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# ***LATISSIMUS***

**NEWSLETTER OF THE  
BALFOUR-BROWNE CLUB**

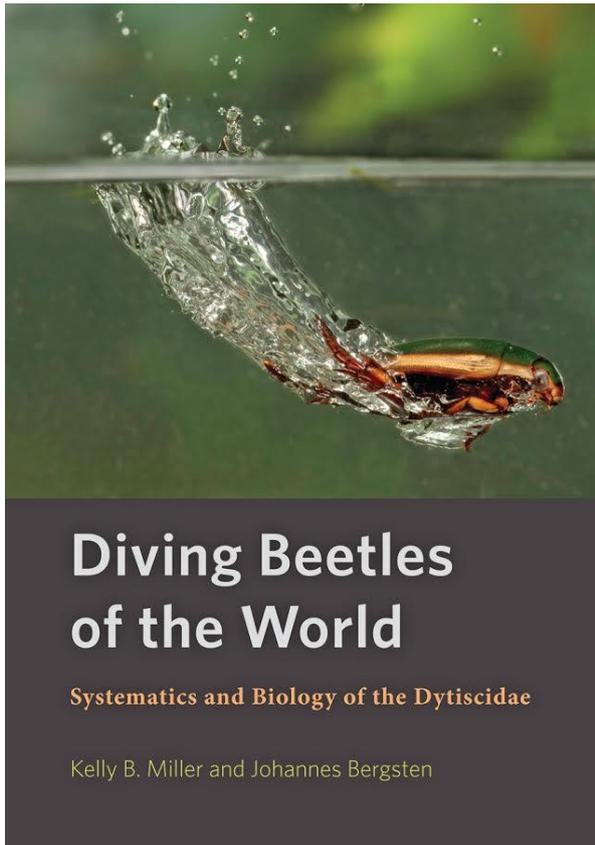


**Number Thirty Nine**

**February 2017**

Front cover: *Thermonectus marmoratus* Gray, the Sunburst Diving Beetle. From Figure 20.16 of *Diving Beetles of the World*, courtesy of Johannes Bergsten.

## DIVING BEETLES OF THE WORLD



📖 MILLER K B & BERGSTEN J 2016. *Diving Beetles of the World. Systematics and biology of the Dytiscidae*. Baltimore: Johns Hopkins University Press. ISBN various – e.g. hardback 13:978-1-4214-2054-7. Advertised at £111 in UK, but shop around for a deal at £77-£90.

With the new classification\* in place the DNA can take a backseat to the real stars, resulting in a book that stands comparison with David Sharp's *magnum opus*. We start with a misspelling that will appeal to some, the point being that the name of the first genus should really have been *Dyticus*, but we are not allowed unjustified emendations, so *Dytiscus* it is. There are 188 genera recognised just now with over 4,300 species, contrasting with Sharp's 1,140 species in about 200 genera. The book starts with a concise essay on their biology followed by a well-illustrated account of habitat range, ending with subterranean and occasional terrestrial habits. A dytiscoid from the middle Permian in China would appear to be the earliest fossil just over 250 million years ago [see also page 7 of this issue]. The

account of fossils and subfossils is barely two pages long but all-encompassing and quotable. Collecting methods also get the concise but comprehensive treatment as does the human element. This starts with the need for conservation, passes through prehistoric human dung containing *Cybister explanatus* LeConte, and ends with the American Cherokee theory that a diving beetle created the earth from the mud of chaos and that young girls in some parts of Africa encourage diving beetles to bite their nipples to stimulate breast development. Then onto the meat of the book, with a perfectly illustrated guide to anatomy followed by keys to adults and larvae of most Dytiscidae and a special key covering subterranean and terrestrial species. The next 208 pages are devoted to keys to genera and accounts of each genus including global distributions. With 135 years elapsed since Sharp's work, will we have to wait until 2151 for whatever might pass for a book at that time? One way of recognising the value of this work, apart of course from buying it, is to take on board the use of *Coelambus* as a full genus (see their page 203). Funnily enough this is the only point on which I might take issue...." *Coelambus salinarius* [Wallis] is the only known diving beetle that can traverse the surface film and fly directly from the water surface." Not quite, as *Coelambus confluens* (Fabricius) can do it too (see the British and Irish Atlas page 304). Ed.

\* if you can afford it, see Miller, K.B. & Bergsten, J. 2014. The phylogeny and classification of predaceous diving beetles. Chapter 3, pp. 49-172 in D.A. Yee (ed.) 2014. *Ecology, Systematics, and the Natural History of Predaceous Diving Beetles (Coleoptera: Dytiscidae)*. Dordrecht: Springer.

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**WATER PURSLANE IS WORTH A CLOSER LOOK****John H. Bratton**

Water purslane *Lythrum portula* (L.) (previously *Peplis portula*) is a rather inconspicuous creeping annual plant found in sunny, seasonally flooded areas such as pond edges and poached patches in marshy grassland, on calcium-poor soils. Its reddish stems distinguish it from common water starwort *Callitriche stagnalis* Scopoli, which can occur in the same habitat. *L. portula* is listed as the food plant of the weevils *Dieckmanniellus gracilis* (Redtenbacher) and *Pelenomus olssoni* (Israelson) in Morris and Read (1990) and Morris, Read and Turner (2008) respectively, and these beetles are the only ones mentioned as associates of this plant by Philp (1991). I can report four more as follows.



Water purslane showing feeding damage, near Llyn Pen-y-parc Photograph: John Bratton

*Altica oleracea* (L.): Tywyn-gwyn, Anglesey, SH295816, 25 June 2002, 4 females, det. M.L. Cox.

*Pelenomus canaliculatus* (Fåhraeus): Malltraeth Marsh RSPB reserve, Anglesey, SH454714, 17 August 1997, 2 males and 2 females, det. A.P. Fowles.

*Pelenomus comari* (Herbst): Malltraeth Marsh RSPB reserve, SH454716, 5 August 2000, 2 adults, det. A.P. Fowles.

*Pelenomus quadrituberculatus* (Fab.): Morfa Harlech NNR, Merionethshire, SH565336, 10 July 1997, 1 male, det. A.P. Fowles; Tywyn-gwyn, Anglesey, SH295816, 25 June 2002, 3 males, det. A.P. Fowles; pond by the Menai Strait near Plas Porthamel, Anglesey, SH50736731, 26 July 2011, several adults, det. JHB, aedeagus checked.

These are all records of adults found on *L. portula*, so are not proof of it being able to support these beetles through their entire life cycle.



I can also contribute the following records of *P. olssoni* on water purslane:

Illtyd Pools, Breconshire, SN958258, 23 June 2006, 7 adults; Llyn Cawr, Radnorshire, SO086505, 25 June 2003, 1 female; Blaenhow quarry pools, Radnorshire, SO092458, 8 August 1998, 2 males and 2 females; Morfa Harlech NNR, Merionethshire, SH565336, 10 July 1997, 1 male; Glanllynau, Caernarvonshire, SH451375, 28 July 2000, 3 males and 1 female; Caeau Pen-y-clip nature reserve, Anglesey, SH555728, 16 June 2010, abundant in a dry pond, though on 27 July 2010 when the pond held several inches of water, only one could be found, clinging to a floating terminal rosette of *L. portula*; marsh near Llyn Pen-y-parc, Anglesey, SH584748, 15 August 2011, several; track in Malltraeth Marsh RSPB reserve, Anglesey, SH451714, 22 June 2014. The pre-2005 records are det. A.P. Fowles and the later ones det. JHB.

Most of these *P. olssoni* records are from *L. portula* growing on mainly bare soil. When you approach the plant, the weevils tend to draw in their legs and freeze on the soil surface, but if you sit still for a minute or two, they will start to move again and are easy to see. I imagine they would be very vulnerable to suction sampling which could remove a whole colony.

I am grateful to Adrian Fowles and Mike Cox for their identifications.

### References

- MORRIS M G & READ R W J 1990. Orthocerous weevils Coleoptera: Curculionoidea (Nemonychidae, Anthribidae, Urodontidae, Attelabidae and Apionidae). *Handbooks for the identification of British insects* 5 (16).
- MORRIS M G, READ R W J & TURNER J 2008. True weevils (part II) (Coleoptera: Curculionidae, Ceutorhynchinae). *Handbooks for the identification of British insects* 5 (17c).
- PHILP E G 1991. Vascular plants and the beetles associated with them. pp. 183-198 in *A coleopterist's handbook*, 3rd ed., ed. J. Cooter. Feltham, Amateur Entomologists' Society.

Received January 2017

## MINGULAY

This uninhabited island is at the southern end of the Outer Hebrides archipelago, 19 km south of Barra. The survey took place in 2013 in what might be termed “summer” in more favoured parts of Britain. Nevertheless, insects were found including *Agabus bipustulatus* (L.), *Hydroporus gyllenhalii* Schiödte, *H. longulus* Mulsant & Rey, *H. pubescens* (Gyllenhal), *Helophorus flavipes* Fab., *Anacaena globulus* (Paykull), *Enochrus fuscipennis* (Thomson), *Chaetarthria simillima* Vorst & Cuppen, and *Dryops luridus* (Erichson).

ROBINSON J, HANCOCK G, HEWITT S M & MANN D 2015. The terrestrial invertebrate fauna of Mingulay, including 18 species records for the Outer Hebrides. *The Glasgow Naturalist*, **26**, 71-83.

## URANIUM DOWN UNDER

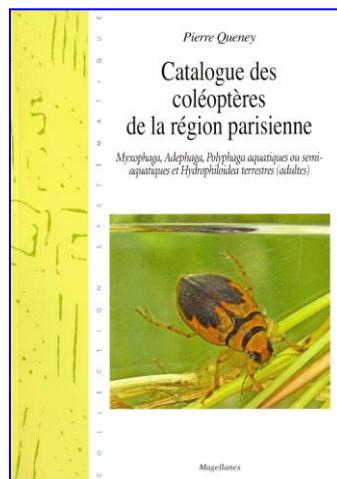
Three new subterranean dytiscid species are described from groundwater in Western Australia. DNA analysis shows that the Yeelirrie *Limbodessus* species are more related to beetles in neighbouring calcretes than they are to each other. The trouble is that these beetles live in an area rich in uranium deposits. A proposed mine would require a lowering of the water table and inevitable losses to the stygofauna. Apart from the usual illustrations of the beetles themselves an accompanying chart shows the details of the “Carey Palaeoriver” in Western Australia.

EBERHARD S M, WATTS C H S, CALLAN S K & LEIJS R 2016. Three new subterranean diving beetles (Coleoptera: Dytiscidae) from the Yeelirrie groundwater calcretes, Western Australia, and their distribution between several calcretes deposits including a potential mine site. *Records of the Western Australian Museum* **31** 27-40.

## MOROCCAN ADDITIONS

Imlily is a relict Saharan wetland in the Dakhla-Oued Ed Dahab region in the south of Morocco with many small ponds. Eight species of beetle were recorded:- *Nebriporus ceresyi* (Aubé), *Ochthebius bifoveolatus* Waltl, *O. cuprescens* Guillebeau, *O. notabilis* Rosenhauer, *Enochrus bicolor* (Fab.), *Paracymus aeneus* (Germar), *Berosus hispanicus* Küster and *B. guilielmi* Knisch, the latter a member of the *B. nigriceps*-group and new for the Palearctic

BENNAS N, HIMMI O, BENAMAR L, L'MOHDI Q, AZIZ EL AGBANI M, QNINBA A & MILLÁN SÁNCHEZ A 2016. Premières données sur les coléoptères et les hémiptères aquatiques de la Sebkhia d'Imlily (Région de Dakhla-Oued Ed Dahab, sud-ouest du Maroc), avec la première citation de *Berosus guilielmi* Knisch, 1924 (Coleoptera, Hydrophilidae) pour la Domaine Paléarctique. *Boletín de la Sociedad Entomológica Aragonesa* **59** 117-126.



## PARIS CATALOGUE

📖 QUENEY P 2016. *Catalogue des coléoptères de la région parisienne. Myxophaga, Adephaga, Polyphaga aquatiques ou semi-aquatiques et Hydrophiloidea terrestres (adultes)*. Collection Systématique **27**. Conflans Sainte Honorine: Magellanes. ISBN 978-2-35387-125-4

No other capital has been treated to this kind of survey! The following are mapped: *Sphaerius acaroides* Waltl, nine Gyrinidae, 16 Haliplidae, 2 Noteridae, *Hygrobia hermanni* (Fab.) (also on the cover), 84 Dytiscidae, 16 Helophoridae, *Georissus crenulatus* (Rossi), 7 Hydrochidae, 65 Hydrophilidae inc. terrestrials, 20 Hydraenidae, 15 Scirtidae, 15 Elmidae, 8 Dryopidae, 4 Limnichidae, and 4 Heteroceridae.

### ACILIUS VS GRAPHODERUS

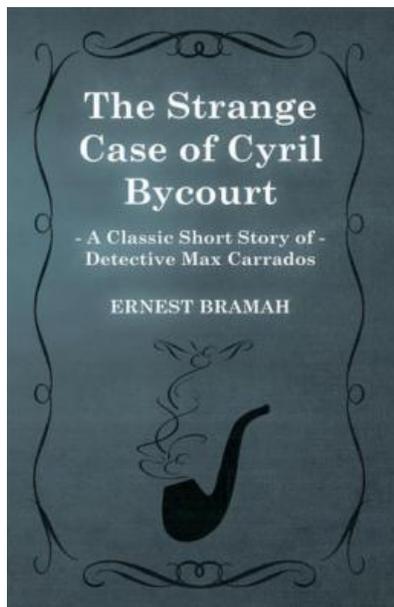
The relationships between flight experiments on 1,128 individuals and distribution were explored for *Acilius* (*canaliculatus* 242, *sulcatus* 164) and *Graphoderus*. (*bilineatus* 232, *cinereus* 338, *zonatus* 15). *Acilius* flew more (97%) than *Graphoderus* (14%). Flight activity of *Graphoderus* was restricted to "stressed situations immediately after the emergence of adults" whereas *Acilius* flew whenever. These stressed situations are not discussed in the paper, only mentioned in the abstract, and could presumably be crowding, lack of food, build-up of natural enemies or drying out. The colonisation rates for recently created ponds matched these differences in flight potential, being 81 and 31 % for *Acilius* and *Graphoderus* respectively. This interesting paper highlights the fact that differences in flight capability occur even in those species that have fully developed flight musculature throughout their adult life.

LØNSMANN IVERSEN L, RANNAP R, BRIGGS L & SAND-JENSEN K 2017. Time-restricted flight ability influences dispersal and colonization rates in a group of freshwater beetles. *Ecology & Evolution* doi: 10.1002/ece3.2680 7 pages.

### BIAŁOWIEŻA

This famous Polish park is well known for its wetland beetles, with about 180 species recorded. The survey in 2015, reported here amongst a number of surveys covering a wide range of plants and animals, is a little disappointing. Only 44 species, with none of the extreme rarities. *Hydaticus aruspex* Clark was perhaps the best find.

TOŃCZYK G & GUSTA D 2016. Water beetles (Coleoptera aquatica). pp. 154-159 in R. Kryściak-Kosiński & E. Wilk-Woźniak (eds) *The Aquatic Ecosystems of Białowieża National Park*. Białowieża National Park.



### MORE GENTLEMANLY

From "The Strange Case of Cyril Bycourt" in "Max Carrados Mysteries" (Hodder & Stoughton 1927, Penguin 1964), p.191 in the Penguin edition.

"There I go again!" confessed Miss Hamilton with a gesture of despair. "How can I expect you to advise me? Well, Millie married a Mr Bycourt - Mark Bycourt - who still lives a few miles from here. He was quite a nice sort of man, but a little old for her, I thought, considering her looks and chances, and he really didn't appear to be interested in any subject except water beetles. It seems a strange taste for a man. He might have taken up golf, or prize poultry, or politics, or lots of things, I mean, that would have seemed more - well, gentlemanly."

"Quite a number of people are interested in water beetles", observed Carrados mildly.

### CRIMEAN LIMNEBIUS

The new species belongs to the *furcatus* subgroup of the *parvulus* species group, and is similar to *L. stagnalis* Guillebeau. Some of the species to be found with it in rivers are quite interesting too:- *Hydroporus dobrogeanus* Ienișteanu, *H. transgrediens* Gschwendtner, *Laccobius aegeus* Gentili [see page 9 of this issue for its new status], *L. simulatrix* d'Orchymont, and *Limnebius myrmidon* Rey, the latter new for Ukraine.

PRZEWOŻNY M, GREŃ C & JÄCH M A 2016. *Limnebius* (*Limnebius*) *agnieszkae* sp. n. from the Crimean Peninsula (Coleoptera: Hydraenidae). *Zootaxa* **4184** 391-394.

## FLORIDA 2016 Report on a symposium held at the International Congress of Entomology, Orlando, Florida, 27 September 2016



David Bilton attended this symposium entitled *Systematics and Diversity of Aquatic Beetles: an Emerging Model System in Evolutionary Biology*. He made up the European contingent together with Johannes Bergsten, Helena Shaverdo, Emmanuel Toussaint and Wilco Verberk. There was an excellent range of talks and the meeting provided a great opportunity to meet up with other water beetle workers, either again or for the first time. There were also plenty of bars in easy walking distance. Highlights for me included hearing about ancient Madagascan whirligigs and the enigmatic historical biogeography of *Oocyclus* as well as getting new insights into noterid phylogeny. There were a number of other water beetle talks scattered across the sessions of this enormous conference, including presentations from Yves Alarie and Wilco Verberk. After the water beetle symposium some of us took the opportunity to get out into the field, the primary driver being Grey Gustaffson's desire to get *Gyrinus rockinghamensis* LeConte for phylogenetic work. The *Gyrinus* failed to surface, but we did find a number of taxa interesting to a European, including *Coptotomus*, *Matus* and the spider elmid *Ancyronyx variegatus* (Germar). It was also a novel experience to be collecting in sites with resident alligators. Thanks go to Andrew Short for organising an enjoyable and productive meeting, and to Grey for a couple of great field trips. **DTB**

### KAZAKH BEETLES

This is a welcome addition to our knowledge of beetles in the south of Kazakhstan. *Platambus sagdianus* Jakovlev and *Sphaeridium marginatum* Fab. are new for Kazakhstan and four are noted as new for the south – *Helophorus lapponicus* Thomson, *Berosus bispina* Reiche & Saulcy, *B. fulvus* Kuwert, and *Ochthebius meridionalis* Ferro. One hundred and twenty-one species are noted in all, the less familiar (to most us) including *Agabus basalis* (Gebler), *A. dichrous* (Sharp), *Colymbetes semenowi* Jakovlev, *Hydaticus grammicus* (Germar), *Rhantus bistriatus* (Bergsträsser), *Ochthebius minabensis* Ferro, *Helophorus kirgicus* Knisch, *Hydrochus kirgicus* Motschulsky, *Hydrochara affinis* Sharp, *Augyles turanicus* Reitter, *Micilus minutissimus* Sahlberg, *Bagous argillaceus* Gyllenhal, and *B. faustii* Schilsky.

TEMRESHEV | | 2016. To the fauna and distribution of aquatic beetles (Insecta, Coleoptera) of South Kazakhstan. *Acta Biologica Sibirica* 2 15-28. [in Russian]

### NEW RUSSIAN RECORDS

Four species are recorded for the first time from Russia – *Botriophorus atomus* Mulsant & Rey, *Limnichus incanus* Kiesenwetter, *Bagous bagdatensis* Pic and *B. geniculatus* Hochhult. *Helophorus uvarovi* Angus is recorded for the first time from European Russia. Range extensions are noted for *Cybister lateralimarginalis* (De Geer), *Limnoxenus niger* (Gmelin), *Paracymus aeneus* (Germar), *Hydrophilus piceus* (L.), *Laccobius albipes* Kuwert, *L. gracilis* Motschulsky, *L. simulatrix* d'Orchymont, and *L. striatulus* (Fab.). There are also new records for *Haliplus zacharenkoi* Gramma, *Agabus fulvaster* Zaitzev, *Helophorus angustatus* Motschulsky, *H. barbarae* Angus, *Georissus costatus* Laporte de Castelnau, *Enochrus segmentinotatus* (Kuwert), *E. nigratus* (Sharp), *Pelochares versicolor* (Waltl), and *Bagous dieckmanni* Gratshev.

LITOVKIN S V & SAZHNEV A S 2016. New data on the distribution and biology of water beetles (Coleoptera: Haliplidae, Dytiscidae, Helophoridae, Georissidae, Hydrophilidae, Limnichidae, Curculionidae) in Russia. *Euroasian Entomological Journal* **15** 17-24. [in Russian with English abstract]

### MONTENEGRO UPDATE

In 2014 several species were added to the known Montenegrin fauna - *Haliplus dalmatinus* Müller, *H. heydeni* Wehncke, *H. laminatus* (Schaller), *Hydroporus erythrocephalus* (L.), *Hyphydrus anaticus* (Guignot), *Melanodytes pustulatus* (Rossi), and *Rhantus bistriatus* (Bergsträsser). This brings the total Hydradephaga to 91 species.

SCHEERS K 2016. An updated checklist of the water of Montenegro. *Spixiana* **39** 205-212.

### NEW DATES FOR ORIGINS

It was suggested (*Latissimus* **39**, p. 22) that the review of the analysis of representatives of 172 of the 183 extant families of Coleoptera by Duane McKenna *et al.* (2015) was “a little equivocal depending on which array of nucleotides was used”. The current paper is more challenging, proposing that the divergence times for various beetle groups were under-estimated because the wrong subset of fossil Coleoptera was used and because of problems with the method. The new analysis puts all superfamily origins back in time by a significant margin. For example, the 95% probability ranges of dates move back the late Triassic to the late Permian for the Hydradephaga and from the late Jurassic to about the same time. The Coleoptera originated in the Mid Carboniferous, about 333 million years ago as opposed to the mid Permian 242 m.y.a. Wow! These are big difference requiring a rethink on the reasons why things changed when they did, and, of course, a robust reply from the other cluster of authorities!

The authors also use an old illustration of *Dytiscus dimidiatus* Bergsträsser from what they describe as “James Duncan’s notorious book”. Notorious is the right word and some passages are such that no English person living in Scotland would care to repeat. You can get it on the web instead.



DUNCAN J 1852 *Natural History of Beetles*. Edinburgh: W H Lizars.

TOUSSAINT E F A, SEIDEL M, ARRIAGA-VARELA E, HÁJEK J, KRÁL D, SEKERKA L, SHORT A E Z & FIKÁČEK M 2017. The peril of dating beetles. *Systematic Entomology* **42** 1-10.

**KOLEOPTEROLOGISCHE RUNDSHAU 86**

Another great issue for the well-travelled water beetle  
**HYDATICUS**

Nine species are recognised in the *pacificus* group, including three newly described species. Another new species, *laosensis*, is described here because it externally resembles *H. pacificus* Aubé. For those who don't know them, these species have markings rather like the European *H. transversalis* (Pontoppidan), only mostly even better.

WEWALKA G 2016. Revision of the species of the *Hydaticus* (*Prodaticus*) *pacificus* group of the Palearctic, Oriental and Australian Regions, and description of a new species of the *H. (P.) bihamatus* group (Coleoptera, Dytiscidae). **KR 86** 9-45.

**NEPTOSTERNUS AND COPELATUS**

Brief and to the point. This is the smallest *Neptosternus* known so far.

BILARDO A & ROCCHI S 2016. *Neptosternus pusillus* sp. n. from Burkina Faso, and *Copelatus jaechi* sp. n. from Zambia (Coleoptera, Dytiscidae). **KR 86** 47-49.

**NEOTROPICAL HALIPLIDAE**

This paper kicks off with additions to the checklist and a revised key. The new species is *novateutonianus* from Brazil.

VONDEL B J van 2016. Corrections and additions to the "Revision of the Haliplidae of the Neotropical Region including Mexico" (Vondel & Spangler 2008) with description of a new species (Coleoptera, Haliplidae). **KR 86** 51-59.

**GREEK HYDRAENA**

Five new species are expertly described and beautifully illustrated.

JÄCH M A & DÍAZ J A 2016. New and little known Palearctic species of the genus *Hydraena* (s.l.) Kugelann. XI. Descriptions of three new species from the Greek island of *Euboea*, and taxonomic notes on the *Hydraena* (s.str.) *dryops* complex (Coleoptera, Hydraenidae). **KR 86** 61-81.

**JAPANESE HYDRAENA**

*Hydraena namiae* is described from Honshu, based on material collected by Yuuki Kamite.

JÄCH M A & DÍAZ J A 2016. *Hydraena* (s.str.) *namiae*. A new species from Toyama Prefecture (Japan) (Coleoptera, Hydraenidae). **KR 86** 83-89.

**COMORO HYDRAENA**

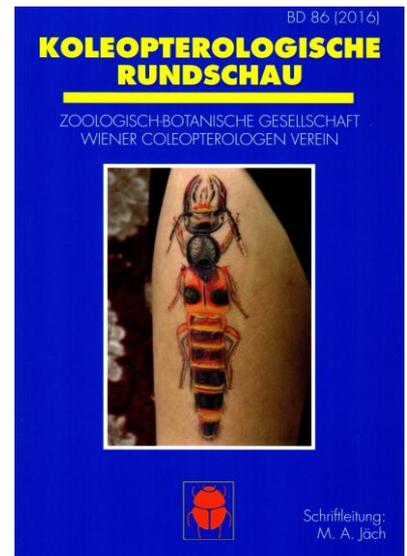
*Hydraena maryae* is described from Mayotte in the Comoro Islands, a volcanic archipelago in the Indian Ocean.

JÄCH M A & DELGADO J A 2016. An update of the *Hydraena* fauna of the Comoro Islands (Indian Ocean), with description of *H. (Hydraenopsis) maryae* sp. n. from Mayotte (Coleoptera, Hydraenidae). **KR 86** 91-96.

**NEW SARDINIAN OCHTHEBIUS**

Scopulus is Latin for cliff and refers to the wet cliff face about two metres above the beach at Cala Mariolu, a typical *poweril/metallascens* habitat. The new species externally resembles *O. dalmatinus* Ganglbauer, *O. huberti* Jäch and *O. javieri* Jäch, and has an aedeagophore very like that of the Algerian *O. kieneri* Jäch, though it is probably not too closely related to that species.

KÖHLER J, JÄCH M A & DELGADO J A 2016. Revision of the Palearctic species of the genus *Ochthebius* Leach, 1835. XXXI. *Ochthebius scopuli* sp. n. from Sardinia (Italy) (Coleoptera, Hydraenidae). **KR 86** 91-102.



### CAUCASIAN LACCOBIUS

Fifteen species are known with certainty from the southern Caucasus, and four more remain doubtful. *Laccobius azerus* Gentili is newly described from Azerbaijan. *L. aegaeus* Gentili and *L. meridionalis* Gentili are raised to species status from subspecies of *obscuratus* Rottenberg, and *L. orchymonti* Gentili is reduced to a variety of *obscuratus*. *L. sardeus* Baudi, originally described from Sardinia, is regarded as a dark form of *L. gracilis* Motschulsky. A key is provided to species from the southern Caucasus.

GENTILI E & SHAVERDO H 2016. Review of the genus *Laccobius* Erichson, 1837 from Armenia, Azerbaijan, and Georgia, with description of a new species (Coleoptera, Hydrophilidae). *KR* **86** 171-198.

### AMERICAN ELMIDS

*Promoresia* Sanderson is reduced to a synonym of *Optioservus*, and two species are redescribed in new combinations, *O. elegans* (LeConte) from the eastern USA and Québec, and *O. tardellus* (Fall) from the east of North America.

KAMITE Y 2016. Revision of the genus *Optioservus* Sanderson, 1953, part 3: the *O. elegans* species group (Coleoptera: Elmidae). *KR* **86** 205-212.

### PARAGUAYAN HETERO CERIDAE

Four new species of *Tropicus* are described in this review of the family in Paraguay.

SKALICKÝ S 2016. New species and new records of *Tropicus* Pacheco, 1964 from Paraguay (Coleoptera: Heteroceridae). *KR* **86** 213-222.

### CHINESE HYDROCYPHON

*H. fissus* is described as a relative of *H. mirabilis* Yoshitomi & Satô from Guizhou.

KLAUSNITZER B 2016. Eine neue Art der *Hydrocyphon mirabilis*-Artengruppe aus China (Coleoptera: Scirtidae). *KR* **86** 223-228.

### DONACIA BREVITARSIS

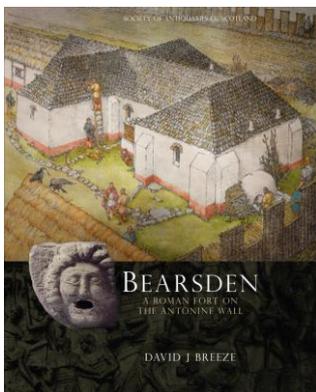
New records for Austria include recognition of museum material of *D. brevitarsis* Thomson, a species previously mixed up with *D. antiqua* Kunze, and it is advised that this misidentification has occurred elsewhere.

GEISER E 2016. Additions to the checklist of the Chrysomelidae of Austria (Coleoptera: Chrysomelidae). *KR* **86** 229-230.

### NEW AUSTRIAN RECORDS

*Georissus costatus* Castelnau, *Dryops viennensis* Castelnau, and *Limnichus incanus* Kiesenwetter are wetland beetles new for Central Austria. A 1980 record of *Bagous diglyptus* Boheman is also noted from Niederösterreich, this latter species being terrestrial, found on *Saxifraga granulata*.

JÄCH M A, PLONSKI I S & SCHÖNLEITHNER A 2016. Bemerkenswerte Käferfunde aus Österreich (XXII) (Coleoptera). *KR* **86** 289-292.



### ROMAN FORT BEETLES

LOCKE J 2016. Insect remains. Chapter 17, pp. 289-299 in: David J. Breeze (ed.) *Bearsden. A Roman Fort of the Antonine Wall*. £30 from the Society of Antiquaries of Scotland.

The Antonine Wall lies to the north of Hadrian's Wall in Scotland. Deposits in ditches associated with a fort on the Wall have yielded many beetle fragments including *Ilybius aenescens* Thomson, *Hydroporus memnonius* Nicolai, *H. pubescens* (Gyllenhal), several *Helophorus* and *Cercyon* species, *Anacaena globulus* (Paykull), *Hydraena britteni* Joy, *Ochthebius minimus* (Fab.) and, well north of its present range, *O. pusillus* Stephens, plus two running water indicators *Laccobius striatulus* (Fab.) and *Oulimnius tuberculatus* (Müller).

### PHILIPPINE DIVERSITY

A checklist of 317 species and subspecies of aquatic and riparian beetles is provided for the Philippines for the first time. It comprises: Hydroscaphidae 1; Gyrinidae 15; Dytiscidae 65; Noteridae 4; Haliplidae 2; Hydraenidae 15; Hydrochidae 2; Spercheidae 1; Hydrophilidae 72; Scirtidae 49; Elmidae 23; Dryopidae 2; Psephenidae 16; Eulichadidae 1; Limnichidae 20; Heteroceridae 5; Malachiidae 5; Lampyridae 15; Nitidulidae 4. Sixty-three per cent are endemic to the Philippines. Only one endemic genus is currently recognised, the hydrophilid *Enochrella* Hansen. *Anacaena* Thomson is particularly speciose – 15 endemics. It is estimated that there are more than 500 taxa yet to be discovered.

FREITAG H, JÄCH M A & WEWALKA G 2016. Diversity of aquatic and riparian Coleoptera of the Philippines: checklist, state of knowledge, priorities for future research and conservation.

*Aquatic Insects* doi.org/10.1080/0160424.2016.1210814 37 pp.

### “RARE SUPER BEETLE MAKES A BRAVE STAND”

[ZELDZAME SUPERKEVER HOUDT DAPPER STAND](#)

### DYTISCUS LATISSIMUS IN THE NETHERLANDS



Gert van Ee has drawn attention to an item put on the web on 3 October 2016 in which it is noted that *Dytiscus latissimus* L. is confined to few lakes in south-west Drenthe, being discovered there in 2005, and is considered at risk. The Bargerveen Foundation has been conducting research into the habitat of these beetles, showing that

their food, caddisfly larvae is in short supply in Drenthe. The picture shows Milouska Meulens and Hein van Kleef examining the catch in a keepnet trap.

<http://vroegevogels.vara.nl/nieuws/zeldzame-superkever-houdt-dapper-stand>

### SUFFOLK SHORELINE

In bringing forward a willow beetle as new to Britain, Steve Lane and Howard Mendel report on other beetles found washed up in tidal reed debris on Southwold beach in England. These included *Noterus clavicornis* (De Geer), *Liopterus haemorrhoidalis* (Fab.), *Enochrus halophilus* (Bedel), *Donacia clavipes* Fab. and *Phaedon armoraciae* (L.). The paper is citable for its discussions about how species might arrive from the Netherlands and just what should be considered as a proper addition to the British list. This reminds the editor of the day (16 January 1967) when a dead scarab beetle was found in a puddle near Eridge, East Sussex (*Entomologist's Monthly Magazine* **103** 136). It was finally identified as the southern Africa *Pholops flavocinctus* (Klug), perhaps an extreme example of a non-resident beetle with migratory tendencies.

LANE S A & MENDEL H 2016. *Chrysomela vigintipunctata* (Scopoli, 1763) (Chrysomelidae) new to Britain. *The Coleopterist* **25** 57-62.

## HERON KILLS

Kevin Scheers has sent this photograph of a jigsaw of *Dytiscus* parts disgorged by a heron.



## MASSIF CENTRAL SUBFOSSIL STUDY

Five beetle assemblage types could be recognised in the radioactive carbon-dated deposits at Aubrac running from the Late Glacial to the Holocene. The lowest, being periglacial, is poor in beetle material. The next, from the Oldest Dryas and the Late Glacial Interstadial, is characterised by beetles of open environments and beetles from running water. The next, in the Younger Dryas, is associated with cold-adapted taxa and a decrease in the running water species. In the next, from the Early Holocene, the cold-adapted species disappear and there is a dramatic peak in running water species. However, the topmost horizon, from the Early to Mid Holocene, has no running water species but plenty of other beetles. This pattern is compared with the pollen diagram. One example of this work is what characterises the rapid melting of the Holocene - a collapse in the numbers of snow patch beetles, an increase in running water beetles and an increase in the pollen of plants of deep water.

PONEL P, GUITER F, GANDOUIN E, PAILLES C, RIOUAL P, DJAMALI M, ANDRIEU-PONEL V, LEYDET M, VAN DER PUTTEN N & DE BEAULIEU J-L 2016. Novel insights from coleopteran and pollen evidence into the Lateglacial/Holocene transition in Aubrac, French Massif Central. *Palaeogeography, Palaeoclimatology, Palaeoecology* **463** 83-102.

## NEW HISTORICAL RECORDS OF *GRAPHODERUS BILINEATUS* FROM BELGIUM

Kevin Scheers

In 2015 I wrote an article in which I gave an account of all known records of *Dytiscus latissimus* Linnaeus, 1758 and *Graphoderus bilineatus* (Degeer, 1774) from Belgium (Scheers, 2015). *D. latissimus* was last collected in 1921 near Kalmthout and for *G. bilineatus* this was in 1948 near Herentals. Thinking I had seen all material in the museum collections and the more important private collections, I mentioned nevertheless the possibility that there could still be extra records in unknown private collections. However, I found, more or less by accident, one box of Dytiscidae in the collections of the Royal Belgian Institute of Natural Sciences that I seem to have overlooked back then. In this box there were different species of Dytiscidae caught by Emile Derenne, including several interesting species like *Ilybius subaeneus* Erichson, 1837, *Rhantus bistriatus* (Bergsträsser, 1778) and also two specimens of *Graphoderus bilineatus*. One of those two specimens was taken on 21.V.1938 at “Bergh”. In Belgium there are, however, at least three villages called “Bergh” at that time and for now I cannot be certain which of these three was intended. The second specimen was taken at Zoerle (province of Antwerpen) on 18.VI.1950. This is the first record of this species in Belgium post 1949. The locality is located in the valley of the river Grote Nete, a region from which also four other historical records of this species are known.

### Reference

SCHEERS K 2015. *Dytiscus latissimus* Linnaeus, 1758 and *Graphoderus bilineatus* (Degeer, 1774) in Belgium: a detailed account of the known records (Coleoptera: Dytiscidae). *Bulletin de la Société royale belge d'Entomologie* **151** 34-39.

Received December 2016

## CURONIAN SPIT

Oh dear! Eight authors, rather less water beetles, e.g. *Hydroglyphus geminus* (Fab.), *Anacaena lutescens* (Stephens), *Coelostoma orbiculare* (Fab.), *Contacyphon pubescens* (Fab.). This appears to have been the first attempt to look at entomology in general on the Lithuanian part of this 100 km long sand-dune spit bordering the Baltic, the Russian part having had surveys dedicated to water beetles in the past (ALEKSEEV V I & SHAPOVAL A P 2011. [The species and quantitative composition of beetles sampled on light in the national park “Curonian Spit” (Russia) in 2010 year. *Nature Reserves in Ukraine* **17** (1-2) 76-84 [in Russian] – see **Latissimus 31** page 11; ALEKSEEV V I 2012. Dytiscidae, Noteridae, Haliplidae, Hydraenidae, Hydrophilidae, Hydrochidae, Helophoridae, Spercheidae and Dryopidae (Coleoptera) of the Russian part of the Curonian Spit: an attempt of complex faunal analysis. *Zoology and Ecology* **22** 57-63 – see **Latissimus 32** page 9).

PAUKKUNEN J, BISTRÖM O, BUDRYS E, HELVE E, LAGERCRANTZ C-G, MANNERKOSKI I, ORLOVSKYTE S & TÄHTINEN M 2016. Entomological excursion to the Curonian Spit in August 2016. *Naujos retos Lietuvos Vabzdžiu Rūšys* **28** 97-119.

## AUSTRIAN CITIZEN SCIENCE IN ACTION

The 17<sup>th</sup> GEO-Day of Diversity took place in 2015 with 45 experts generating records for 989 species in an urban reserve between Klagenfurt and Wörthersee. Singled out for special mention in the overall review are *Acilius canaliculatus* (Nicolai) (der Gestreifte Furchenschwimmer) and *Tanysphyrus lemnae* (Paykull) (der Wasserlinsen-Rüsselkäfer). Also of interest are *Gyrinus suffriani* Scriba and *Limnius opacus* Müller.

JÄCH M A 2015. Von Furchenschwimmer und Gemeinem Gelbrand: Wasserkéfer. Geotag Lendspitz – Maiernigg 2015. *Carinthia II* **206** 45-48.

## NETHERLANDS ENTOMOLOGICAL SOCIETY 170<sup>th</sup> FIELD MEETING

This took place 5-7 July 2015 in Gelderland around Ede. Forty-eight entomologists identified 1,275 arthropod species including about 113 wetland beetle species. Beetle records are summarised by Oscar Vorst (pictured, collecting *Prionocyphon serricornis* (Müller) – photograph Oscar Franken). No great new records but then the site is within a stone's throw of the home of Jan Cuppen and Arja Span.

FRANKEN O & BERG M P 2016. Entomofauna in de gemeente Ede. Verslag van de 170e NEV-zomerbijeenkomst. *Entomologische Berichten* **76** 174-195.



## BELGIAN LABOULBENIALES

Working back from the 2014 paper two others reveal more interest in these remarkable fungi – and some insights into how understanding of their biology is being developed by use of DNA.

2008 paper – *Rhynchophoromyces anacaenae* Scheloske on *Anacaena lutescens* Stephens; *Laboulbenia fennica* Huldén on *Gyrinus substriatus* Stephens; *L. gyrincola* Spegazzini on *G. marinus* Gyllenhal; *Hydraeomyces halipli* (Thaxter) on *Haliplus immaculatus* Gerhardt, *H. lineatocollis* (Marsham), *H. lineolatus* Mannerheim and *H. ruficollis* (De Geer).; *Chitonomyces italicus* Spegazzini, *C. melanurus* Peyron and *C. paradoxus* (Peyron) on *Laccophilus hyalinus* De Geer. The co-occurrence of what appear to be different species with their thalli confined to certain positions is discussed. *C. italicus*, for example, is confined to the tarsi of the left hind leg, where it is quite difficult to see, being small and the same colour as the beetle.

2012 paper – *Chitonomyces aculeifer* Peyron on *Graptodytes pictus* (Fab.), confined to the underside of the right side of the pronotum. The three supposed species of *Chitonomyces* found on *Laccophilus* are discussed again, putting forward the theory that a single species grows differently depending on where it is found on the host's body.

2014 paper - *Cantharomyces denigratus* Thaxter, *C. italicus* Spegazzini and *Helodiomyces elegans* Picard on *Dryops luridus* (Erichson). Three males and one female of the 28 beetles found to be infected carried all three parasite taxa. The distribution of these taxa on the beetle's body is illustrated and discussed.

DE KESEL A & WERBROUCK T 2008. Belgian records of Laboulbeniales from aquatic insects. *Sterbeeckia* **28** 28-54.

DE KESEL A & HAELEWATERS D 2012. Belgian records of Laboulbeniales from aquatic insects (2). *Sterbeeckia* **31** 16-18.

DE KESEL A & HAELEWATERS D 2014. Belgian records of Laboulbeniales from aquatic insects (3) – species from *Dryops luridus*. *Sterbeeckia* **33** 9-15.

## NSW PAROSTER

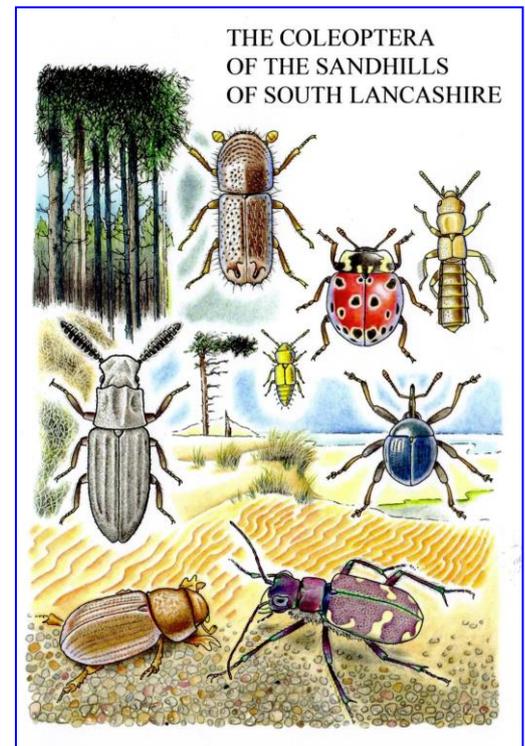
*Paroster lorimeri* was found by sifting leaf debris at the edge of a swamp in New South Wales. Of the 51 species of *Paroster*, 34 are subterranean, two are terrestrial and fifteen, including this new one, are epigeal.

HENDRICH L & BALKE M 2016. A new epigeal *Paroster* Sharp, 1882 from coastal New South Wales, Australia (Coleoptera, Dytiscidae, Hydroporini). *Spixiana* **39** 213-218.

## LANCASTRIAN SANDHILLS

📖 THOMAS J R A, ECCLES T & BOWESTEAD S 2016. *The Coleoptera of the sandhills of South Lancashire*. The Raven Entomological and Natural History Society.

This compilation of beetle records starts with a quotation from David Sharp “A district which has maintained, and to a greater extent does still maintain a rich and exclusive fauna, is the belt of sandhills which line the coast from the mouth of the Mersey to that of the Ribble. Among these sand dunes occurred many otherwise very rare insects, and for a few species this is the only recorded locality in Great Britain”. As one might expect with a sand dune system aquatic records do not exactly dominate but the area is notable for the occurrence of three *Bagous* species, *limosus* (Gyllenhal), *lutosus* (Gyllenhal) and *lutulentus* (Gyllenhal). The book is well produced in soft back, with a map and colour photographs of the authors, some of the sites and some of the beetles. The Raven ENHS does not have a website, but I got my copy from Stan Bowstead for £10 plus postage, and his address and that of the senior authors are in the usual place. Thanks go to Don Stenhouse for alerting me to this publication.



## BULGARIAN NATURAL PARK

This park is part of the Balkan Mountains, mostly in the catchment of the Yantra River. Twenty-five sites were surveyed in 2013, but identifications of over 13,000 specimens are limited to *Gyrinus distinctus* Aubé, *Haliphus obliquus* (Fab.), *Platambus maculatus* (L.), *Deronectes fairmairei* (Leprieur) (new for Bulgaria), a *Boreonectes* that Robert Angus reckons should be *riberae* (Dutton & Angus), *Helophorus brevipalpis* Bedel, *Hydraena assimilis* Rey, *H. excisa* Kiesenwetter, *H. gracilis balcanica* d'Orchymont, *H. leonhardi* Breit (a Bulgarian endemic), *H. minutissima* Stephens, *H. nigrita* Germar, *H. pygmaea* Waterhouse, *H. reyi* Kuwert, *H. riparia* Kugelann, *H. subintegra* Ganglbauer (a Balkan endemic), *Ochthebius metallescens* Rosenhauer, *O. granulatus* Mulsant, *Elmis latreillei* Bedel, *E. maugetii* Latreille, *Esolus angustatus* (Müller), *E. parallelepipedus* (Müller), *Limnius perrisi* (Dufour), *L. volckmari* (Panzer), *Oulimnius tuberculatus* (Müller), *Riolus cupreus* (Müller), and *Pomatinus substriatus* (Müller).

TEOFILOVA T M & PANDAKOV P G 2016. Survey of aquatic coleopterans of Bulgarka Natural Park (Central Stara Planina Mts., Bulgaria). *Acta Zoologica Bulgarica* **68** 343-50.

## THURINGIAN EXCURSION

Fifteen entomologists contributed to this survey of this area of the Thuringian Natural Park, which has 1,600 ponds. However, the aquatic findings are a little disappointing, only six common diving beetles, more hydrophilids, all common apart from *Berosus frontifoveatus* Kuwert, and the other species including *Bagous tubulus* Caldara & O'Brien and *Rhinonchus albicinctus* Gyllenhal.

WEIGEL A 2016. Bericht zur Gemeinschaftsexkursion des Thüringer Entomologenverbandes (TEV) vom 03.05.2016 in das "Plothener Teichgebiet" in Ostthüringen. *Mitteilungen des Thüringer Entomologen-verbandes e. V.* **23** 73-115.

### BYRRHOIDEA-BUPRESTOIDEA PHYLOGENY

This new analysis appears to throw up more questions than it answers in that we still do not have a clear overview of the Byrrhoidea – although at least it appears that “Dryopoidea” are long gone, and that Buprestoidea has had it as a superfamily too. Most analyses of the newly assembled data-base produced monophyletic superfamilies. Byrrhoids were mainly resolved into four lineages: (1) Byrrhidae; (2) Dryopidae + Lutrochidae; (3) Buprestoidea; (4) the left-overs. Analysis mainly produced a string of monophyletic families with their interrelationships not clearly understood. However, Limnichidae were paraphyletic in a clade with Heteroceridae. Psephenidae, represented by Eubriinae and Eubrianacinae, did not work monophyletically and Ptilodactylidae only worked if *Paralichas* in the Cladotiminae was excluded. The Elmidae could be linked to the Ptilodactylidae but elmid subfamilies as currently understood on their morphology could not be resolved genetically. Thus the ribosomal and mitochondrial genes have fared no better than morphology originally in understanding the higher phylogeny of the Byrrhoidea.

KUNDRATA R, JÄCH M A & BOCAK L 2016. Molecular phylogeny of the Byrrhoidea-Buprestoidea complex (Coleoptera, Elateriformia). *Zoologica Scripta* 2016 doi:10.1111/zsc.12196 1-15.

### GERMAN RED LIST

Of 344 water beetle species recorded from Germany eight are considered to be extinct or lost. The previous list, from 1998, had only two of them – *Laccobius albipes* Kuwert and *Ochthebius perkinsi* Pankow. Evidence of loss already existed at the last evaluation for the other species - *Aulonogyrus concinnus* Klug, *Ochthebius foveolatus* Germar, *Limnius muelleri* (Erichson), *Riolus sodalis* (Erichson) and *Stenelmis consobrina* Dufour. *Ochthebius pedicularius* Kuwert had not been detected at the time of the last List, the record being based on old specimens. Ninety-eight species are given a danger category, with several mainly moorland species being given a higher category. Twenty species are classified as rare and 27 are in the Near Threatened category. Just over half of all the species are not considered to be at risk. The new List is finished off with colour illustrations of five dytiscids.

SPITZENBERG D, BALKE M, BELLSTEDT R, BUSSLER L, HESS M & HECKES U 2016. Rote Liste und Gesamtartenliste der wasserbewohnenden Käfer. *Naturschutz und Biologische Vielfalt* **70** 207-246.

### YEE HA!

Apologies to our President for having omitted this photograph from the account of the recent trip to Poland. This complements his interest in all things cowboy (and cowgirl). Apologies about the quality – a very cheap mobile phone.

### MACROPLEA IN POLAND

New locations are given for *Macroplea appendiculata*, four out of the seven being in association with *Potamogeton pectinatus* L.

STRYJECKI R, ŚCIBIOR R & NIEOCZYM M 2016. *Macroplea appendiculata* (Panzer, 1794) (Coleoptera, Chrysomelidae, Donaciinae) – nowe stanowiska i uwagi na temat rzadkiej stonki w Polsce. *Wiad. Entomol.* **35** 243-245.



## CATFIELD FEN SAVED?

The report of the Public Enquiry concerning water abstraction neighbouring Catfield Fen in Norfolk, became available on 19 September 2016. For water beetles Catfield Fen is easily the most important site in the Broads and jointly the top site in Britain alongside Thompson Common. The Planning Inspector comprehensively rejected appeals to continue abstraction, saying:

- there is clear evidence that Catfield Fen is in danger from increased acidification;
- water abstraction is the pre-eminent explanation because it reduces the flow of alkaline groundwater to the Fen;
- fen management is not the cause of the problem;
- there is no over-riding public interest (e.g. local jobs) necessitating the abstraction licences.

There is a history of non-compliance associated with water abstraction and it remains to be seen whether abstraction will cease, and whether, of course, the Fen will show signs of recovery. Congratulations to Tim and Geli Harris in pursuing this case so energetically – and expensively! You should be able to access the Planning Inspector's full report on [www.savecatfieldfen.org](http://www.savecatfieldfen.org).

### Keith McDougall 21 January 1934 – 22 August 2016

It was sad to hear that the Catfield Report was in the offing in the week the passing of Keith McDougall, third son of Douglas McDougall, proprietors in their turn of Catfield Fen, was discussed on BBC Radio 4, *Last Word*, 4 p.m. on 16 September 2016. Peter Hodge recalls John Owen, himself and GNF meeting with Douglas in the Hall's gun room where he was making his own 13-bore shotgun shells.

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## FINISHING THAXTER'S WORK

Roland Thaxter published his first paper describing a laboulbenialian fungus in 1890 and he got to Volume 5 in 1931 but did not complete a general review promised in Volume 6. Three species of *Zodiomyces* are known, all parasitic on Hydrophilidae. Illustrations are reproduced from Thaxter's works of *Z. subseriatus* and *Z. vorticellarius*, and *Z. rhizophorus* is described from Thaxter's microscope slide of a specimen from a hydrophilid in Trinidad. The fireworks refer to the explosion of fruiting bodies from the receptacle. The author for correspondence is Donald H. Pfister.

ROSSI W, HAELEWATERS D & PFISTER D H 2016. Fireworks under the microscope: a spectacular new species of *Zodiomyces* from the Thaxter collection. *Mycologia* **108** 709-715.

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## SOUTH AMERICAN RIFFLE BEETLES

Molecular analysis shows that *Phanoceroides* is within the subfamily Larainae, although it was originally placed in the subfamily Elminae. There is a very full description of *P. fernandesi* Laššová and a photograph of the fast stream in which it lives, above Tobogán de la Selva in Venezuela. That should sound familiar as being very near to where the Spanglers and Warren Steiner first found an entirely new water beetle family, the Meruidae, in 1985 (see *Latissimus* **20** 1). The other paper is representative of a series describing the great diversity of Elmidae in South America, in this case the newly described *Hexanchorus angeli* and *Hypsilara autanai*.

ČIAMPOR F, LAŠŠOVÁ K, MAIER C A, ČIAMPOROVA-ZAŤOVIČOVÁ Z & KODADA J 2016. *Phanoceroides* Hinton, 1939: description of new species, morphology of larvae, and revised taxonomic position of the genus (Coleoptera: Elmidae) based on molecular evidence. *Zootaxa* **4117** 277-288.

LAŠŠOVÁ K, ČIAMPOR F & ČIAMPOROVA-ZAŤOVIČOVÁ Z 2014. Two new Larainae species from Guyana region, Venezuela (Coleoptera: Elmidae). *Zootaxa* **3753** 187-195.

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### SALINITY & DESICCATION

*Enochrus* species with differing salinity statuses were used in desiccation experiments. In Spain *Enochrus halophilus* (Bedel) is thought of as a freshwater-subsaline species sometimes found in running water, the most extreme opposite being *E. jesuarribas* Arribas & Millán, confined to still, hypersaline water, with *E. bicolor* (Fab.) intermediate. *E. jesuarribas* had the highest water content and proved the species most resistant to desiccation. The idea is that strong selection pressure to resist desiccation during a global aridification event provided a mechanism for survival in hypersaline water.

PALLARÉS S, VELASCO J, MILLÁN A, BILTON D T & ARRIBAS P 2016. Aquatic insects dealing with dehydration: do desiccation resistance traits differ in species with contrasting habitat preferences? *PeerJ* 4:e2382; DOI 10.1717/peerj.2382

### DERBYSHIRE SEEDBANK GENERATES BEETLE RECORDS

Examination of sediments in the River Lathkill yielded records for beetles including *Agabus biguttatus* (Olivier), *A. guttatus* (Paykull), *Hydroporus ferrugineus* Stephens, *H. pubescens* (Gyllenhal), *Helophorus brevipalpis* Bedel, *Hydraena palustris* Erichson, *Ochthebius auriculatus* Rey, *Elmis aenea* (Müller), *Limnius volckmari* (Panzer), *Oulimnius troglodytes* (Gyllenhal), and *Riolus subviolaceus* (Müller). The fenland *H. palustris* and the saltpan *O. auriculatus* so far inland have been queried.

STUBBINGTON R, GUNN J, LITTLE S, WORRALL T P & WOOD P J 2016. Macroinvertebrate seedbank composition in relation to antecedent duration of drying and multiple wet-dry cycles in a temporary stream. *Freshwater Biology* 61 1293-1307.

### GRYŻYŃSKI PARK BEETLES

Of the 515 species in this woodland park in eastern Poland 33 are in the Polish Red List. Water beetles include *Gyrinus suffriani* Scriba and *Hydroporus rufifrons* (Müller). A record of *Dytiscus latissimus* L. is considered unreliable.

RUTA R, ORZECZOWSKI R, ALEKSANDROWICZ O, BOROWSKI J, BUCHHOLZ L, KOMOSIŃSKI K, LUBECKI K & PRZEWOŻNY M 2016. Chrząszcze (Insecta: Coleoptera) Gryżyńskiego Parku Krajobrazowego. *Przegląd Przyrodniczy* 27 28-62.

### FOOTPRINTS BECOME STEPPING STONES

Water-filled elephant footprints constitute important habitats in East Africa. Thirty natural footprints were sampled and 61 taxa were detected, dominated by 13 hydrophilid taxa and 9 dytiscid taxa. Eighteen artificial footprints were made at varying distances from natural water sources and 410 macroinvertebrates, mainly water beetles, were collected from them five days later, with diversity least in the pools furthest from the sources.

REMMERS W, GAMEIRO J, SCHABERL I & CLAUSNITZER V 2016. Elephant (*Loxodonta africana*) footprints as habitat for aquatic macroinvertebrate communities in Kibale National Park, south-west Uganda. *African Journal of Ecology* doi: 10.1111/aje.12358

### IRANIAN CHECKLISTS

Altogether listed are Heteroceridae 18; Dryopidae 10; Byrrhidae 8 species; Elmidae 17; Limnichidae 2, and Psephenidae 2. *Augyles hispidulus* (Kiesenwetter) and *Curimopsis taurica* Paulus are newly recorded from Iran. These checklists are also citable for their reviews of the current status of many beetle groups on a global basis.

JÄCH M A, OSTOVAN H, GHAHARI H & PÜRZ A 2016. Annotated checklist of Byrrhoidea (Coleoptera: Byrrhidae, Elmidae, Limnichidae, Psephenidae) from Iran. *Elytron* 28 65-78.

MASCAGNI A, JÄCH M A, OSTOVAN H & GHAHARI H 2016. Annotated checklist of Dryopidae and Heteroceridae (Coleoptera: Byrrhoidea) of Iran. *Zootaxa* 4144 354-364.

### **GRAPHODERUS BILINEATUS IN ITALY**

This single entry is for Italy's representative water beetle in the Habitats Directive. The manual is intended to deliver an appropriate monitoring strategy. The principal threat is given as predation by the crayfish *Procambarus clarkii*. The map shows it in about 13 hectads in northern Italy. Another threat is suggested by photographs that Fernando Pederzani has recently taken of an apparently diseased specimen in the Lago di Pratignano in the high Modena Apennines.



ROCCHI S, ROVELLI V, BOLOGNA M A & ZAPPAROLI M 2016. *Graphoderus bilineatus* (De Geer, 1774) (Ditisco a due fasce). pp. 56-57 in F. Stoch & P. Genovesi (eds) Handbooks for monitoring species and habitats of Community interest (Council Directive 92/43/EEC) in Italy: animal species. ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale), *Series Handbooks and Guidelines* 141/2016. Rome: Ministero dell'Ambiente

### **SEX IN AGABUS ULIGINOSUS**

*Agabus uliginosus* (L.) has dimorphic females, the male-like form and the matt form known as *dispar* Bold. This paper establishes that the males associated with those forms also differ, *dispar* males having broader fore and mid tarsi with more suckers than those associated with the type form. The paper got an airing in the magazine *BBC Wildlife*.

ANON. 2016. Smooth beetle living. *BBC Wildlife*, September 2016 p. 15.

BILTON D T, HAYWARD J W G, ROCHA J & FOSTER G N 2016. Sexual dimorphism and sexual conflict in the diving beetle *Agabus uliginosus* (L.) (Coleoptera: Dytiscidae). *Biological Journal of the Linnean Society* **119** 1089-1095.

### **NEW TIPORUS**

With this new species from North-east Queensland there are now thirteen species of *Tiporus* known. They are all confined to slow-flowing tropical rivers and to the residual pools when these rivers dry up.

HENDRICH L, BALKE M & WATTS C H S 2016. Description of a new *Tiporus* Watts, 1985 from northern Queensland, Australia (Coleoptera: Dytiscidae, Hydroporinae). *Zootaxa* **4189** 174-182.

### **HYDROCHARA FLAVIPES IN POLAND**

This species is new for the area just north-west of the centre of Poland.

LUBECKI K 2016. *Hydrochara flavipes* (Steven, 1808) (Coleoptera: Hydrophilidae) – nowy gatunek dla Niziny Wielkopolsko-Kujawskiej. *Acta entomologica silesiana* **24** 1-2.

### NEWT TO THE RESCUE IN ESTONIA?

Sixty-six ponds constructed to support newts and spadefoot toads (*Pelobates fuscus* (Laurentius)) were compared with 65 natural ponds and 100 other man-made ponds for their odonates and larger dytiscids, the idea being to see if there was a benefit for invertebrates on the back of a conservation initiative for amphibians. No *Dytiscus latissimus* L. or *Graphoderus bilineatus* (De Geer) were found in amphibian-dedicated ponds as opposed to small numbers in the other ponds, up to 18% of all natural ponds for *G. bilineatus*. The best result was that *G. zonatus* (Hoppe) was found in 18% of the amphibian ponds but not in any of the others. "Indicate" in the paper's title is a bit strong. Perhaps we should concentrate on diving beetle-dedicated ponds and see if they support newts? See also page 22 of this issue.

SOOMETTS E, RANNAP R & LÖHMUS A 2016. Patterns of assemblage structure indicate a broader conservation potential of focal amphibians for pond management. *PLoS ONE* **11** (7) e0160012 16 pp.

### EXOCELINA

The new species is described from the westernmost part of West Guinea.

SHAVERDO H, PANJAITAN R & BALKE M 2016. *Exocelina ransikiensis* sp. nov. from the Bird's Head of New Guinea (Coleoptera: Dytiscidae: Copelatinae). *Acta entomologica musei nationalis Pragae* **56** 103-108.

### ALGARVE HYDRAENA

New records are provided for *Hydraena malagricola* Jäch & Díaz and *H. optica* Jäch & Díaz from the vicinity of Monchique, Portugal, on a granite Inselberg. It is no accident that *optica* is an anagram of Picota, the main mountain of the area, and the angry farmer of "*malagricola*" was an inhabitant of the same area. The photograph shows the bridge over the first *optica* site in 2007, two years after the first specimen was found there.



VALLADARES L F, GEREND R & BILTON D T 2016. Further records of endemic Portuguese *Hydraena* Kugelann, 1794 (Coleoptera, Hydraenidae). *Boletín de la asociación española de Entomología* **40** 213-216.

### GYRINUS DISTINCTUS IN BEDS

Recorded alongside *Ilybius fenestratus* (Fab.), *Limnebius papposus* Mulsant and *Ochthebius bicolon* Germar.

DENTON J 2016. *Gyrinus distinctus* Aubé (Col.: Gyrinidae) and *Neobinius procerulus* (Gravenhorst) (Col.: Staphylinidae) in Bedfordshire. *British Journal of Entomology and Natural History* **29** 163

### BRITISH INVERTEBRATE CONSERVATION

This summarises progress in assessing conservation status of British invertebrates. About 3,700 species have been assessed, 10% of the total. Water beetles, with 11% of species considered to be under threat, are comparable to ground beetles, darkling beetles, shield bugs, mayflies and molluscs. The main conservation concern is with butterflies (31%). Overall, 1.3% of the surveyed species are considered to be Regionally Extinct.

WEBB J & BROWN A 2016. The conservation status of British invertebrates. *British Wildlife* **27** 410-421.

**AMBER PTILODACTYLID**

Kaliningrad amber has yielded this beautifully preserved beetle. When you rub amber you get electrons which in turn owe their name to the Greek for amber – and part of the name for this new genus.

ALEKSEEV V I & JÄCH M A 2016. *Electrolichas circumbalticus* gen. et sp. nov. (Coleoptera: Byrrhoidea: Ptilodactylidae) from Baltic amber, the first anchytarsine toed-winged beetles described from Europe. *Zootaxa* **4136** 593-599.

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**SEYCHELLES HYDRAENA**

*Hydraena mahensis* Scott and the new *matyoti* are described and differentiated. *H. mahensis* lives in coastal swamps and *H. matyoti* has been found in various habitats in the mountains. They belong to different species-groups within the subgenus *Hydraena*.

JÄCH M A & DELGADO J A 2016. *Hydraena* Kugelann, 1794 (Coleoptera, Hydraenidae) from the Seychelles, Indian Ocean, with description of a new species. *ZooKeys* **623** 75-88.

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**DAY/NIGHT ACTIVITY**

Although the numbers of insect involved are quite low the results, comparing water bug and water beetle day/night activity at four sites in Poland, are rather convincing. The majority of Hydradephaga showed considerable nocturnal activity whereas bugs appeared to be equally active during the day and at night.

JABŁOŃSKI G & LEPCZYŃSKA M 2014. Dobowa aktywność pluskwiaków wodnych (Hemiptera: Heteroptera) i chrząszczy (Coleoptera). *Wiadomości Entomologiczne* **33** 234-248.

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**BOX TRAP**

Observations were made on the extent to which larger water beetles can escape from traps with and without hinged mesh doors fitted to 3 cm diameter-wide mouths. The differences could be great, for example, over three years of observations in the field a trap without mesh flaps caught two *Cybister brevis* Aubé whereas one with flaps caught 30. These were floating traps. Similar results might be expected for submerged bottle traps.

INODA T & LADION T M A 2016. New box trap for large predaceous diving beetles *Cybister* Curtis, 1827 and *Dytiscus* Linnaeus, 1758 (Coleoptera: Dytiscidae). *Aquatic Insects* <http://dx.doi.org/10.1080/01650424.2016.1208827> 7 pp.

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**SILESIA RECORDS**

The collections of the Upper Silesian Museum, Bytom, have been surveyed to provide a checklist of 18 species found between 1881 and 2004. This list includes *Haliphus varius* Nicolai, found in 1929, and *H. furcatus* Seidlitz in 1892 and 1935. Based on 30 years of reach, 142 species of Dytiscidae are recorded from Silesia.

GREŃ C 2016. Chrząszcze z rodziny Haliplidae (Coleoptera) w zbiorach Muzeum Górnośląskiego w Bytomiu. *Rocznik Muzeum Górnośląskiego w Bytomiu Przyroda* **22** (online 004) 1-7.

GREŃ C, SZOŁTYS H & GRZYWOCZ J 2016. Chrząszcze (Coleoptera) Śląska Dolnego i Górnego – dotychczasowy stan poznania oraz nowe dane faunistyczne: pływakowate (Dytiscidae). *Rocznik Muzeum Górnośląskiego w Bytomiu Przyroda* **22** (online 003) 1-39.

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**REED BEETLE UPDATE IN BRITAIN & IRELAND**

Records are given for eleven species of Donaciinae, mainly from Ireland, Scotland and northern England.

FOSTER G N, NELSON H & CATHRINE C 2016. Further records of Donaciinae in Britain and Ireland, 2010-2015. *The Coleopterist* **25** 69-73.

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### THE HIGHEST WATER BEETLES, *LIHELOPHORUS* IN TIBET



This must be a first as the all singing, all dancing treatment of any subgenus, the taxonomy sorted out including a new species, a redescription of the other two species, description of the first instar larvae of two of the species based on field-collection of adults and analysis of mitochondrial DNA, mitotic and meiotic karyotypes described for all three species, and the highest known altitudinal record for any water beetle, *Helophorus (Lihelophorus) ser* Zaitzev at 5,350 metres a.s.l. Easily the most interesting discovery was that the larvae have tracheal gills on the abdominal segments as in *Berosus*, *Laccobius* and some *Epimetopus*.

ANGUS R B, JIA F. CHEN Z-N, ZHANG Y, VONDRÁČEK D & FIKÁČEK M 2016. Taxonomy, larval morphology and cytogenetics of *Lihelophorus*, the Tibetan endemic subgenus of *Helophorus* (Coleoptera: Hydrophiloidea). *Acta entomologica*

*musei nationalis Pragae* **56** 109-148.

Thanks to Robert Angus for access to the image and to David Bilton for giving it some tweaks.

### HYPERSALINE RUSSIAN FAUNA

Highly saline sites in the Bogdino-Baskunchak State Reserve in south Russia have been investigated. The beetles include *Cybister lateralimarginalis* (De Geer), *Dytiscus circumflexus* Fab., *Helophorus kirgisticus* Knisch, *Berosus frontifoveatus* Kuwert, and *Ochthebius zugmayeri* Kniz.

VORONIN M Y, GREBENNIKOV KA, SAZHNEV A S, BELLANINA S I, MOSOLOVA E Y, ALIEVA Z O & BELONOGOVA Y V 2016. [Makrobenthos of hyperhaline waterbodies of Bogdino-Baskunchakski Nature Reserve]. *News of University of Saratov, Series Chemistry. Biology. Ecology* **16** (2) 168-170. [in Russian]

### GYRINUS PAYKULLI IN BUCKINGHAMSHIRE

Extensive lists of insect on post-industrial sites include what appears to be a new record for Buckinghamshire in southern England in former gravel workings.

JONES R A 2016. Brownfields continue to produce unusual insects – some records of uncommon species found during the last 5 years. *British Journal of Entomology and Natural History* **29** 69-88.

### SEMISUBTERRANEAN EXOCELINA

Semi-subterranean was originally coined by Jack Balfour-Browne to describe species that were not quite subterranean and here is used interchangeably with interstitial. *Exocelina saltusholmesensis* is newly described from a female caught in a pool in a temporary creek in the Northern Territory of Australia. Its eyes are much smaller than in other *Exocelina*, it is pale and its wings are vestigial. DNA analysis places it nearer to surface-living species with larger eyes.

WATTS C H S, HENDRICH L & BALKE M 2016. A new interstitial species of diving beetle from tropical northern Australia provides a scenario for the transition of epigeal to stygobitic life (Coleoptera, Dytiscidae, Copelatinae). *Subterranean Biology* **19** 23-29.

### MORE SOUTH AFRICAN SPECIES

Two new wet rock hydraenids are described, *Pterosthetops nitidus* from the Western and *Oomtelecopon namaqum* from the Northern Cape Province. The new *Hydrobiomorpha* was originally presaged as part of the Lake St Lucia system (see Maputaland hotspot in **Latissimus 38** 5). The new species is closest to *H. occidentalis* Balfour-Browne.

BILTON D T 2016. Two new water beetles from the South African Cape (Coleoptera, Hydraenidae). *Zootaxa* **4137** 585-591.

BILTON D T 2016. A new species of *Hydrobiomorpha* from iSimangaliso Wetland Park, South Africa (Coleoptera: Hydrophilidae). *Acta entomologica musei nationalis Pragae* **56** 149-157.

### MECKLENBURG LAKES

This survey is mainly concerned with terrestrial beetles, but includes records of about sixty wetland species including Scirtidae and Chrysomelidae. Noteworthy species include *Colymbetes paykulli* Erichson, *Hydrophilus piceus* (L.) and *H. aterrimus* Eschscholtz. There are no contact details.

DEGEN B & KASPER D 2015. Die Käferfauna des FFH-Gebietes "Obere Seen und Wendfeld" bei Sternberg. *Virgo, Mitteilungsblatt des Entomologischen Vereins Mecklenburg* **18** 4-27.

### DRYOPS STRIATELLUS IN THE NETHERLANDS

A female of *Dryops striatellus* (Fairmaire & Brisout) was found in Friesland in December 2014 in a place where it was last seen in 1955, prompting its discovery elsewhere and this paper, with a list of all the known sites, a map and a photograph of the larva.

BOONSTRA H & DROST B 2016. Na ruim vijftig jaar een teken van leven van de ruighaarkever *Dryops striatellus* in Nederland (Coleoptera: Dryopidae). *Nederlandse faunistische mededelingen* **46** 101-114.

### AMPHIBIA DO NOT TELL THE WHOLE STORY

The fauna of 89 ponds on the Swiss Plateau were assessed for amphibians, dragonflies, water beetles, molluscs and aquatic plants. Amphibians had the lowest degree of congruence with any of the other groups, and could not act as protecting surrogates for any of them, i.e. conserving a pond for its amphibians is not sufficient to protect other groups. The author for correspondence is Beat Oertli.

ILG C & OERTLI B 2016. Effectiveness of amphibians as biodiversity surrogates in pond conservation. *Conservation Biology* doi: 10.1111/cobi.12802

### CLUB MEETING - BELGIUM 9-12 June 2017

A new country for our annual meeting! We will be based at Sint-Niklaas, which is quite easily accessed by train from the main Brussels airport (Zaventem). Kevin Scheers is putting together a programme of visits which will be displayed on [www.latissimus.org](http://www.latissimus.org) in due course. For those who have not attended in the past please note this is not like other meetings. Organisation is kept to a minimum, trying to make sure that people are in roughly the same place at the same time, and that we have access to some interesting sites without fear of being imprisoned. That's it. The rest is up to you. But make sure we know when you are arriving. There are usually enough hire cars at our meetings to accommodate extra participants. Four hotels are suggested – see [http://www.latissimus.org/?page\\_id=24](http://www.latissimus.org/?page_id=24)



Let Kevin ([aquatic.adephaga@gmail.com](mailto:aquatic.adephaga@gmail.com)) know your estimated dates and times of arrival and leaving. UK participants – also let GNF know ([latissimus@btinternet.com](mailto:latissimus@btinternet.com)) to see if joint travel is possible.

## ON AND OFF THE PLATEAU

Robert Angus

In September 2015 Fenglong Jia and his colleague Dandan Zhang (a lepidopterist) came and stayed with me while working in the Natural History Museum, London. In the course of a very pleasant four weeks Fenglong asked me if I would like to visit China again. “Yes please” was the immediate answer, and please could we visit Kangding on the Sichuan part of the Tibetan Plateau.

Kangding, formerly Tatsienlu, is the type locality of *Boreonectes emmerichi* Falkenström and I was very keen to get chromosomes of beetles from this area. They have rather more extensive dark markings than the Qinghai specimens I had studied in 2013, so I wanted to ascertain whether they really were the same species. Fenglong said yes to this and, over the winter, made various enquiries and arrangements – a suitable car plus driver, and hopefully laboratory facilities. He would not be free to travel till the second half of June, which meant that I was able to take part if the Balfour-Browne Club’s trip to Poland and had time to process any beetles collected. Some you win!

So it was that on June 18<sup>th</sup> I flew to Guangzhou to be met by Fenglong and settled into my familiar hotel on the Sun Yat-sen University campus. The first week was spent checking various things (notably *Hydrobius*) in the collections, meeting up with old friends again, and eating some superb lunches! Then on the 25<sup>th</sup> we flew to Chengdu and on to Kangding the next morning. Our party was made up of Fenglong, Zhi-qiang Li (Dandan’s husband) and Kai Chen, one of Dandan’s research students, who spoke good English.

Kangding airport is high, about 4,250 metres above sea level and I confess to briefly feeling a bit light-headed as I left the aeroplane. However, a few deep breaths and then no more trouble! The bus-ride into town was fascinating, downhill most of the way – “continuous downgrade” as the Chinglish sign so charmingly put it! Soon we were in our hotel, which Dandan had arranged for us, and then the driver arrived. Plans were made, involving first a change of hotel to one which should be more convenient for Kai’s light-trapping, and then off on our first beetle-hunt! I had been unable to pin down the exact type localities for *B. emmerichi* (silly me, I should have used Google, but in the end a blessing in disguise as it turned out), but one, Mukue Tatsienlu, sounded like Muge Co (Tso), a local beauty spot, so we began by heading there. However, it turned out you can’t just drive there but have to park up and use the bus. Hopeless for collecting insects! So, undaunted our driver headed off up the hills along what I hoped would be the small road which, from Google Earth, I had seen looping up and round the back of Kangding airport.



1. First collecting site.



2. Fenglong’s *Boreonectes emmerichi* pool.



### 3. Second collecting site.

And so it was, and when we got to the top the land levelled out and there was beautiful boggy moorland with small pools. I should at this stage point out that the clouds were very low and the rain more or less continuous but not very heavy. Our first stop in this promising area resulted in several *B. emmerichi* and one male *Agabus lobonyx* Guignot, a small member of the *A. biguttatus* group. So, we made our way back to the car and I spent a while photographing some of the beautiful flowers. Fenglong, meanwhile, had found a superb *Boreonectes* pool just beside the road, with the beetles clearly visible swimming over the stony bottom! So, that bulked up the sample nicely – and in fact, it was beetles from this locality which eventually gave excellent chromosome preparations.

On a bit further and then another stop, again wet moorland with small pools and a river. Here more *B. emmerichi* and also what I was fairly sure was a new *Helophorus*. A rather bulky member of the *H. glacialis-nivalis* group, I thought. Sadly female, and further work eventually resulted in another female. Still, I thought, almost certainly sufficiently distinctive to be described, especially in this age of stacking photography. Well, this turns out to be a very strange beetle – probably *Helophorus* s. str., though with short blackish-metallic almost symmetrical apical segments to the maxillary palpi. The elytral flanks and epipleurs are wrong for *Cyphelophorus*. Ah, had I but known! We could still be up there, in the rain, looking for a male! Anyway, back to the car and on, past the airport, to a small lake I had seen on Google Earth. More rain, but this time Fenglong found an interesting *Helophorus* – a bit smaller than mine, so possibly a male? No, female again – but when eventually checked under the microscope – *H. tuberculatus* Gyllenhal! New for China, but already

known from Bhutan. Small *Helophorus* were *H. imaensis* d'Orchymont and *H. montanus* d'Orchymont, and a few larger ones were *H. jaechi* Angus. Then time to go back to the hotel. I knew we had done well that day – but actually we did fantastically well! Unfortunately, it rained most of the night so poor Kai was unable to do any light-trapping.

Next on the agenda was a trip along the Lhasa road, over the Zheduo Pass, past the airport, to Xinduqiao. This is a very scenic route with many young people, especially students, taking cycling holidays along it. A down side is that if you stopped to collect you would be accosted by Tibetans (the “camel-sheep” of my 2013 trip!) wanting money and threatening to be awkward. Fenglong said that usually if only Chinese were present there wasn't a problem, but sight of a foreigner set their inner till-bells ringing! Hey-ho! However, we found a nice tree-shaded parking area with plenty rather muddy pools, out of sight of prying camel-sheep. More *B. emmerichi* and quite a nice selection of beetles including increasing numbers of *H. jaechi*. Then on to Xinduqiao where we found a nice hotel and lunch. Our driver reckoned that the roadside camel-sheep would go home at about five o'clock and suggested we went out after that. And so we did, and enjoyed some of the most pleasant collecting of the trip in flooded cut-off minor meanders of the river. Two *Agabus* of the *A. congener* group, masses of mainly recently emerged *H. jaechi*, and some nice *Hydrobius* which might just be *H. pui* Jia, which Fenglong had described from material taken near Yushu in the southern part of the Qinghai area of the Tibetan Plateau. Dinner in the hotel that night was livened up by quite a party being enjoyed by a group of young people. Singing local songs – very good, much better than the canned pop from a speaker outside. I thought they were students and when I said this to Fenglong the next morning he said they were “Zang people” (Tibetans). I thought it was great that they were getting on with life and having a good time in this Chinese (Han) run hotel, not loitering by roads waiting to fleece foreigners – and sometimes Chinese as well! And this time it hadn't rained in the night so Kai was able to run his light-trap. He didn't get much, he said, but there were two really good things!



4. Muddy pools by the car park

5. Evening collecting by sacred spring

The next day we returned to Kangding. Fenglong had hoped to arrange laboratory facilities in a local hospital, but his contact was away at the time, so this fell through. However, our driver had arranged, through a friend who was caretaker at a secondary school, that we could use their microscopes. So, back we went – except that the main road was blocked and we had to take some truly bone-shaking back roads. This proved very interesting. One of the things I had noticed were very nice-looking new buildings, some still under

construction, attractively faced with local stone. It seemed possible that these were to promote tourism, but on the back roads there were similar buildings, so they were very much for the local people. In fact, as I later learned, these buildings are put up by the Chinese government as housing for the local people, following an earthquake two years ago. At the school I was, alas, unable to work with the binocular dissecting microscope. The objective was fairly low-power but the eyepieces were X 25. Apologetically, I had to admit defeat. But many thanks for trying to help.



6. Back road home – Tibetan inscription on the hillside and attractive modern building



7. High ground again – the team – from the left Kai Cheng, Fenglong, me, Zhi-qiang Li



8. Another *Boreonectes emmerichi* pool

9. *Meconopsis cf horridula*10. *Meconopsis punicea*

The following day we embarked on the last collecting foray of this stage of the trip, to Moxi town, east of Kangding. The road led once more into the hills and we stopped for some more collecting and photographing flowers, including beautiful blue poppies of the *Meconopsis horridula* group. Then disaster! The road was completely blocked by a recent landslide which, we later learned, would take several days to clear. So, back to Kangding and then the long way round. We got to Moxi late afternoon and eventually found a hotel conveniently located for Kai's light-trapping. Beetles in a stream included *Agabus brandti* Harold, a coarsely sculptured member of the *A. biguttatus* group, and new to the London collections! Sadly, although it did not rain in the night, light-trapping results were disappointing. A pity, as this area has a very good reputation.

So, back to Kangding where at the airport I had some difficulty convincing the baggage security that the brass connecting pieces on my net-handle were not batteries, but once this was accomplished (with absolutely no trace of unpleasantness) we had a quick breakfast and flew back to Chengdu. Here we said goodbye to Zhi-qiang who now went off on his own travels (he studies termites) and embarked on the next phase of our collecting. Fenglong had been asked by the director of the Anzihe Panda Reserve (more or less adjacent to the famous Wolong) to survey the water beetles there. The original plan was for me to accompany him and we would stay at the reserve headquarters. Then it transpired that, as a foreigner not already registered with the local police, I would not be allowed to stay there. So, we would still sample the river, but would find accommodation in a local hotel (where they dealt with the registration). This we did, and the beetles taken included a striking demonstration of what random sampling can show. Early on in the collecting, Fenglong found a nice series of a black *Platambus*. I had not found it at that stage, so he showed where they were and also helped me get my sample. Some time after I returned to London he emailed saying he thought he had three species but all his material was female. Might I have any males? I checked my material (as yet unmounted) and found that all my 11 specimens were male! But all the same species, *P. stygius* Régimbart. We found a pleasant little hotel where the toilet in my en-suite room was of the "footprint" variety! I remarked to Fenglong that the last time I had used one of these was in a Spanish campsite in 1974! This obviously caused considerable mirth among the Chinese members of the party – for the next day, when the same thing happened again, the driver laughingly flexed himself in a very meaningful way!

After this we returned to Chengdu and said goodbye to Kai who took the train to Chongqing and the next part of his travels. For us the next part of the trip was to be joined by Fenglong's wife and son for a holiday trip to northern Sichuan including the fabulously

beautiful Jiu Zhai Gou National Park. Truly beautiful scenery with bluish waters (lakes and rivers) on limestone tufa. And we had good weather! And then the Huang Long (Yellow Dragon) reserve, again on limestone tufa and with wonderful wet Tibetan forest with lichens festooning the trees, and more fabulous flowers including the red *Meconopsis punicea*. And this time it rained almost continuously! On the way back we stopped at a series of roadside pools and got, among other things, a nice series of *Hydrobius*.

Back to Chengdu, pausing to visit the memorial to the terrible earthquake of 2008. Fenglong's wife studies the wave mechanics of earthquakes, so it was of added interest to her. We had been driving through the region devastated by that earthquake, but such is the efficiency of Chinese reconstruction that mostly there was no trace of it. The memorial is based on the shattered remains of the secondary school. Amazingly, out of about 1500 pupils and staff (from memory) only about 130 lost their lives – already far too many.



11. Collecting site at Anzihe



12. Wet Tibetan forest with lichens



13. Huang Long in the rain



14. Earthquake memorial

Fenglong's wife was attending an earthquake conference in Chengdu, and his son stayed there with her, so Fenglong and I now flew back to Guangzhou. The last week produced some successful chromosome preparations, especially of the *Hydrobius* collected on the way back from Huang Long, and then I went home! All that remains is to thank all my Chinese friends, and especially Fenglong, for a truly wonderful trip. As Jason Maté said "the trip of a lifetime" – now twice!

Received February 2017

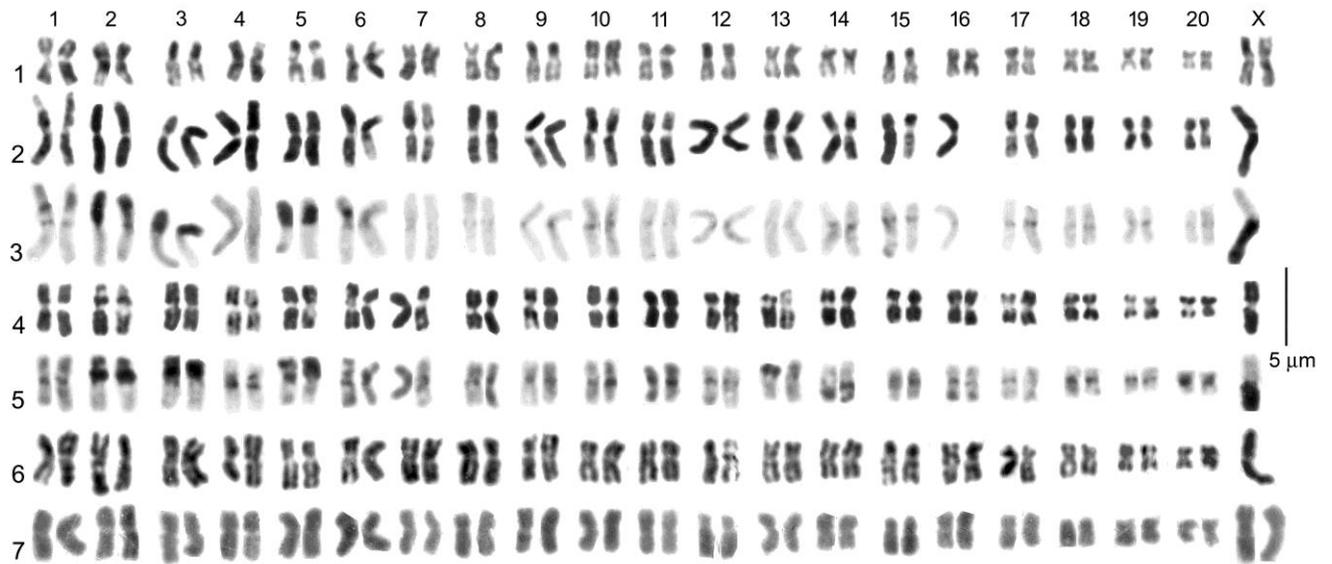
**CHROMOSOMES AND AEDEAGI OF *HYDROPORUS MELANARIUS* STURM, 1835 AND *H. NECOPINATUS* FERY, 1999****Robert Angus**

In a paper about to be published in *PeerJ*, David Bilton, Lucy Turner and Garth Foster show evidence of introgression between English *H. melanarius* and *H. necopinatus roni* Fery. They also note that some southern English *H. melanarius* have aedeagi approaching the more elongate condition typical of *H. necopinatus*. This last observation appears to stem, in part at least, from conversations with me in which I suggested that material from Matley Bog (New Forest, South Hampshire) had more elongate aedeagi than specimens from Chobham Common, Surrey. This has prompted me to give pictures of these aedeagi and also of chromosomes of the two species, first shown as a PowerPoint presentation at the Balfour-Browne Club meeting in Sweden in 2011.

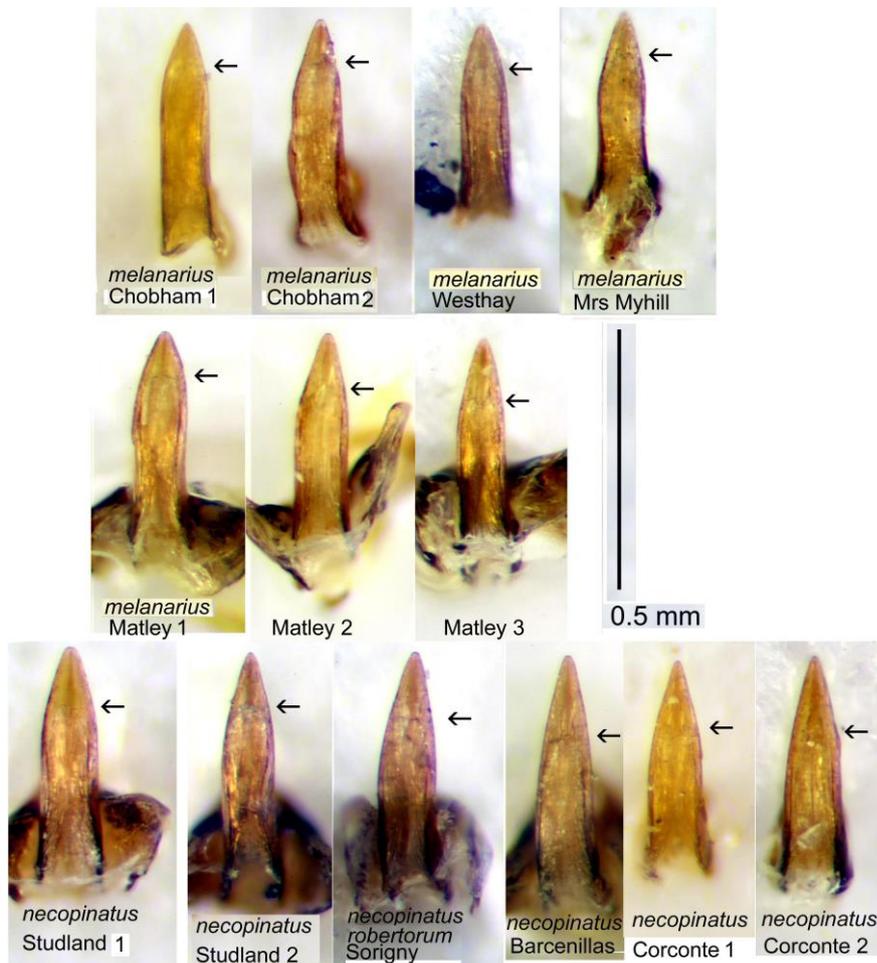
Mitotic chromosomes of the two species, arranged as karyotypes, are shown in Figure 1. The plain and C-banded preparations of the two species (**Figure 1**, 2 – 5) allow detailed comparison. Both species have complements of  $2n = 40 + X0$  (♂),  $XX$  (♀), that is 20 pairs of autosomes plus the sex chromosomes. The sequence of chromosome lengths and centromere positions appears the same in both species, as does the distribution of major heterochromatic regions (C-bands) on chromosome pairs 1, 2, 3, 5, 6 and the X chromosomes. The remaining autosomes have small centromeric C-bands which appear rather stronger in *H. necopinatus* than in *H. melanarius*, though this may be an experimental effect in these two preparations. The additional unbanded preparations of the two species (**Figure 1**, 1, 6 & 7) agree in their general chromosome arrangement with the C-banded ones, and also show an apparent Nucleolus Organiser Region (NOR) in the short arm of pair 15. The chromosomes of these two species appear identical in their layout and would not appear to present any hindrance to their hybridising.

Aedeagi of the two species are shown in **Figure 2**. The main difference between the two is that in *H. melanarius* the apical section, beyond the gonopore at the apex of the soft tissue on the ventral face of the aedeagus, is nearer to the aedeagal apex than in *H. necopinatus*, which has the apical section of the aedeagus more drawn out. The position of the gonopore is indicated by arrows in **Figure 2**.

The aedeagal apex of *H. melanarius* (top row) shows some variation in its shape – appearing shorter and blunter in Chobham 1 and Westhay than in Chobham 2 and Mrs Myhill's Marsh. In *H. necopinatus* (bottom row) the apical section is consistently more drawn out in Spanish material (*necopinatus necopinatus*) and the French specimen (*necopinatus robertorum* Fery) but is more variable in Dorset *necopinatus roni*. Thus Studland 1 has the apical section more drawn out than Studland 2. In all the material the gonopore is further from the apex than in *H. melanarius*. Aedeagi of three specimens from Matley Bog are shown in the middle row. Matley 1 has the shorter blunter apical section typical of *H. melanarius*, with the gonopore nearer the apex. However, Matley 2 and 3 have the apical section more drawn out and the gonopore further from the apex, more as in Studland *necopinatus roni*. These three specimens were taken at the same time and in the same part of the Common. So, it appears that this southern English material is not simply intermediate between *H. melanarius* and *necopinatus*, but shows a mixture of appearances in the same population. This would be consistent with genetic mixing, also suggesting that the aedeagal shape difference between the species is controlled by only a few genes.



**Figure 1** Mitotic chromosomes of *H. melanarius* (1 – 3) and *H. necopinatus* (4 – 7). 1, midgut, female, Sweden, unbanded; 2, 3, testis, male, Mrs Myhill’s Marsh, Norfolk, 2 plain, 3 the same nucleus C-banded; 4,5, *necopinatus necopinatus*, testis, male, Balneario de Corconte, Provincia de Burgos, Spain, 4 plain, 5 the same nucleus C-banded; 6, 7, *necopinatus roni*, Studland Heath, Dorset, plain, 6 male, 7 female.



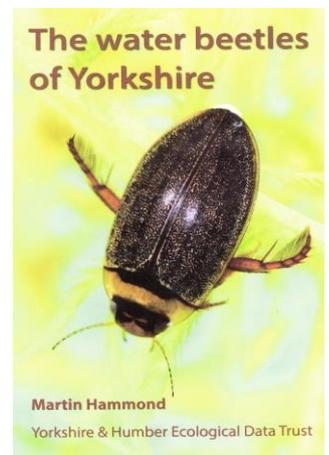
Discerning eyes will notice that some aedeagi are wider than others and that not all appear totally horizontal laterally. The width differences are genuine and the apparent slope of some specimens reflects a certain twisting in the aedeagi. These pictures were taken in the Sackler Bioimaging lab. of the Natural History Museum, London, with a Leica M125 stereomicroscope and Canon EOS 55D camera, and stacked using Helicon Focus software. This magnification stretches in equipment to the limit of its capacity but is much quicker and simpler to use than scanning electron microscopy. It also allows critical examination of the material as it is being photographed, allowing me to say that the apices of the aedeagi are not distorted by wrong orientation.

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## YORKSHIRE WATER BEETLES

📖 HAMMOND M 2017. *The water beetles of Yorkshire*. Yorkshire & Humber Ecological Data Trust. Available from North & East Yorkshire Ecological Data Centre (10a Minster Gates, York YO1 7HL, England, UK) at £6. £2.95 postage in UK. [info@neyedc.co.uk](mailto:info@neyedc.co.uk) The historic County of Yorkshire takes in a large chunk of northern England, just under half the size of Belgium. It's an important area for water beetles, at least in a British context, supporting around three-quarters of the British list of fully aquatic taxa. This diversity owes much to Yorkshire's location, straddling the divide between the warmer lowlands of eastern England and the cooler and wetter north and west. Thus one can find boreal specialities like *Agabus arcticus* (Paykull) and *Boreonectes multilineatus* (Falkenström) in the high tarns of the Yorkshire Dales along with warmth-loving species reaching the northern edge of their range in the lowlands such as *Scarodytes halensis* (Fab.), *Graptodytes bilineatus* (Sturm), *Hygrotus parallelogrammus* (Ahrens), *Helophorus longitarsis* Wollaston and *Enochrus halophilus* (Bedel). Riverine and fen species are well-represented, the Vale of York marking the northern end of the historic lowland fenland zone. The results of intensive survey work during the period 2000-2016 have now been presented as an atlas including tetrad (2 x 2km square) maps for 210 species. Of these, *Agabus striolatus* (Gyllenhal), *Helophorus longitarsis*, *Hydrochus crenatus* (Fab.), *Ochthebius viridis* Peyron and *Oulimnius major* (Rey) were newly recorded for the county. Species re-discovered after long absences included *Laccornis oblongus* (Stephens), *Hydroporus scalesianus* Stephens, *Hydraena minutissima* Stephens, *H. palustris* Erichson, *H. pygmaea* Waterhouse, *Pomatinus substriatus* (Müller), *Dryops auriculatus* (Fourcroy) and *D. griseus* (Erichson). Forty-eight Yorkshire water beetles are categorised as Nationally Scarce, 17 as Near Threatened and eight as Vulnerable in Great Britain. A further 14 species recorded during the 19<sup>th</sup> and 20<sup>th</sup> Centuries are reviewed along with subfossil records.



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