUADOR

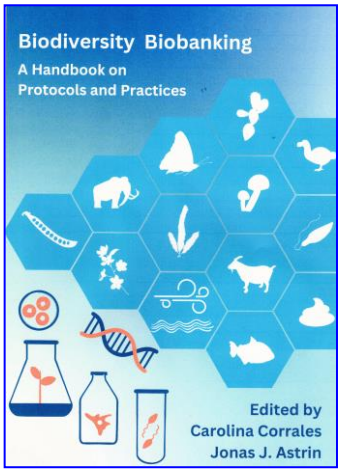
Fallen leaves of the Walking Palm, *Socratea*, in rainforest were found to support a *Platynectes* species. a *Desmopachria*, an *Aulonochares* provisionally assigned to *novoairensis* Giron & Short and seven species of *Copelatus* including *abonnenci* Guignot, *alternatus* Sharp, *amazonicus* Régimbart, and *concolor* Sharp.

RYNDEVICH S K 2023 [Temporary pools in the petioles of fallen palm leaves – atypical habitat for water beetles (Coleoptera: Dytiscidae, Hydrophilidae) in Ecuador] *Zoological Readings: 125th Anniversary Collection of Scientific Papers. Dr. Biol. Sciences Ivan Nikolaevich Serzhanin/Yanka Kupala State University, Grodno* pp. 255—257 [in Russian]

BEETLES IN MADHYA PRADESH

The following are named to species in this survey of the Narmada River, which discharges into the Arabian Sea in Gujarat: *Dineutus indicus* Aubé, *D. spinosus* Fab. and *D. unidentatus* Aubé, *Gyrinus convexiusculus* MacLeay, *G. smaragdinus* Régimbart, *Metagyrinus arrowi* (Régimbart), *Orectochilus andamanicus* Régimbart, *Copelatus assamensis* Vazirani, *C. freudei* Guignot, *C. indicus* Sharp, *Haliplus angustifrons* Régimbart, *H. arrowi* Guignot, *Dactylosternum hydrophiloides* (MacLeay), and *Hydrophilus indicus* (Bedel). An *Aulogyrus*, a *Hydraena* species and a *Stenelmis* species were also common. The absence of sensitive species is noted. The correspondent is Nisar Bhat.

PIR F A, BHAT N A & SHARMA S 2022. Assessment of the status of Narmada River by studying the diversity, species composition and abundance of aquatic beetles (Coleoptera). *Indian Hydrobiology* **21** 1-10.



BIOBANKING GUIDE

📖 CORRALES C & ASTRIN J I (eds) 2023. *Biodiversity biobanking - a handbook on protocols*. doi: 10.3897/ab.e101876 Sofia: Pensoft.

A guide to barcoding is welcome, and one might have expected an explanatory list of technical terms to start with rather than just abbreviations. BOLD is in the latter but GenBank is missing but its developer, NCBI, is there. There is probably as much guidance on the need to eliminate insects from samples of other organisms as there is about the particular needs of extracting insect DNA. The need to avoid using ethyl acetate as a killing agent is mentioned, as is the need to store in darkness in 95-96% alcohol. Propylene glycol is recommended as a cryoprotectant if material is stored at -80° C. But there is nothing else particularly insectan about this work.

CYBISTER LATERALIMARGINALIS TORQUATUS (FISCHER VON WALDHEIM) IN KAZAKHSTAN

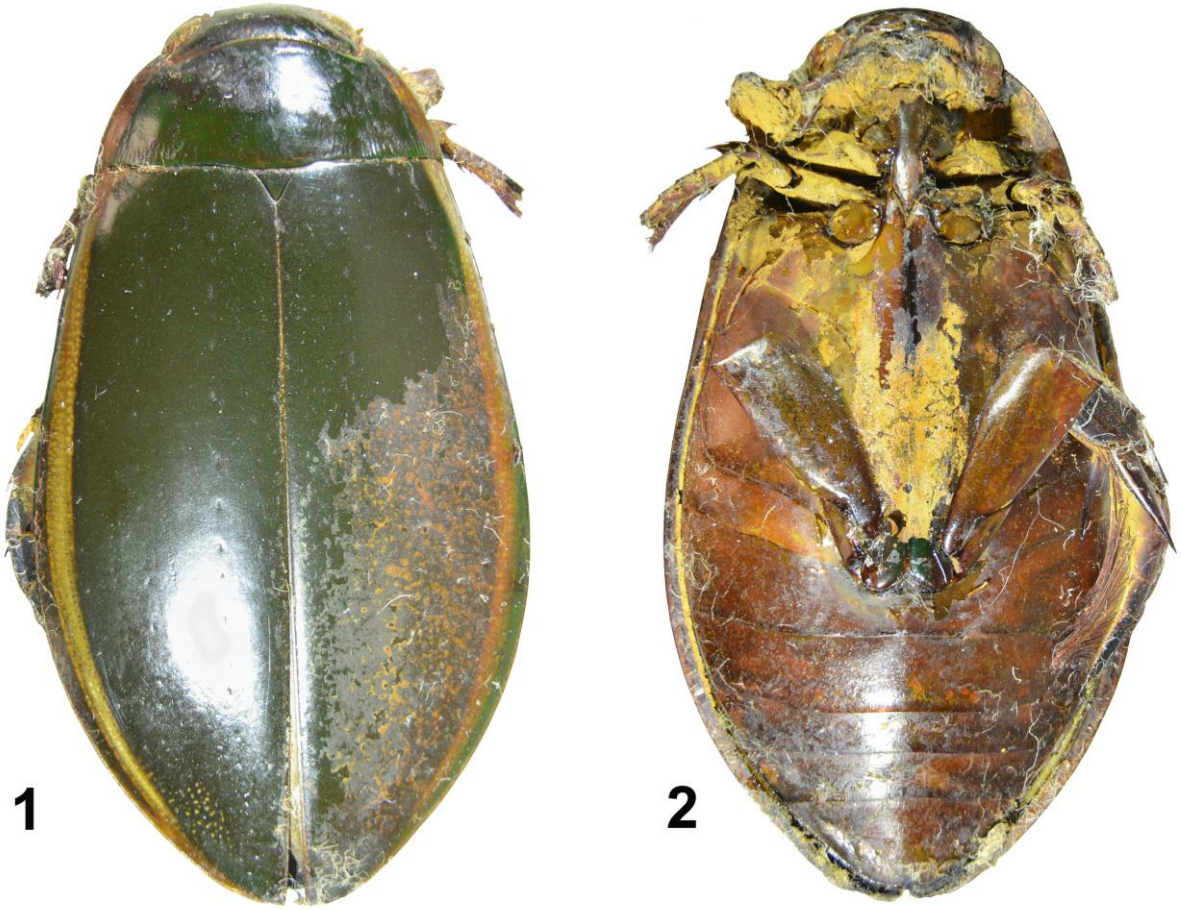
Sergey K Ryndevich

Cybister (*Cybister*) *lateralimarginalis* (De Geer, 1774) is a widespread species and has three subspecies. *C. lateralimarginalis ponticus* Sharp, 1882 is known only from Iraq. *C. lateralimarginalis lateralimarginalis* (De Geer, 1774) is recorded from Europe except in the north, from northern Africa, south-west Asia, Kazakhstan and possibly in Middle Asia (Kirejchuk 2001; Nilsson 2017). We have found this subspecies in the south of Kazakhstan, on the edge of the Middle Asia.

C. lateralimarginalis lateralimarginalis – Kazakhstan, Turkestan reg., Otyrar district, Kyzylkum Desert, near Koksaray, at light, 4.vi.2021, leg. A. P. Kashtalian, 1 specimen.

C. lateralimarginalis torquatus (Fischer von Waldheim, 1829) was known from Georgia, Turkey, Turkmenistan, Afganistan, India (Kashmir), China (Gansu, Ningxia, Inner Mongolia, Xinjiang) ((Kirejchuk 2001; Nilsson 2017). It has now been discovered in Kazakhstan along with the nominative subspecies

C. lateralimarginalis torquatus – Kazakhstan, Kyzylorda reg., Aral district, thermal spring Akespe, 46°47'25"N 60°31'19"E, 12.ix.2022, leg. A. P. Kashtalian, 1 specimen (Figs 1-2); Mangystau Reg., Buzachi Peninsula, near aul Kyzan, pool near an artesian well, 18-23.iv.202, leg. A. P. Kashtalian, 1 specimen; 100 km NW Atyrau, aul Naryn, irrigation ditch, 5.v.2022, leg. A.P. Kashtalian, 1 specimen.



Figures 1–2 Habitus of *Cybister lateralimarginalis torquatus*: 1 – dorsal side; 2 – ventral side

Figure 3 Akespe spring. Arrow shows the place of discovery of *Cybister lateralimarginalis torquatus*, the beetle being just visible bottom left

Akespe is a thermal radon spring (+60°C) in Aral Karakum Desert. In addition, the water of this source is saturated with hydrogen sulphide (Fig. 3). The beetle was found dead in the spring and must have died because of the high water temperature. The specimen had a coating of sulphur (Fig. 2). In addition to the identified specimen, there were two more specimens of dead large diving beetles in the spring, which fell apart when trying to get them out of the water (personal communication by A. P. Kashtalian). *C. lateralimarginalis torquatus* is recorded for the first time for the fauna of Kazakhstan.

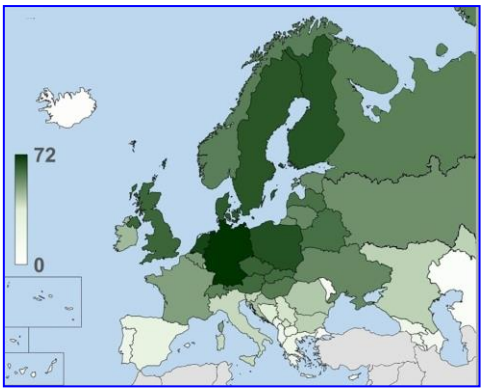
Acknowledgements
I am very grateful to A. P. Kashtalian (Minsk, Belarus) for loan material and the photograph of the Akespe spring and A.V. Zemoglyadchuk (Baranovichi State University, Baranovichi, Belarus) for help in preparing the photos of *C. lateralimarginalis torquatus*.

KIREJCHUK A G 2001. Family Dytiscidae (imago). In: *Keys to freshwater invertebrates of Russia and adjacent lands* **5** St-Petersburg. Nauka 130–227, 516–685 [in Russian].
NILSSON A N 2017. Family Dytiscidae Leach, 1815. pp. 846-914 in: I. Löbl & D. Löbl (eds). *Catalogue of Palaearctic Coleoptera*. Volume **1**. Revised and updated edition. Leiden: Koninklijke Brill.

Received January 2023

BARCODING, NOT GREAT, NOT TERRIBLE

The latest paper, by Zoltán Csabai *et al*., prompted searching for others that may have been overlooked, a few of which are below. The searches go on for gaps to be filled in the lists of barcodes, with analysis indicating the value of water beetles as a group and amongst beetles as a whole. An unwritten (?) incentive must be that water provides a great medium from which to extract corporate eDNA. The review is based on water beetles and water bugs, with the Biodiversity of Life Database (BOLD) currently having 7,362 barcodes of 1,527 species. The most frequently barcoded species were *Elmis aenea* (Müller) (379 codes), *Limnius perrisi* (Dufour) (281), the *Hydrobius fuscipes* complex (231), *Colymbetes dolabratus* (Paykull) (201 codes), *Hydroporus palustris* (L.) (105), and *H. morio* Aubé (103). Coverage for the Pan-European water beetle fauna stands at 51.5%, 704 species. One of the coverage maps shown here demonstrates that this owes mainly to work in Germany and Fennoscandia, with the biggest gaps, for BOLD at least, being in Mediterranean countries. It would be helpful to have a review covering other initiatives.



I wonder if the beetles themselves appreciate the heady heights of the research associated with their existence and evolution. Andrès Biselga *et al*. (2012) state

> "Natural assemblages of aquatic beetles are highly suitable for testing the predictions from dispersal-constrained theoretical models. They form discrete communities of a few dozen species in lakes, ponds and small streams, comprising several families, of which Dytiscidae ... is dominant. Being dependent on open water bodies, dispersal requires discrete migration steps across unsuitable terrestrial habitat. Therefore, using mtDNA sequences for entire local water beetle communities, we investigate if patterns of spatial turnover show self-similarity at multiple hierarchical levels that is predicted under a neutral community ecology paradigm."

Tomochika Fujisawa *et al*. (2014) have

> "Genetic variation of cytochrome oxidase 1 in water beetles was positively correlated with occupancy (numbers of sites of species presence) and negatively with latitude, whereas substitution rates across species depended mainly on habitat types, and running water specialists had the highest rate."

Sara Ottati *et al*. (2022 - correspondent is Dirk Ahrens) attempt an analysis of all Central European beetles, reduced to 16,283 individuals of 3,967 species in 124 families, further reduced to the 12,207 specimens for which some basic ecological features could be assigned alongside the DNA data. But like so many surveys that seem to be unstoppable when based on massive amounts of data, subdividing that data produces data-sets that are just not big enough to produce significant differences. Here at least the analysis is sufficient to demonstrate that more data might be worthwhile. Water beetles come off lightly....

> "Our data thus seem to confirm the habitat stability hypothesis (Ribera *et al*., 2003). The latter sees in Pleistocene glacial events and the final climatic stability the major causes in producing equilibrium conditions, either with environmental factors due to niche-based processes or with spatial distributions from long-term stochastic dispersal."

Looks like Ignacio has the last word?

CSABAI Z, ČIAMPOROVÁ-ZAŤOVIČOVÁ Z, BODA P & ČIAMPOR F 2022. 50%, not great, not terrible: Pan-European gap-analysis shows the real status of the DNA barcode reference libraries in two aquatic invertebrate groups and points the way ahead. *Science of the Total Environment* 863160922

BASELGA A, FUJISAWA T, CRAMPTON-PRATT A, BERGSTEN J, FOSTER P G, MONAGHAN M T & VOGLER A P 2013. Whole-community DNA barcoding reveals a spatio-temporal continuum of biodiversity at species and genetic levels. *Nature Communications* **4** 1892.

FUJISAWA T, VOGLER A P & BARRACLOUGH T G 2014. Ecology has contrasting effects on genetic variation within species versus rate of molecular evolution across species in water beetles. *Royal Society Proceedings B* doi.org/10.1098/rspb.2014.2476.

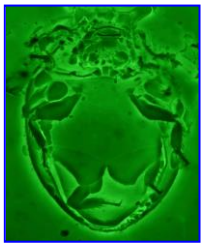
OTTATI S, EBERLE J, RULIK B, KÖHLER F & AHRENS D 2022. From DNA barcodes to ecology: meta-analysis of central European beetles reveal link with species ecology but also to data pattern and gaps. *Ecology and Evolution* doi.org/10.1002/ece3.9650

RIBERA I, FOSTER G N & VOGLER A P 2003. Does habitat use explain large scale species richness patterns of aquatic beetles in Europe? *Ecography* **26** 145-152.

SPHAERIUSIDAE - LIVING FOSSILS *BEZE SPORU*

The molecular phylogeny here, based on five DNA markers, shows deep genetic differences associated with morphological differences. The study by Martin Fikáček and others includes 99 million-year-old amber inclusions of the new genus *Bezesporum* [*beze sporu* is Czech for "without doubt"] and *Burmasporum* Kirejtshuk, 2009, the latter originally described from a single living beetle in Myanmar. *Sphaerius* Waltl is a worldwide genus and part of an exceptionally conserved group of insects.

FIKÁČEK M, YAMAMOTO S, MATSUMOTO K, BEUTEL R G & MADDISON D R 2022. Phylogeny and systematics of Sphaeriusidae (Coleoptera: Myxophaga): minute living fossils with underestimated past and present-day diversity. *Systematic Entomology* doi: 10.1111/syen.12571 pp. 17.



The second paper describes as new *Sphaerius martini* and *Crowsonaerius minutus* from Burmese amber, and includes some confocal microscope studies as here of *S. martini*. The correspondent is Chen-Yang Cai and the photographer was Yan-Da Li.

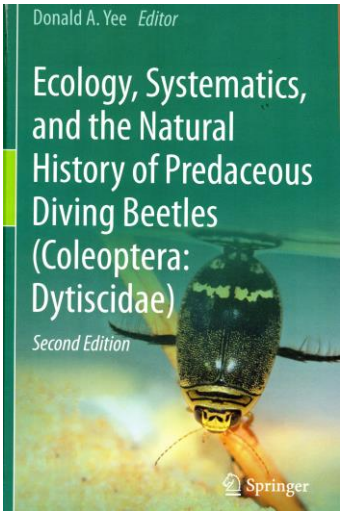
LI Y-D, ŚLIPIŃSKI A, HUANG D-Y & CAI C-Y 2023. New fossils of Sphaeriusidae from mid-Cretaceous Burmese amber revealed by confocal microscopy (Coleoptera Myxophaga). *Frontiers in Earth Science* 10.901573 pp. 12.

MICRODOT AS FAR AS SIBERIA

Seventeen sites for the microdot beetle, *Sphaerius acaroides* Waltl, are given from Russia ranging east to the Tyumen Oblast at the Singul' Lake. Analysis of the cytochrome oxidase gene demonstrates that the species there is the same as in Germany, but differs from an unknown species in the USA. A record from the Lipetsk Oblast in Tsurikov (2009) was found to be based on an alexiid beetle, presumably in the genus *Sphaerosoma*.

PROKIN A A, SALNITSKA M A, SAZHNEV A S, STOLBOV V A & SHEYKIN S D 2023. New records of *Sphaerius acaroides* (Coleoptera, Sphaeriusidae) from Russia extend the known distribution of Myxophaga to Siberia. *Inland Water Biology* **16** 10-15.

TSURIKOV M N 2009. *Beetles of Lipetsk Province*. Voronezh: Voronoezh State University.



ECOLOGY BOOK SECOND EDITION

🕮 YEE D A (ed.) 2023. *Ecology, Systematics, and the Natural History of Predaceous Diving Beetles (Coleoptera: Dytiscidae) Second Edition* Cham: Springer. Hard cover ISBN 978-3-031-01244-0 £179.99. eBook ISBN 9783-3-031 01245-7 £143.50 inc. VAT in UK. Individual chapters can also be purchased.

The first edition of this book was published in 2014 (see ***Latissimus* 35**). The editor notes that there have been dozens of new publications since then but, if one chapter's experience is anything to go by, it must be hundreds. Again, not counted, but there must be many more illustrations than in the original.

An introduction to the Dytiscidae: their diversity, historical importance, cultural significance and other musings pp. 1-16. Donald Yee, University of Southern Mississippi, USA

An overview and summary of dytiscids, including historical and contemporary views.

Larval chaetotaxy of world Dytiscidae (Coleoptera, Adephaga) and implications for the study of Hydradephaga pp.17-53. Yves Alarie, Laurentian University, Canada and Mariano C Michat, Laboratory of Entomology, Buenos Aires, Argentina.

A synthesis of the chaetotaxic pattern in Dytiscidae including a reconstruction of the larval ground plan of the family.

***The phylogeny and classification of predaceous diving beetles* (Coleoptera: Dytiscidae)** pp. 55-185. Kelly Miller, University of New Mexico, USA and Johannes Bergsten, Swedish Museum of Natural History, Sweden

A comprehensive phylogenetic analysis of the family based on 168 species. The authors helpfully note that sections 3.1-3.4 are the same as in the first editions with a few corrections, whereas the classification in sections 3.5-3.7 has been reworked. There are no new taxonomic change beyond those of the first edition.

Predaceous diving beetle sexual systems pp. 187-223 Kelly B. Miller and Johannes Bergsten

Aspects of general reproductive anatomy, including copulatory structures as well as reconstruction of the evolution of these structures into a phylogenetic framework that features the remarkable antagonistic coevolutionary arms races of grasping and anti-grasping weaponry.

Morphology, anatomy, and physiological aspects of dytiscids pp. 225-251**.** Siegfried Kehl, University of Bayreuth, Germany

Internal anatomy and function, nervous system, sense organs, and respiration, including unique systems to cope with life in aquatic habitats.

Chemical ecology and biochemistry of dytiscids pp. 253-341. Konrad Dettner, University of Bayreuth, Germany

A mind-blowing review of the chemical ecology of dytiscids, including exocrine glands, defence/allomones, pygidial and prothoracic glands, steroid transformations,, pheromones and kairomones.

Community patterns in dytiscids pp. 343-371. Steve Vamosi, University of Calgary, Canada

A review of non-phylogenetic studies of community patterns in dytiscids, focussing primarily on the Nearctic and Holarctic regions including an overview of methods used for analysis of phylogenetic community structure.

Predation-prey ecology of dytiscids pp. 373-399. Lauren Culler, Dartmouth College, USA, Shin-ya Ohba, Nagasaki University, Japan and Patrick Crumrine, Rowan University, USA

A review of the effects of dytiscid predation on prey. Topics include consumptive effects of dytiscid larvae and adults, and non-consumptive effects on prey, environmental constraints on consumptive and non-consumptive effects, and applied aspects of dytiscid consumption of vector and nuisance prey species.

The unique Australian subterranean Dytiscidae: diversity, biology and evolution pp. 401-425. Andrew Austin, Michelle Guzik and Karl Jones, all at the University of Adelaide, William Humphreys, Western Australian Museum, Chris Watts and Steven J.B. Cooper, South Australian Museum.

A welcome addition to the book and to be used to confound newcomers by asking them where they think there are centres of diving beetle diversity. Figure 9.1 should be made available as wallpaper for water beetlers' bedrooms.

***Habitats* supporting dytiscid life** pp. 427-503. Margherita Gioria, Czech Academy of Sciences, and John Feehan, University College Dublin, Ireland.

A description of the habitat types and environmental parameters that predict dytiscid community composition.

Dispersal in Dytiscidae pp. 505-528. David Bilton, University of Plymouth, England, UK

A review of the dispersal biology of diving beetles, with a focus on the mechanisms, causes and consequences of dispersal, as well as the evolution of the trait, and cases where dispersal ability has been lost/reduced. In addition the review explores proximate causes of dispersal, including environmental triggers that elicit emigration from individual localities.

The conservation of predaceous diving beetles: knowns, *more* ***unknowns and*** *more* ***anecdotes*** pp. 529-566. Garth Foster and David Bilton, The Aquatic Coleoptera Conservation Trust

A critical review of conservation, focussing on issues related to urbanisation, agriculture, other anthropogenic effects, and the status of many endangered or Red list species. There was an attempt here to take on board many of the publications about conservation issues that had been published since the first edition, but the main addition causing most pleasure (to one of us at least) involved twisting what Adam Smith said in 1776 in *The Wealth of Nations*. Smith remarked that cities often grew on the sea coast or on navigable rivers and noted that ...."A city might ... grow up to great wealth and splendour, while not only the country in its neighbourhood, but all those to which it traded, were in poverty and wretchedness." If you are a water beetle, don't live on an estuary.

***REGIMBARTIA* IN CHINA**

Two species are recognised from China, *R. attenuata* (Fab.) and the newly described *R. majorobtusa* Mai, Jia and Jäch, the eleventh known species of this swimming hydrophilid genus, with one of the better names fashioned out of an authority. The types of *R. sumatrensis* d'Orchymont are missing from the Natural History Museum, London, though there are plenty of potential neotypes in Vienna. The correspondent is Feng-long Jia.

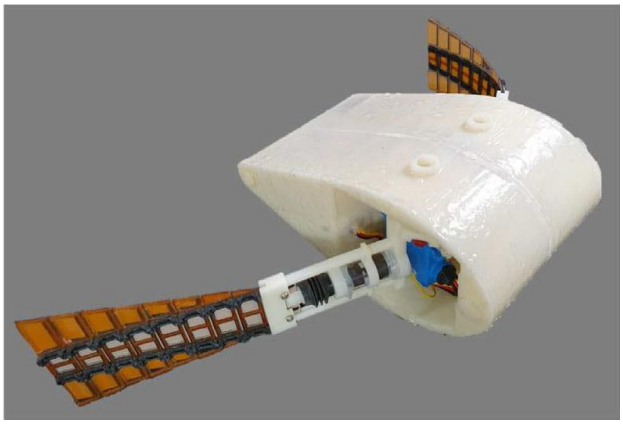
MAI Z, HU J, JIA F & JÄCH M A 2022. A new species of *Regimbartia* Zaitzev, 1908 and additional faunistic records of *Regimbartia attenuata* (Fabricius, 1801) from China (Coleoptera, Hydrophilidae, Hydrophilinae). *Aquatic Insects* **43** 199-212

CHINESE WATER BEETLE

Our president spotted online what appears to be a bargain, £4.02 in British money, from *AliExpress*. Could be the new trophy. The only criticism so far - as the kit has yet to be built and the beetle launched - is that it is claimed to be *Cybister japonicus*, but all good water beetlers know that this is now treated a synonym of *C. chinensis* Motschulsky - see ***Latissimus* 23** 6.

NILSSON A N & PETROV P N 2007. On the identity of *Cybister chinensis* Motschulsky, 1854 (Coleoptera: Dytiscidae). *Koleopterologische Rundschau* **77** 43-48.

KOREAN ROBOT



And now for something more sophisticated, a robot with paddles that adjust their stiffness according to beat frequency. Joonbum Bae is the correspondent.

KWAK B, CHOI S & BAE J 2023. Development of a stiffness-adjustable articulated paddle and its application to a swimming robot. *Advanced Intelligent Systems* doi: 10.1002/aisy.202200348 pp. 13.

also seen belatedly from a wonderfully entitled journal KWAK B & BAE J 2017. Design of hair-like appendages and comparative analysis on their coordination toward steady and efficient swimming. *Bioinspiration & Biomimetics* 12 036014 pp. 11.

LIODESSUS

L. santarosita is a newly described species of this bidessine diving beetle from Colombia at 3,200 metres above sea level in a peatland swamp. A combination of genetic and morphological analysis proved essential for recognising the subspecies of *L. bogotensis* Guignot on the Altiplano. These now include *L. lacunaviridis* Balke, Ospina-Torres, Megna & Hendrich, originally described as a distinct species (see ***Latissimus* 46** 15). Then comes the really interesting bit. Hybrids are often mentioned as possibilities in dytiscids but this is almost fully committed to in the concept of *Liodessus bogotensis bogotensis* × *Liodessus bogotensis matarredonda,* found in the southern Cundinamarca area of the Páramo. We are only a ? short of a formal designation of a hybrid, and we are presented with good evidence of the birth of a new species.

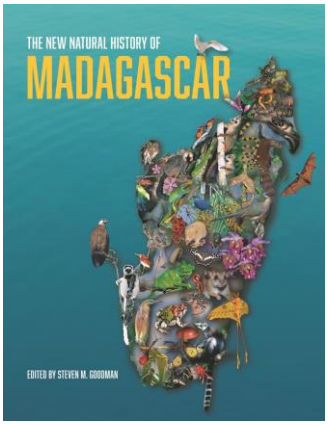
BALKE M, NEVEN M, VILLASTRIGO A, OSPINA-TORRES R, PRIETO C, GUTIERREZ RUBIANO N, LOTTA I, DUEÑAS L F & HENDRICH L 2023.Eastern Colombian Páramo *Liodessus* Guignot, 1939 diving beetles are genetically structured, but show signs of hybridization, with description of new species and subspecies (Coleoptera, Dytiscidae). *ZooKeys* **1143** 165-187.

BEDFORDSHIRE

Jonty Denton notes records for the southern English county for *Gyrinus distinctus* Aubé, *G. paykulli* Ochs and *Telmatophilus schonherrii* (Gyllenhal).

DENTON J 2022. Further additions to the Bedfordshire Coleoptera list. *British Journal of Entomology and Natural History* **35** 356.

MADAGASCAR BEETLES



📖 GOODMAN S M (ed.) 2022.The *New Natural History of Madagascar*. 2 volumes. Princeton University Press. ISBN 9780691222622 hardback, $175/£135 from the publishers, also ebook PDF at anything up to £254.

Chapter 9 concerns invertebrates. Beetles are to be found in its part 2, edited by B.L. Fisher and S. M. Goodman.

A special thanks to Johannes Bergsten for taking the trouble to photocopy all the water beetle entries in the absence of PDFs. There are no articles on Hydrophilidae and Hydraenidae, just in case anyone notices such gaps.

MALAGASY DYTISCIDAE

One hundred and fifty-one species had been described at the time of writing, about 50 species not being endemic. It is estimated that there are 300 species overall, with 80% endemic. There are three endemic genera, *Pachynectes*, *Hovahydrus* and *Madaglymbus*, the latter with at least thirty species, and all associated with madicolous habitats. Three madicolous genera are yet to be described. The first descriptions, in the 1830s by Klug and Aubé, came from material collected by Jules Prosper Goudot (1803-?).

BERGSTEN J, MANUEL M, RANARILALATIANA A T & HÁJEK J 2022. Coleoptera: Dytiscidae, diving beetles, *Tsikovoka*. pp. 1024-1034.

MALAGASY GYRINIDAE

Twenty-five species are known, all bar one being endemic. *Heterogyrus milloti* Legros has already been recognised as the oldest endemic lineage of plant or animals known from Madagascar (see ***Latissimus* 40**). Those who like common names might appreciate that whirligigs have plenty of them in Malagasy, perhaps the best being *tsiverivery*, meaning something like "pretends to get lost". The one in the paper's title means "cleaning water" in the Merina dialect.

GUSTAFSON G T, RANARILALATIANA A T & BERGSTEN J 2022. Coleoptera: Gyrinidae, whirligig beetles, *Fandiorano*. pp. 1034-1041.

MALAGASY HALIPLIDAE

Six species are known, all endemic, in *Haliplus* and *Peltodytes*. Unusually, most species are to be found in the drier western parts of Madagascar.

BERGSTEN J 2022. Coleoptera: Haliplidae, crawling water beetles. pp. 1041-1043.

MALAGASY NOTERIDAE

Nineteen species are known in four genera, each of which has endemic species. All the non-endemic species occur in Africa but not in Asia, and it is likely that Malagasy forms have an African ancestry.

BERGSTEN J & MANUEL M 2022. Coleoptera: Noteridae, burrowing water beetles. pp. 1047-1049.

MALAGASY TORRIDINCOLIDAE

Seven species of the endemic genus *Incoltorrida* are known. These insects live in thin water films and are aquatic in all their stages, Variations in wing development are discussed along with some observation of associated peritrich ciliates.

BERGSTEN J 2022. Coleoptera: Torridincolidae, torrent beetles. pp. 1044-1047.

MALAGASY HYDROSCAPHIDAE

Hydroscapha andringitra Perkins & Bergsten and *H. saboureaui* Paulian are known solely from their type localities, both in areas of seepage.

BERGSTEN J 2022. Coleoptera: Hydroscaphidae, skiff beetles. pp. 1050-1051.

PERKINS P D & BERGSTEN J 2019, New Myxophagan water beetles from Madagascar (Coleoptera: Torridincolidae, Hydroscaphidae), *Zootaxa* **4657** 57-96

MALAGASY FORESTS IN DANGER

This study is based on 3,463 individual water beetles in 44 locations and representing 92 species, 74 including one haliplid, five noterids, twelve whirligigs, the rest being dytiscids. The paper concerns the importance of the remaining forests of the Central Highlands of Madagascar, the Manjakatompo Ankaratra having the most unqiue fauna and the widest altitudinal range. No new species are described here but fifteen are recognised as in need of formal recognition. The correspondent is Johannes Bergsten.

RANARILALATIANA T, RAZAFINDRALEVA H A, GRANATH G, MALM R B, RAKOTONIRINA J C, RAZAFINDRANAIVO V, TAVAOMANARIVO L H R, JOHANSSON F & BERGSTEN J 2022. Remaining forests on the Central Highlands of Madagascar - Endemic and endangered aquatic beetle fauna uncovered. *Ecology & Evolution* **12** 10.1002/ece3.9580 pp. 26.

MALAGASY DYTISCID LARVAE

Larvae of *Hovahydrus praetextus* (Guignot) and of a *Hovahydrus* species near *H. minutissimus* (Régimbart) are described. They look typically hyphydrine, the new species having part of the abdomen and the head pale in contrast to the main part of the body and the tail. Their morphology is close to that of *Hyphydrus* and some genera endemic to South Africa.

ALARIE Y, MICHAT M C, RANARILATATIANA T & BERGSTEN J 2022. Larval morphology of the Madagascan endemic diving beetle genus *Hovahydrus* Biström, 1982 (Coleoptera: Dytiscidae) and phylogenetic comparison with other known Hyphydrini. *Zootaxa* **5219** 227-246.

AFRICAN *AULACOCHTHEBIUS*

Phil Perkins notes that the first ever illustrations of *Aulacochthebius* aedeagi were published only fifteen years ago (Aguilera, Ribera & Hernando 1998). He describes how difficult it was to obtain some types when museums were closed because of Covid-19, but he still managed to look at 5,911 specimens from 161 locations. Sixteen species are now known from Africa, including nine newly described ones. Even if you are not interested in the African fauna the studies of the aedeagus are of more general interest, with Phil being perplexed as to how the thing works, given that there appears to be no pumping mechanism for the flagellum, which can be almost twice as long as the body (e.g. the newly described *O. flagellissimus*), and often presenting in a collapsed state. Perhaps the sperm should be checked for special powers? Nearly all the African species have been caught by splashing the shore.

AGUILERA P, RIBERA I & HERNANDO C 1998. Notes on the Palaearctic species of *Aulacochthebius*, with a description of *A. libertanus* sp. n. from the Moroccan Anti Atlas (Coleoptera: Hydraenidae). *European Journal of Entomology* **95** 629-637

PERKINS P D 2023. Taxonomic revision of African water beetles in the genus *Ochthebius* Leach (1815), subgenus *Aulacochthebius* Kuwert (1887) (Coleoptera: Hydraenidae). *Zootaxa* **5228** 501-546.

LONGEVITY IN DIVING BEETLES

This note concerning *Cybister lateralimarginalis* (De Geer) was among seasonal greetings cards in 2023. Professor Dr Konrad Dettner reports on Ulrich Göbel, a locksmith from Dortmund, who has kept in an aquarium this beetle, originally as its larva, for seven years and eight months. There is an obvious competition here. One naturally turns here to Professor Korschelt's *magnum opus* on *Dytiscus marginalis* L. Here (volume **2** p. 856) "Die Lebensdauer der Imago ist beträchtlich grösse als im all gemeinen angenommen wird. Ein halbes Jahr wird normaleweise jeder *Dytiscus* alt, die meisten erreichenaber ein Alter von ¾ bis zu einem Jahr. Gegen den zweiten Herbst zu sterben viele Individuen, besondern Männchen. Das folgende Frühjahr erleben einige Weibchen, die dann normal zum zweiten Male zur Eiablage schreiten. Älter als 2½ Jahr wurden kein Käfer (Blunck). Es ist aber wohl möglich, daß der Gelbrand bei geeigneter Pflege (niederer Temperatur, natürlichem Futter) ein Alter von 3-4 Jahren erreichen kann." Korschelt quotes another expert, Blunck, stating that no dytiscid lives more than 2.5 years but states that it is quite possible for some to reach an age of 3-4 with suitable care. Frank Balfour-Browne's autobiography tackles longevity on pp. 54-55, citing Schiødte, Régimbart and Wesenberg-Lund as saying that larger dytiscids survive "at most two years" though longer under artificial conditions. Also... "Sharp, 1883, kept a pair of what were then called *Dytiscus roeselii* but are now *Cybister lateralimarginalis*, the male for three years and the female for five 'in a vase'". The latter experience comes nearest to Herr Göbel's possible record.

CYBISTER REARING

The possibility of laboratory production was demonstrated, feeding larvae with crickets. Survival was good, but higher in *C. chinensis* than in *C. lewisianus*.

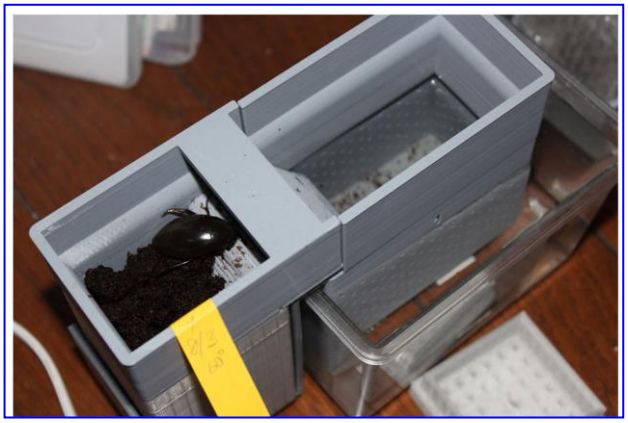
WATANABE K, INODA T, SUDA M & YOSHIDA W 2021. Larval rearing, methods for two endangered species of diving beetle, *Cybister chinensis* Motschulsky, 1854 and *Cybister lewisianus* Sharp, 1873 (Coleoptera: Dytiscidae), using laboratory-bred food prey. *The Coleopterists Bulletin* **75** 440-444.

EUBRIA PALUSTRIS IN HAMPSHIRE

A new record for the New Forest in England is supplemented by an old record for the Hampshire coast and a 2005 record for North Hampshire.

DENTON J 2022. *Eubria palustris* (Coleoptera: Psephenidae) in the New Forest. *British Journal of Entomology and Natural History* **35** 408.

3D-PRINTED REARING TANKS



Seven parts of a tank prepared using a 3D-printer can be assembled into two containers connected by a bridge hung over the side of a larger tank. Once the larvae are ready they can leave the partly submerged part of the tank via the bridge, pupating in the darkened dry part. The photograph shows an adult *Hydrophilus acuminatus* Motschulsky that has just emerged from the pupa. The immediately obvious benefit must be that individual larvae can be reared separately within the same main tank. Another benefit of a 3D-printing system must be that a structure can be scaled up and down. So why not a cage specific to the size of the beetle, perhaps a tiny one for *Hydroporus*, and so on? Thanks go to Kohei Watanabe for facilitating use of the image.

INODA T, WATANABE K & YAMASAKI S 2022. Sequential rearing method from larva to adult water beetles (Coleoptera) using devices created with a three-dimensional printer. *Aquatic Insects* doi.org/10.1080/01650424.2022.2046777

SEASIDE SUBFOSSILS IN SUSSEX

The samples are from a metre-thick peat deposit that developed from 2,895 to 900 BC, from the Late Neolithic to the Late Bronze Age. The peat underlies a recreation ground to the south of the Pevensey Levels. Beetle remains include *Sphaerius acaroides* Waltl, *Noterus clavicornis* (De Geer), *Colymbetes fuscus* (L.), *Hydrovatus cuspidatus* (Kunze), otherwise unknown in Britain until 1988 (see Martin Drake 2006), *Hygrotus impressopunctatus* (Schaller), *Cymbiodyta marginella* (Fab.), *Donacia cinerea* Herbst, *D. marginata* Hoppe, *D. simplex* Fab., and *Plateumaris bracata* (Scopoli). The beetle correspondent is Enid Allison.

DOWSETT A K, KRAWIEC K, HILL T C B, ALLISON E & WHITTAKER J E 2023. Seaside recreation ground: a multi-proxy palaeoenvironmental investigation on the coastal edge of the Willingdon Levels, Eastbourne, East Sussex, UK. *Journal of Wetland Archaeology* doi.org/10.1080/14732971.2023.2189561 pp. 21.

DRAKE C M 2006. *Hydrovatus cuspidatus* (Kunze, 1818) (Dytiscidae) new to Britain. *The Coleopterist* **115** 53-57.

PAROSTER SURFACES IN NEW CALEDONIA

This is an example of a species so highly adapted as to hide its true affinity. *Typhlodessus monteithi* Brancucci was described from a shallow subterranean habitat in New Caledonia and could not be assigned to any of the known tribes of the subfamily Hydroporinae. Molecular data was obtained from an almost 30 years old museum specimen. *Typhlodessus* can now be placed within the subtribe Sternopriscina as a junior synonym of *Paroster*. *Paroster* has surface-living, subterranean and even two terrestrial species, and was formerly known only from Australia.

VILLASTRIGO A, DEHARVENG L & BALKE M 2023. New Caledonia's enigmatic terrestrial diving beetle *Typhlodessus monteithi* is a derived species of *Paroster.* https://doi.org/10.1111/zsc.12581

PEATLAND DRAINAGE IMPACTS

This review is concerned primarily with experimental evidence on the impact of peatland drainage on communities downstream. Although there are plenty of data on water quality it seems that we are short of rigorous evidence on what happens to the plants and animals, justifying work done in the EPA-funded SWAMP project (www.ucd.ie/swamp). At one point the authors suggest that the shortage might be addressed by assessing the grey literature, though surely all that unpublished data should be included in any review in these online days. Also, a single anecdote can be better than heaps of experimental data in at very least indicating what the next experiment might address. Water beetles do get a mention, a great improvement on all those papers about invertebrate indexes. *Esolus parallelepipedus* (Müller) is mentioned as one of the inhabitants of higher order peatland streams on coarse bed material. Wilco Verberk's work on bog pools gets an airing with introduction of a strange concept "*Hydroporus* species were typically associated with acidic water in which *Sphagnum* dominated, as they not only display a tolerance for acidic conditions but also utilise the mosses for shelter and during *spawning*." The italics are ours. *Hydroporus* are contrasted with haliplids, which are associated with more alkaline bog remnants, probably because they feed on filamentous algae and use floating vegetation for oviposition. The correspondent is Mary Kelly-Quinn.

DONAHUE T, RENOU-WILSON F, PSCHENYCKYJ C & KELLY-QUINN M 2022. A review of the impact on aquatic communities of input from peatlands drained for peat extraction. *Biology and Environment: Proceedings of the Royal Irish Academy* **122B** 145-160.

POLISH FOREST AFTER A HURRICANE

Thirty-two species of beetle were found new for the Mazurian Lake District after a hurricane damaged the Piska Forest in 2002. Only one water beetle is recorded, but a good one, *Hydroporus notatus* Sturm.

GUTOWSKI J M, KUBISZ D, SUĆKO K, BOROWSKI J, BYK A, KRÓLIK R, LASOŃ A, MAZUR M A, MRLKE A, MOKRZYCKI T & PLEWA R 2022. Interesting species of beetles (Coleoptera) from the Piska Forest [in Polish]. *Journal Acta Scientiarum Polonorum Silvarum Colendarum Ratio et Industria Lignaria* **21** 301-321.

ELYTRA

In this short review *Dytiscus* feature for the way in which air is stored underwater and for their sexual dimorphism. Elytra probably first evolved in the Carboniferous, not just by sclerotisation but also by formation of the inwardly directed epipleura and the subelytral space.

GOCZAŁ J & BEUTEL R G 2023. Beetle elytra: evolution, modifications and biological functions. *Biological Letters* **19** 20220559 pp. 11.

INSECT VS GLOBAL AREA PROTECTION

This headline-grabbing paper is certainly worth citing. The proportion of insect species in protected areas was estimated starting with about 107 million records in GBIF. This indicated that about 76% of species are not adequately protected. Beetles appeared to be best covered after embiopterans and earwigs.

CHOWDHURY S, ZALUCKI M P, HANSON J O, TIATRAGUL S, GREEN D, WATSON J E M & FULLER R A 2023. Three-quarters of insect species are insufficiently represented by protected areas. *One Earth* doi: 10.1016/j.oneear.2022.12.003 pp. 8.

GRAPHODERUS BILINEATUS BY THE VISTULA

Two new sites are reported for *Graphoderus bilineatus* in oxbows in a nature reserve by the Vistula.

PRZYBYLSKA J & MANIARSKI R 2023. Nowe stanowiska kreślinka nizinnego *Graphoderus bilineatus* (De Geer, 1774) (Coleoptera: Dytiscidae) w dolinie Wisły *Naturalia* **8** 69-71.

MORE ON THE VISTULA

Sobieszewska is an artificial island in the estuary of the Vistula in Poland. The beetle list now stands at 424 species, based on old records in one list of 174 species and more recent work in 2017/18 of 269 species. Judging by some unexpected water beetles in the small number of water beetles in the old list (e.g. *Ilybius wasastjernae* (Sahlberg), *Laccornis oblongus* (Stephens), *Helophorus pumilio* Erichson, Cercyon *granarius* Erichson) Karol seems to have been wise to keep her own list separate

SZAWARYN K 2023. Chrząszcze (Insecta: Coleoptera) Wyspy Sobieszewskiej. *Rocznik Muzeum Górnośląskiego w Bytomiu Przyroda* **29** 1-19.

HELSINKI WITH AND WITHOUT FISH

The paper's title succinctly describes the conclusion about what was found by bottle-trapping 26 ponds in and around Helsinki. Even ornamental ponds, as here in a photo supplied by Wenfei, have conservation value for diving beetles if they have some emergent plants.

LIAO W, VENN S & NIEMELÄ J 2023. Microhabitats with emergent plants counterbalance the negative effects of fish presence on diving beetle (Coleoptera: Dytiscidae) diversity in urban ponds. *Global Ecology and Conservation* **41** e02361 pp. 9.

CYBISTER LATERALIMARGINALIS TORQUATUS - FOOD SAFETY

The bacteria *Lelliottia amnigena* and *Citrobacter freundii* were detected in the guts of *Cybister* during tests concerning the beetle as a human food item. Both bacteria are members of the Enterobacteriaceae and could present a risk to humans with suppressed immune systems. Twelve metal elements were assessed and appeared to be low but at least this demonstrates the possibility of use of these insects in monitoring metal contamination.

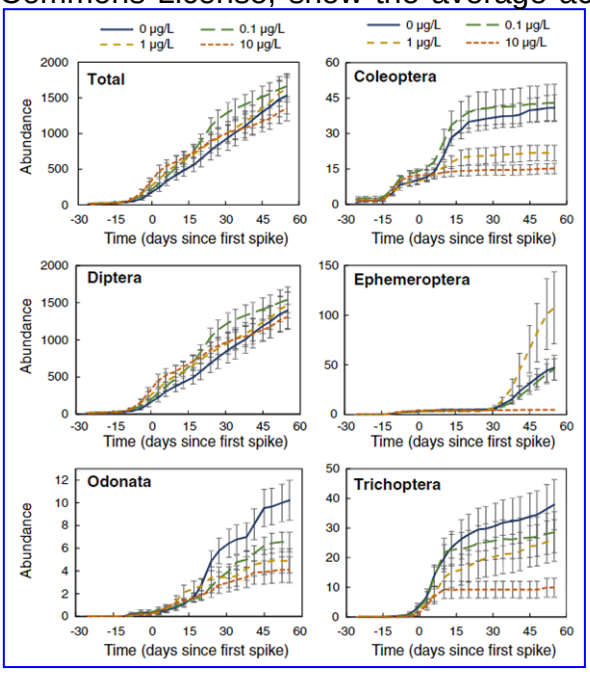
BEKTAŞ M, ORHAN F, ERMAN Ö K & BARIŞ O 2020. Bacterial microbiota on digestive structure of *Cybister lateralimarginalis torquatus* (Fischer von Waldheim, 1829) (Dytiscidae: Coleoptera). *Archives of Microbiology* doi.org/10.1007/s00203-020-02049-w pp. 6.

SÃO TOMÉ AGAIN

Islands in the Gulf of Guinea featured only recently, see ***Latissimus* 53** 22. Clive caught the newly described species, *H. turneri* in seepage in 2016 and *H. saotometerrestris* by hand searching wet leaf litter in 2018, the holotype of the latter having been found in a Winkler sample by Andrew Polazsek in 1999.

BILTON D T 2023. Two new species of *Hydraena* Kugelann, 1794 from São Tomé Island - an apparent adaptive radiation (Coleoptera, Hydraenidae). *Zootaxa* **5254** 593-600.

A system of experimental ditches, set up as a 'Living Lab' with crowd-funding at Leiden University, was used to assess the impact on insect emergence of thiacloprid, one of the neonicotinoid insecticides, in association with fertiliser application. The graphs, originally shown in Barmentlo *et al*. (2021) and used here under Creative Commons License, show the average accumulated number of emerged insects per 60 cm² of water surface ± SEM with three different rates of thiacloprid applied at 0 and 14 days, plus an untreated control as the thick blue line. The graphs show the apparent indifference of Diptera at one extreme and the extreme sensitivity of Ephemeroptera at the other. This study also demonstrated how artificial fertiliser might reduce or even nullify the toxic effects of the insecticide. When asked which beetle species were involved Henrik Barmentlo has stated that *Helophorus* dominated with *aequalis* Thomson, *brevipalpis* Bedel, *grandis* Illiger, *minutus* Fab., and *paraminutus* Angus. Also identified with *Agabus bipustulatus* (L.), *Rhantus suturalis* (Macleay) and species of *Donacia*, *Haliplus*, *Helochares* and *Laccobius*.



BARMENTLO S H 2022. Neonicotinoïden in de natuur: de effecten op aquatische ongewervelden en hun rol in ecosystemen. *Entomologische berichten* **82** 190-195.

BARMENTLO S H, SCHRAMA M, Van BODEGOM P M, de SNOO G R, MUSTERS C J M & VIJVER M G 2019. Neonicotinoids and fertilizers jointly structure naturally assembled freshwater macroinvertebrate communities. *Science of the Total Environment* **691** 36-44.

BARMENTLO S H, SCHRAMA M, de SNOO G R, Van BODEGOM P M, Van NIEUWENHUIJZEN A & VIJVER M G 2021. Experimental evidence for neonicotinoid driven decline in aquatic emerging insects. *Proceedings of the National Academy of Sciences* **118** e2105692118.

SOUTHERN HEMISPHERE HYDRAENIDAE

This genetic analysis of four hydraenid subfamilies suggests that their Gondwanan genera constitute a single clade. With this comes synonymisation of some generic taxa and 39 other newly proposed combinations. *Mesoceratops* Bilton & Jäch (here courtesy of DTB) is described as new genus endemic to South Africa with type species originally described as *Mesoceration rivulare* Perkins & Balfour-Browne, 1994. The inference is that this Gondwanan group, from Africa and Madagascar, has undergone many splits, dispersals and extinctions during the Cretaceous. Changes in habitat preference and the associated adaptations have also been, for example, adaptation to life on wet rocks, madicoly. The ancestor of *Prosthetops* moved from madicoly to rockpools, with further evolution involving some species returning to wet rocks.

BILTON D T, JÄCH M A, RIBERA I & TOUSSAINT E A 2022. Minute moss beetles in the Southern Hemisphere: molecular phylogeny, historical biogeography and habitat shifts (Coleoptera: Hydraenidae). *Systematic Entomology* doi: 10.1111/syen.12567 pp. 21.

PALAEOZOIC OVERVIEW

Such an all-embracing title demands an attempt to talk about water beetles alone. The authors point out that while the Mesozoic, Palaeogene and Neogene insect faunas all look like the modern one a typical Palaeozoic insect differs in its development, particularly in the wings. Although no original material is provided - this is, after all, a review - it would be the most recent paper from which to cite "The early radiation of Coleoptera is well documented from at least the Early Permian and from several localities worldwide. Indeed, fossils attributed to the Gyrinidae are known from the Late Permian, while families of less-confident subordinal assignment, like Permocupedidae, Ponomarenkiidae, Rhombocoleidae, Triadocupedidae, and Tshekardocoelidae are well documented throughout the Permian. .... the Tshekardocoleidae and Permocupedidae form a transition series from relatively soft-bodied to hard-bodied and desiccation-resistant stem Coleoptera." Being hard-bodied was a good thing during the Late Permian Extinction.

PROKOP J, NEL A & ENGEL M S 2023. Diversity, form, and postembryonic development of Paleozoic insects. *Annual Review of Entomology* doi.org/10.1146/annurev-ento-120220-022637 401-429.

FINLAND AND DNA ACCURACY

It may seem pootling to link this extraordinarily effective initiative to inaccuracy but it does provide our best handle on the problem. This newly created library of mitochondrial DNA Cytochrome oxidase barcodes comprises 10,811 (45%) of the 23,956 insect species known to occur in Finland. One thousand insect and spider species were run through the system, finding that 91% were correctly assigned on the new BOLD data-base alone, or 85% if combined with the existing data, or, really worryingly, only 75% based on the old material. Now, if one is writing up a report on insects found in a nature reserve, say, would that survey be acceptable if one admitted to 9 in a 100 or, diabolically, 1 in 4 identifications being likely to be incorrect? But here is nevertheless a fantastic resource, and things can only get better.

ROSLIN T and 96 others 2022. A molecular-based identification resource for the arthropods of Finland. *Molecular Ecology Resources* **22** 803-822.

AGABUS SAFEI

The type material for *Agabus safei* Andul-Karim & Ali was stored in the Iraqi Natural History Museum, and may not have survived. It was originally described from Iraq as a species more elongate and lighter in colour than *A. conspersus* (Marsham). A male taken by V. Stolbov in 2019 in Kazakhstan may belong to this species. It is distinctive in having very thin lateral margins to the pronotum, and is not the same as the only other *A. nebulosus*-group species known from Kazahstan, *A. nebulosus* (Foster) itself and *A. dichrous* Sharp. Ideally, a neotype should be located in Iraq in order to consolidate the position. The photograph is courtesy of Sasha Sazhnev.

SAZHNEV A S, PROKIN A A & STOLBOV V A 2022. First record of *Agabus safei* Abdul-Karim et Ali, 1986 (Dytiscidae) from Kazakhstan. *Russian Entomological Journal* **31** 385-389.

BEAVER, SEDIMENT AND INVERTEBRATES

A survey from 2018 to 2020 in the Polish Carpathians focussed on the potential of beaver ponds to reduce sedimentation caused by forestry activities. The analysis of data is complex, but it appears that most index values are lower for beaver ponds and disturbed sites than for reference sites, with values broadly in line with the level of disturbance. Beetle genera get plenty of mentions, mainly in association with beaver ponds. The density of beetles was highest (181 individuals/m²) in the reference sites and nearest, 172, in the "nearly vitalised sites". Read the paper for more detail. The correspondent is Krzysztof Kukuła.

BYLAK A & KUKUŁA K 2022. Impact of fine-grained sediment on mountain stream macroinvertebrate communities: forestry activities and beaver-induced sediment management. *Science of the Total Environment* **832** doi.org/10.1016/j.scitoenv.2022.155079 pp. 16.

EXOCELINA IN NEW GUINEA

Twenty-six species groups are recognised in New Guinea. With one exception all are running water species and endemic to the island. *Exocelina baliem* Shaverdo, Hendrich & Balke lives in stagnant water and belongs to the *E. ferruginea* group, which has Australian and New Caledonian representatives. That in itself makes for an interesting story. Another concerns the modification of the antennae, seen mainly in males, and to be found more in New Guinean *Exocelina* species than in any other dytiscid genus. This appears to have occurred independently up to ten times. Hooklike bristles on the fourth anterior tarsal segment are the main diagnostic character for the genus. This feature varies with the modification of the male antennae and the surface mattness of females, indicating sexual selection.

SHAVERDO H & BALKE M 2022. A species-group key and notes on phylogeny and character evolution in New Guinean *Exocelina* Broun, 1886 diving beetles (Coleoptera, Dytiscidae, Copelatinae). *ZooKeys* **1131** 31-58.

OCHTHEBIUS GRANULATUS IN CZECH REPUBLIC

New records are from the rivers Otava and Vydra in the Šumava Mountains in western Bohemia.

BENEDIKT S & SIEBER A 2019. Nálezy vodan *Ochthebius* (*Enicocerus*) *granulatus* (Coleoptera: Hydraenidae) na Šumavě. *Západočeské entomologické* **10** 71-74.

One hundred and fifty water beetle species are listed from Radom, including the Kozienicka Forest. Seven of them are on the Polish Red List - *Haliplus fulvicollis* Erichson, *Hygrotus nigrolineatus* (Steven), *Rhantus incognitus* Scholz, *Spercheus emarginatus* (Schaller), *Enochrus bicolor* (Fab.), *Hydrophilus aterrimus* Eschscholtz, and *Cercyon tristis* (Illiger). The Pacynka river at Antoniówka (illustrated) had a fauna including *Ilybius subtilis* (Erichson), *Acilius canaliculatus* (Nicolai), *Dytiscus dimidiatus* Bergsträsser, *Hydaticus seminiger* (De Geer), *Laccornis oblongus* (Stephens), and *Platambus maculatus* (L.)

GREŃ C, MILKOWSKI M & PRZEWOŹNY M 2023. Chrząszcze wodne (Coleoptera: Adephaga, Hydrophiloidea, Byrrhoidea) Radomia i jego okolic wraz z Puszczą Kozienicką. *Rocznik Muzeum Górnośląskiego w Bytomiu Przyroda* **29** 1-31.

GUJURATI BEETLES

Orectochilus orissaensis Vazirani, *Laccophilus parvulus* Aubé, *Guignotus flammulatus* (Sharp) (shown here) and a *Dactylosternum* are recorded.

KOSYGIN L, DASH S, GURMAYUM S D & RATH S 2019. *Fauna of Narmada and Tapi Estuaries, Gujurat, Estuarine Ecosystem Series* **11** 1-91, 16 plates. 410 rupees, $18, £12.

***DESMOPACHRIA* 133 + 19**

Nineteen newly described species are scattered across existing species groups and some newly proposed ones, originating in Guyana, Suriname and Venezuela, bringing the total known species to 152.

MILLER K B 2022. Nineteen new species of *Desmopachria* Babington, 1841 (Coleoptera, Adephaga, Dytiscidae, Hydroporinae, Hyphydrini) with notes on the taxonomy of the genus. *ZooKeys* **1136** 1-56.

POLISH PONDS WITH AND WITHOUT FISH

This is a study of the densities of water mites, aquatic beetles and bugs in Poland in seventeen large ponds with (10) and without (7) introduced young carp. Each site had twenty traps, ten in open water and ten among emergent vegetation. Correspondence analysis showed *Acilius sulcatus* and *Laccophilus minutus* as extreme indicators of the fish-free life, with *Hyphydrus ovatus* being at the other extreme, found only in the sites with fish and there almost entirely in open water.

Extract of Table S4 in Nieoczym *et al.* (2022) displaying abundance as a % of total beetle individuals within two habitats in ponds with and without young carp

	no fish		fish	
Species	open water	vegetated shoreline	open water	vegetated shoreline
Haliplus flavicollis Sturm	1.1	0.3	37.5	0
Haliplus laminatus (Schaller)	6.3	0	0	0
Noterus clavicornis (De Geer)	0	7.7	12.5	13.8
Noterus crassicornis (Müller)	0	3.5	12.5	21.3
Agabus undulatus (Schrank)	40.7	29.5	12.5	8.1
Rhantus latitans Sharp	17.2	16.9	0	4.8
Rhantus suturalis (Macleay)	1.6	5.7	0	0
Cybister lateralimarginalis (De Geer)	0	8.7	0	22.6
Acilius sulcatus (L.)	0	1.8	0	0
Graphoderus austriacus (Sturm)	6.3	15.4	0	9.7
Hyphydrus ovatus (L.)	0	0	25.0	2.1
Laccophilus minutus (L.)	0	7.1	0	0
Macroplea appendiculata (Panzer)	19.4	2.1	0	8.3

But these numbers can be deceptive, the fish-free ponds supporting larger and more diverse populations of water beetles. No beetle species were found to be significantly associated with fish presence. The long-held view is upheld that *Agabus undulatus*, with its pelagic larvae, is particularly prone to fish predation, but some *undulatus* obviously survived in the presence of fish. The importance of emergent vegetation as providing refugia is well exemplified by these data, though the values for open water in fish ponds are based on fewer individuals than the rest.

NIEOCZYM M, STRYJECKI R, BUCZYŃSKI P & KLOSKOWSKI J 2023. Differential abundance, composition and mesohabitat use by aquatic macroinvertebrate taxa in ponds with and without fish. *Aquatic Insects* **85** doi.org/10.1007/s00027-022-00922-y 25 pp. 16 + tables.

REARING A WHIRLIGIG,
AND A RARE ONE AT THAT

Some of us thought this was scarcely possible but one must hand it to the staff of the Ishilkawa Insect Museum, twenty-six eggs all brought to third instar, and eighteen adults coming out of the pupa. The larvae enjoyed chironomid larvae, as per the illustration courtesy of Kohei Watanabe.

WATANABE K, SAIKI R, SUMIKAWA T & YOSHIDA W 2022. Rearing method for the endangered species *Dineutus mellyi mellyi* Régimbart, 1882 (Coleoptera: Gyrinidae). *Aquatic Insects* doi.org/10.1080/01650424.2022.2 pp. 10.

BELARUS RECORDS

Seven species are newly recorded from the Stronga Reserve in the Baranovichi district of Belarus: *Noterus clavicornis* (De Geer), *Cybister lateralimarginalis* (De Geer), *Hydaticus transversalis* (Pontoppidan), *Laccophilus hyalinus* (De Geer), *Enochrus testaceus* (Fab.), *Helochares obscurus* (Müller) and *Donacia brevicornis* Ahrens. Sixty-five species of water beetle are currently known from the reserve.

RYNDEVICH S K & YUKHIMOVICH D S 2022. Additions to the list of water beetles (Coleoptera: Dytiscidae, Noteridae, Hydrophilidae, Chrysomelidae) of the Stronga Reserve [in Russian] *Report of the Berezinsky Biosphere Reserve* **17** 157-160.

Biodiversity indexes are compared for the water bugs and beetles of five river systems in the Berezinsky Biosphere Reserve and in the Belovezhskaya Pushcha National Park. Intact ecosystems had more species than disturbed ones.

RYNDEVICH S K, KHVORIK Yu A, LUKASHUK A O, ZEMOGLYADCHUK A V & LUKASHENIA M A 2022. Taxonomic and ecological structure of true bugs (Hemiptera: Heteroptera) and beetles (Coleoptera) in intact floodplain ecosystems of Belarus [in Russian]. *BarSU Herald* **2** 38-49.

The sites investigated were intact parts of river floodplains at Vishya near Leski and Nemerzhanka in the Belovezhskaya Pushcha National Park. Ninety-three species of bugs and beetles were recorded.

RYNDEVICH S K, ZEMOGLYADCHUK A O & LUKASHENYA M A 2021 Taxonomic composition of heteropterans (Insecta: Hemiptera: Heteroptera) and beetles (Insecta: Coleoptera) of intact floodplain ecosystems of rivers in the National Park "Belovezhskaya Pushcha". *BarSU Herald* **1** 51-58.

Fifty-three invertebrate species were recorded in thirteen springs in the Baranovichi district of Belarus. Analysis included pH, conductivity, total salt content, biochemical oxygen demand, water hardness, nitrates, chlorides and sulphates. Nine water beetles are named to species, none of them subterranean. For example, in the spring here illustrated at Sunglovsh-china, only *Hydroporus nigrita* (Fab.) was found but it still looks like an interesting place to visit!

RYNDEVICH S, ZUEV V N, KOKHAREVA Yu A & DUKO E P 2022. Taxonomic composition of invertebrate in springs of Baranovichy district as an indicator of their ecological state [in Russian]. *BarSU Herald* **1** 61 75.

AZORES UPDATE

Detected belatedly following an enquiry this is a useful update on Azorean water beetles. Twenty-seven species are noted, including *Enochrus fuscipennis* (Thomson) as an addition. *Agabus godmanni* Crotch, *Hydroporus guernei* Régimbart and *Ochthebius freyi* (d'Orchymont) are endemic to the Azores.

LAMELAS-LÓPEZ L, RAPOSEIRO P M, V. BORGES P A& FLORENCIO M 2017. Annotated checklist of aquatic beetles (Coleoptera) and true bugs (Heteroptera) in the Azores Islands: new records and corrections of colonization status. *Zootaxa* **4353** 117-132.

WEEVIL MOLECULAR DATABASE

The latest catalogues indicate that are 15,407 species of weevil known in the Palaearctic of which about 3,500 occur in the Western Palaearctic. This barcode data-base, with new records in red on the authors' map, is tested for reliability using genetic distances between "good species". One record in Britain, in Kent, and none in Scandinavia. The map has not reproduced well.

SCHÜTTE A, STÜBEN P E& ASTRIN J J 2023. Molecular weevil identification project: a thoroughly curated barcode release of 1300 Western Palearctic weevil species (Coleoptera, Curculionoidea). *Biodiversity Date Journal* **11** e96438 pp. 42.

BELGIAN NEW FINDS

The new species for Belgium are *Oulimnius major* (Rey), *Augyles intermedius* Kiesenwetter, *Contacyphon putoni* Brisout de Barneville, and *C. ruficeps* Tournier. Species rediscovered in Belgium are *Helophorus fulgidicollis* Motschulsky, *H. longitarsis* Wollaston, *Ochthebius auriculatus* Rey, *Esolus pygmaeus* (Müller), and *Riolus nitens* (Müller). A record for *O. pusillus* Stephens was later corrected by Nobby (pers. comm. to GNF 17 January 2023) to *O. marinus* (Paykull).

THYS N & van NUNEN F 2022. Four new and six rediscovered water beetles new for Belgium (Coleoptera: Elmidae, Helophoridae, Heteroceridae, Hydraenidae, Scirtidae). *Bulletin de la Société royale belge d'Entomologie* **158** 201-210.

MORE ON *OCHTHEBIUS*

This is a much more detailed version of the conference abstracts described in ***Latissimus* 53** 3. Where *Ochthebius lejolisii* Mulsant & Rey and *O. quadricollis* Mulsant might be able to occur and where they actually occur was compared on the Mediterranean coast of Spain. Both live in water with salinity from 1.8 to almost 140 grams per litre, with larval *quadricollis* withstanding up to 180 g/l. Laboratory work showed that *O. lejolisii* has greater potential for physiological tolerance.

MIRÓN-GATÓN J M, BOTELLA-CRUZ M, GARCÍA-MESEGUER A J, MILLÁN A & VELASCO P 2022. Discordant pattern between realised and fundamental saline niches in two supralittoral *Ochthebius* species (Coleoptera: Hydraenidae). *Ecological Entomology* doi: 10.1111/een.13220 pp. 11.

ARGENTINIAN ENDEMIC SCIRTID

Ora mediolineata is newly described as a marsh beetle endemic to Argentina. It was first noted as *Scirtes brevenotatus* var. *mediolineatus* by Pic. The name *mediolineatus* was used infrasubspecifically and so can be used again.

LIBONATTI M L & NARDI G 2022. A commentary on the status of *Scirtes brevenotatus* v. *mediolineatus* Pic, 1928 from Argentina (Coleoptera: Scirtidae). *Zootaxa* **5190** 141-142.

***HYDROCHARA FLAVIPES* IN POLAND**

A find near Lublin City confirms the gradual northern expansion of this species north.

GÓRAL N & MIKOŁAJCSUK P 2023. [A new record of *Hydrochara flavipes* (Steven) (Coleoptera: Hydrophilidae) in Lublin Upland] *Notatki Entomologiczne* **8** 96-97 [in Polish with English summary]

CHINESE *PLATYNECTES*

The title says it all, the new species being *maizuqii* from Guangdong and *pangu* from Yunnan, and twelve species are fully illustrated, keyed and mapped. Feng-long Jia and Jaroslav Šťastný are the authors for correspondence.

JIANG Z-H, JIA F-L & ŠŤASTNÝ J 2023. Two new species of *Platynectes* Régimbart, 1879 from China with notes on other Chinese members of the genus, including a key to species (Coleoptera: Dytiscidae: Agabinae). *Zootaxa* **5227** 401-425

***LATELMIS* LARVA**

The larva of *Latelmis torikaii* Kamite, Yoshitomi & Hayashi was reared from adults, and is differentiated from the larva of *L. gracilis* Sharp.

HAYASHI M & MORII T 2023. A record of *Leptelmis torikaii* larva from Amami-Ôshima, Ryukyu, Japan (Coleoptera, Elmidae). *Special Bulletin of the Hoshizaki Foundation* **32** 9-12.

ARGENTINE ELMIDAE

The subtropical mountain forests of Argentina are known as the Yungas. The elmid dataset comprises 355 records for ten genera and sixteen species. *Austrelmis* and *Macrelmis* dominate the database.

ALBANESI S A, CRISTOBAL L, MANZO V & NIETO C 2020. Dataset of the Baetidae (Ephemeroptera) and Elmidae (Coleoptera) families from the Yungas of Argentina. *Revista de la Sociedad Entomológica Argentina* **79** 17-23.

***HYDROGLYPHUS GEMINUS* IN IRELAND**

Two specimens were taken by Geoff Oliver on Harper's Island, County Cork (vice-county H5) in 2021. Professor Balfour-Browne had rejected a 19th Century record.

OLIVER G 2023. *Hydroglyphus geminus* (Fabricius) a water beetle (Coleoptera, Dytiscidae) new to Ireland from Co. Cork. *Irish Naturalists' Journal* **39** 97.

***MACROPLEA* IN POLAND**

A record of *M. appendiculata* is reported from 2022, the site being at pH 6.2 and with a conductivity of 320 µS/cm.

GAWROŃSKI A & GAWROŃSKI A 2022. [New site of a rare leaf beetle - *Macroplea appendiculata* (Panzer, 1794) (Coleoptera: Chrysomelidae) on Dobiegniewske lakeland.] *Przegląd Przyrodniczy* **33** 100-102. [in Polish with English abstract]

***ELMIS AENEA* MONTANE?**

Contrary to claims otherwise *E. aenea* occurs in both uplands and lowlands in Poland, 85 sites being known away from mountainous areas. *E. aenea* is described in the abstract as "oxyphilic" which Paweł tells me is a direct translation from the Polish word for oxygen, tlen, and was intended to be used for a preference for well-oxygenated waters. But oxyphilic is based on the Greek οξύ for acid and φίλοc for love, and is used in cytology for acid-staining cells. Being less frequent in alkaline waters, *E. aenea* would just about fit both versions.

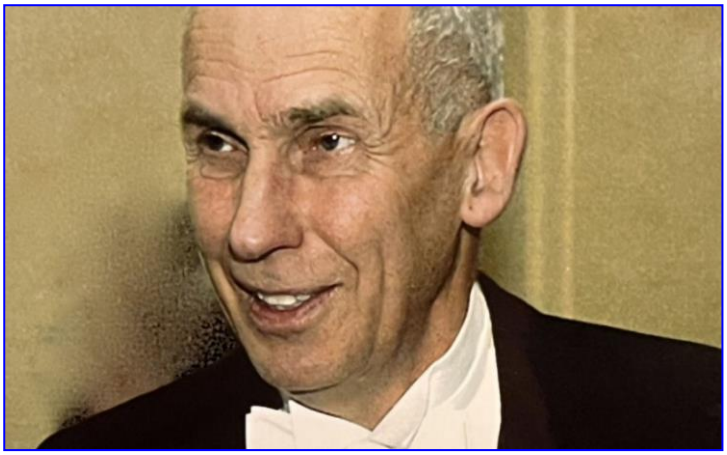
BUCZYŃSKI P & BUCZYŃSKA E 2022. [Is *Elmis aenea* (Müll.) (Coleoptera: Elmidae) a true mountain species in Poland? Remarks about its occurrence outside mountain and submontane regions.] *Przegląd Przyrodniczy* **33** 94-99. [in Polish with English abstract]

BRIAN MORRISON 2022

Brian produced an entry for the British Journal of Entomology and Natural History supplement *Lifetimes of Entomology!,* edited by Steve Judd, and published in December 2022. He died in October 2022, but this recent account of his life is very instructive. An Ayrshire man with a University of Glasgow degree he worked originally on stored products pests and then became a prominent freshwater biologist working at the Fisheries Laboratory in Pitlochry on fish losses associated with acid rain. He generated over 200 records of water beetles from the 1960s until about 2002, many from remote Scottish sites but only produced one paper about beetles so far as can be found.

MORRISON B R S 1986. New records of *Gyrinus distinctus* Aubé and *Gyrinus bicolor* F. (Col., Gyrinidae) in Scotland. *Entomologist's monthly Magazine* **122** 200.

JAN LANDIN 10 JULY 1939 - 4 OCTOBER 2022



Jan, or Janne as he was known to many, spent his life researching and teaching ecology. He started his work in the University of Stockholm and in 1975 took up an appointment in Linköping University in 1975, remaining there until 2011 when he retired as Emeritus Professor. His interests ranged well beyond water beetles but he often worked in freshwater ecology, including visits to Ethiopia, Eritrea and Kenya. He co-founded the Entomological Society of Östergötland and for many years was active in the Eklandskapet Foundation in Linköping. Robert Angus recalls first making contact in the 1960s, the common interest being *Helophorus brevipalpis* (see ANGUS R 2011 Remembering the dreamtime Latissimus **30** 2-8). Landin later went to the International Congress of Entomology and a post-congressional excursion to the Irkutsk district in the course of this he collected *H. aspericollis* Angus and *orientalis* Motschulsky along “the road to Mongolia”, and sent them to Robert, who went that same "road" later (Angus 2011). We first met him when he came to the Club's New Forest meeting in 1999.

Jan Landin's publications covering water beetles.

LANDIN J 1968. Weather and diurnal periodicity of flight by *Helophorus brevipalpis* Bedel (Col. Hydrophilidae). *Opuscula Entomologica* **33** 28-36.

LANDIN J 1976. Methods of sampling aquatic beetles in the transitional habitats at water margins. *Freshwater Biology* **6** 81-87.

LANDIN J 1976. Seasonal patterns in abundance of water-beetles belonging to the Hydrophiloidea (Coleoptera). *Freshwater Biology* **6** 89-108.

LANDIN J 1980. Habitats, life histories, migration and dispersal by flight of two water-beetles *Helophorus brevipalpis* and *H. strigifrons* (Hydrophilidae). *Holarctic Ecology* **3**: 190-201.

LANDIN J 1980. *Habitats, life histories, migration and dispersal by flight in water beetles (Hydrophilidae and Hydraenidae)*. Stockholms Universitet.

LUNDKVIST E, LANDIN J & MILBERG P 2001. Diving beetle (Dytiscidae) assemblages along environmental gradients in an agricultural landscape in southeastern Sweden. *Wetlands* **21** 48-58.

LUNDKVIST E, LANDIN J & KARLSSON F 2000. Migrating diving beetles (Dytiscidae) in agricultural and urban landscapes in southeastern Sweden. In: *The importance of wetlands for biodiversity in agricultural and urban landscapes*. E. Lundkvist, Linköping Studies in Science & Technology, Thesis No **837** 57-80.
LUNDKVIST E, LANDIN J & KARLSSON F. 2002 Dispersing diving beetles (Dytiscidae) in agricultural and urban landscapes in south-eastern Sweden. *Annales Zoologici Fennici* **39** 109-123.
LUNDKVIST E, LANDIN J & MILBERG P 2001. Diving beetle (Dytiscidae) assemblages along environmental gradients in an agricultural landscape in southeastern Sweden. *Wetlands* **21** 48-58.
LANDIN J & STARK E 1973. On flight thresholds for temperature and wind velocity, 24-hour flight periodicity and migration of the water beetle *Helophorus brevipalpis* Bedel (Col. Hydrophilidae). *Zoon* supplement **1** 105-114.

SCIRTID LARVAE, OLD AND NEW

Larval remains in the Lower Cretaceous beds of Koonwarra, Victoria, have been found to conform to the extant genus *Nektriscyphon* in the *Pseudomicrocara* group. The fossil larvae have sharply pointed tips to the mandibles, which in extant species are used to build pupal cells on land.

With apologies to Chris Watts and Howard Hamon this might be linked to 27 October 2022 in Fonah Bog when an eDNA sample was taken in the hope of redetecting *Hydroporus scalesianus* Stephens in its only known place in Scotland. The site abounded in *Contacyphon* larvae none of which have ever been identified to species before so far as I know. eDNA detected *C. variabilis* (Thunberg). GNF

WATTS C H S & HAMON H 2023. Fossil marsh beetle larvae (Scirtidae: Coleoptera) from the Lower Cretaceous (Aptian) Koonwarra fossil bed of Victoria, Australia. *Alcheringa* doi.org/10.1080/03115518.2023.2184493 pp. 5.

STRAINING THE WATER, STRAINING CREDIBILITY?

An attempt is made to link an eight week exposure in a river of cotton T-shirts, socks made of a synthetic fabric and ordinary bottom sediments with vegetation to forensic entomology. Invertebrates are identified to eight groups but no beetles were named. T-shirts caught more than socks.

The Belchista wetland is a 137 ha area of flooded forest and other wetland in North Macedonia. The case is made for its immediate adoption for conservation but its claimed biodiversity is based on 30 taxa of mostly common invertebrates, though three species, a leech and two snails, are reckoned to be endemic. The only beetle is *Hydrophilus piceus* L.

BARTKOWSKA A, MIECZAN T & PŁASKA W 2023. Colonization of artificial substrates by invertebrate macrofauna in a river ecosystem - implications for forensic entomology. *International Journal of Environmental Research and Public Health* **20** 2834 pp. 11.
TRAJANOVSKI S, ZDRAVESKI K, TRAJANOVSKA S, GJORESKA B B, ZOROSKI G & TRICHKOVA T 2023. Macroinvertebrate fauna of Belchista Wetland, Republic of North Macedonia: diversity and conservation status. *Acta zoologica Bulgarica* **75** 133-144.

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