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Cover photograph: *Protozantaena gigantea* Bilton & Mlambo (right) is portrayed as a "giant among dwarfs". But the dwarfs get up to 1.5 mm and *gigantea* towers at 2! *P. birdi* Bilton (left) is here for comparison. See page 9.

Photograph: David Bilton

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

THE UNDERSIDE MATTERS: ELYTRAL CHARACTERS OF SOME WATER BEETLES

Alexander A Prokin, Alexey S Sazhnev

The first author, who recently dissected hundreds of *Ilybius* in order to solve the problem of differences between *Ilybius angustior* (Gyllenhal) and *Ilybius picipes* (Kirby), paid particular attention to well developed thick hair brushes on the underside of the elytral apex. We then examined the apices of several species of *Ilybius* from different groups sensu Nilsson (2000), and our "reinvention of the wheel" grew like a snowball as we looked at more and more beetles. Having realised that the "underside universe" is too large, we halted our investigation at this stage and decided to discuss the results obtained, with the hope of future expansion. The photographs were made by the second author using a Leica MC170 HD digital camera mounted on a Leica M165C stereomicroscope in Papanin Institute for Biology of Inland Waters Russian Academy of Sciences, Borok. The pictures were processed in Helicon Focus 7.7.4 and Sketchbook.

As a result, the Agabinae species studied are characterised by a longitudinal "velvet" protrusion or fold with microtrichia along the suture (Fig. 1: *as*), was interpreted as apico-sutural binding patch (Hammond 1979: Fig. 82). This flange was initially proposed by Marcu (1936) as a plectrum operating with the toothed "pars stridens" of the hind wing for the stridulation of a *Rhantus*. Then Peter Hammond (1979) demonstrated that such wing patches are wing-binding mechanisms, serving to secure the wings under the elytra, as was accepted by Aiken (1985). These structures in Polyphaga are sometimes represented by an oval granulated area on the penultimate row of punctures at the middle of the elytron (Fig. 7).

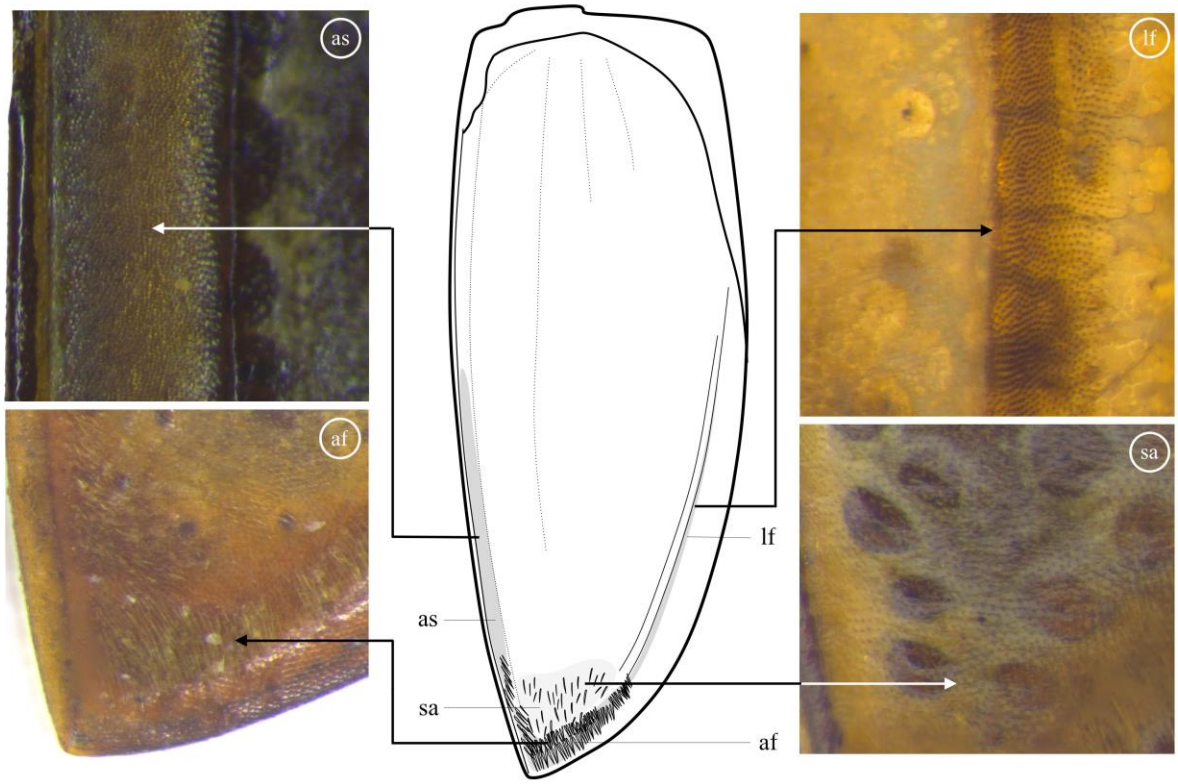

Fig. 1 General pattern of underside structures of the genus *Ilybius*: *as* – apico-sutural binding patch, *lf* – locking flange, *af* – apical flange, *sa* – setiferous area

The second protrusion with a microtrichial field (Fig. 1: *lf*), known as the "locking flange" (Crowson 1981) or "lateral furrow locking with abdominal pleura" (Hammond 1979), runs from the middle of the elytra to the level of the last ventrite base along the outer margin, inwards from the outer row of punctures. This structure is the carinate underside of elytral interval 9. Together with the epipleuron it forms a narrow groove that receives and then locks onto the lateral edges of one to a few abdominal sternites (Fedorenko 2009). The locking flange is known in Georissidae and Hydrochidae (Hansen 1991), Clamboidea (= Eucinetoidea), some Elmidae (Crowson 1981), Elateridae (Johnson 2022), Coccinellidae, Mordellidae, Curculionidae, Byrrhidae, Dryopidae, Histeridae, Hydrophilidae, Buprestidae, Agrytidae, Trachypachidae, Amphizoidae, Hygrobiidae, Carabidae and Rhysodidae (Fedorenko 2009), and has also been described as "the posterior microtrichial field of the elytra" by Gorb (1998) in three species of *Tribolium* (Tenebrionidae). This structure varies strongly in length: it can be either short and pocket-like, situated in the middle of the elytron (middle carina) or long, extended to the elytral apex (Fedorenko 2009).

The third, the apical flange, covered with thick brushes of hair, occupies the apex of the elytron (Fig. 1: *af*). In some species, the area above this flange is covered with long hairs – the setiferous area (Fig. 1: *sa*).

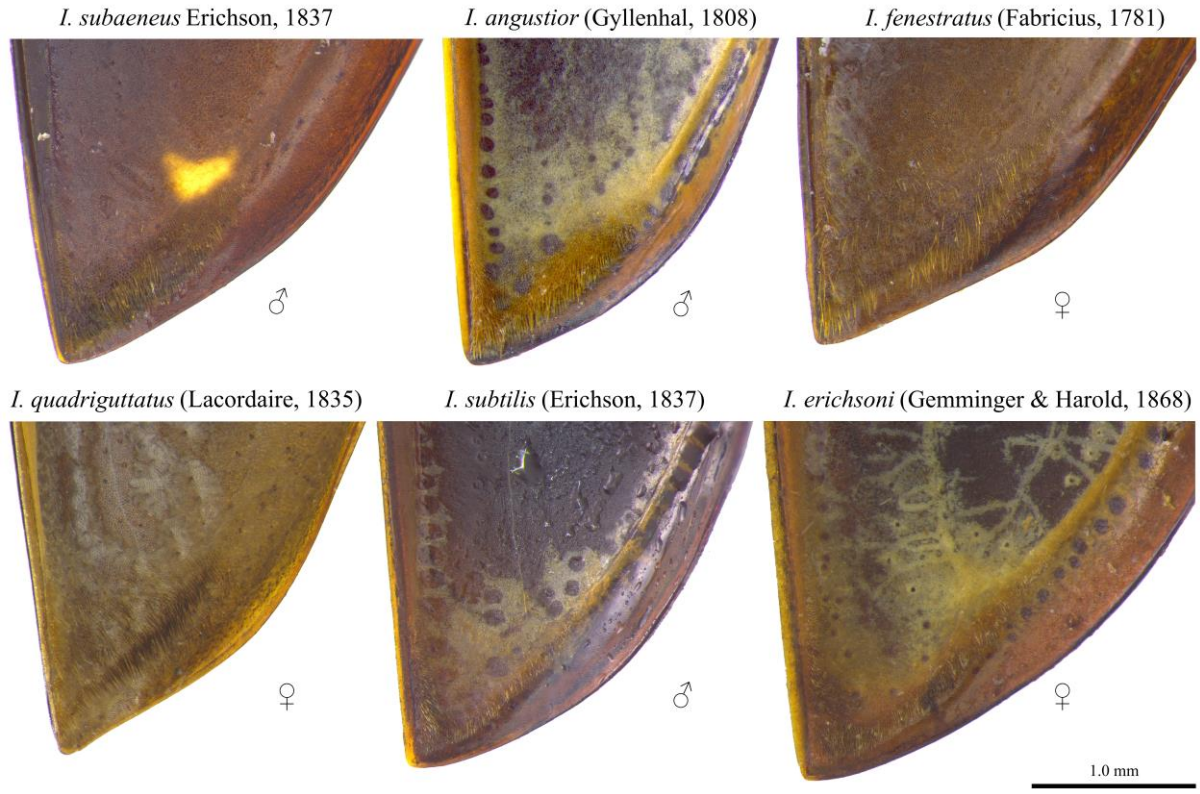

Fig. 2 Apices of the elytra of *Ilybius subaeneus*-group and *erichsoni*-group

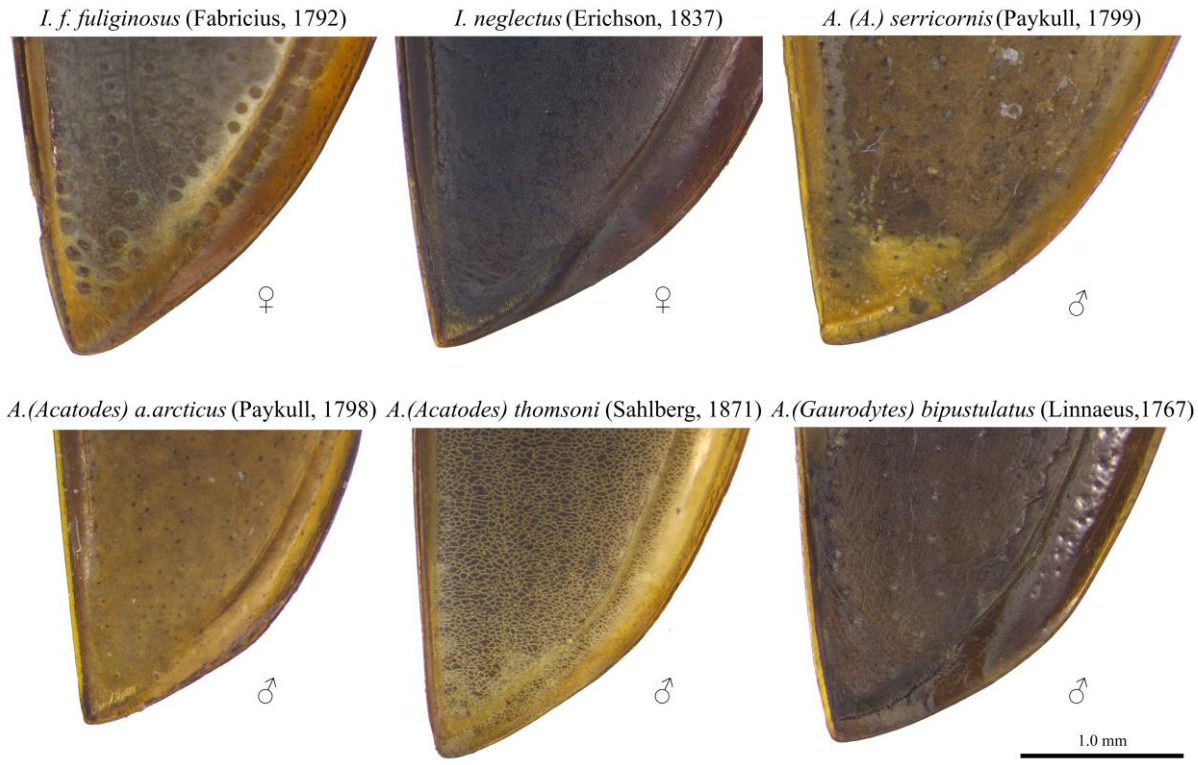

Fig. 3 Apices of the elytra of some *Ilybius* and *Agabus*

A smooth area outside the locking flange in Agabinae studied is likely to be analogous to the pseudoepipleura of Polyphaga. The area outside the apical flange is usually covered with cellular microsculpture. Species of the *Ilybius erichsoni*-group and *I. neglectus* (Erichson) from the *chalconatus*-group have a narrower apical flange, with hairs shorter than those in the *subaeneus*-group (Figs 2–3). The setiferous area is well developed in *Ilybius fenestratus* (Fab.) and *I. quadriguttatus* (Lacordaire), as well as in *Platambus maculatus* (L.), with shorter hairs (Fig. 4).

It is well known that species of the *subaeneus*-group, or *Ilybius* in the old sense, are characterised by unequal metatarsal claws and endophytic oviposition with a knife-like ovipositor (Miller & Bergsten 2016), and is well supported as a separate clade by the molecular data (Ribera *et al.* 2004). The molecular data also supported the *P. maculatus* clade as sister to *Ilybius*, but to neither of the *Platambus* studied (Ribera *et al*. 2004). The discussed characters of the elytral underside also distinguish the *subaeneus*-group from its relatives and confirm the affinity of *P. maculatus* to *Ilybius*.

The studied species of *Agabus* differ from those of *Ilybius* by a much less developed apical flange with short hairs and no setiferous area (Fig. 3). The structures under discussion are in *Hydroporus palustris* (Linn.) generally similar to those in Agabinae, with microtrichiae in *lf* (Fig. 4), but in *Nectoporus sanmarkii* (Sahlberg) with poorly developed *lf* without microtrichiae (Fig. 5), possibly due to the respiration through holes in elytra, known for this species and some other running water dytiscids (Madsen 2008). Some other Hydroporinae, such as *Hyphydrus ovatus* (Linn.), *Hygrotus versicolor* (Schaller), and *H. impressopunctatus* (Schaller), all have an almost smooth *lf* protruded as a rib with a remarkable subapical lobe (Fedorenko 2009, Fig. 6), or "extension of a ligula-like shape of the carina on ventral surface of elytra" (Fery & Ribera 2018). Thus, characters of elytral underside appear to be useful in systematics of Dytiscidae, as has already been shown for some other groups of Coleoptera (Hammond 1979; Samuelson 1994, 1996).

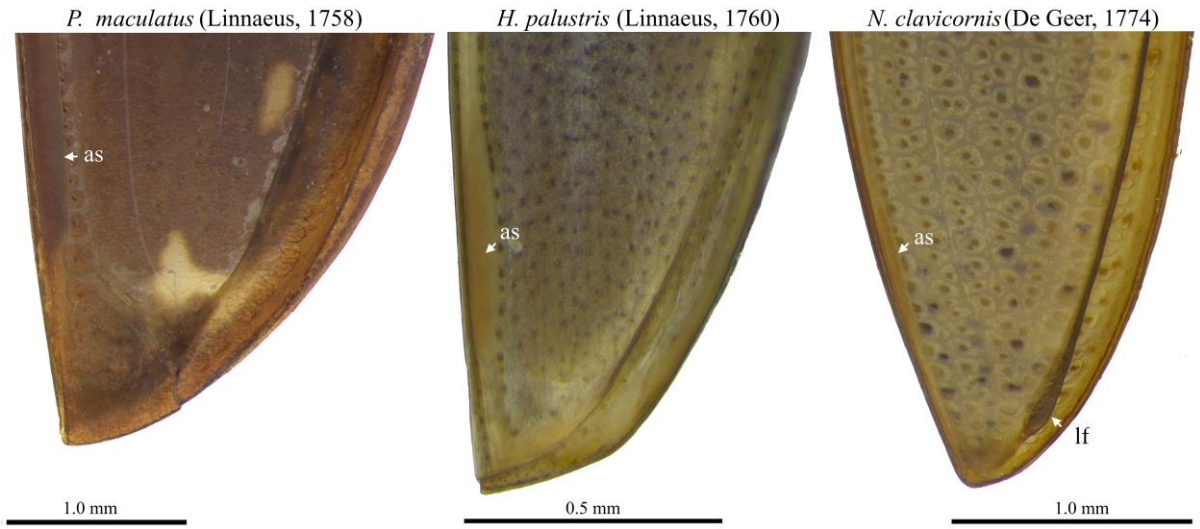

Fig. 4 Apices of the elytra of *Platambus*, *Hydroporus* and *Noterus*

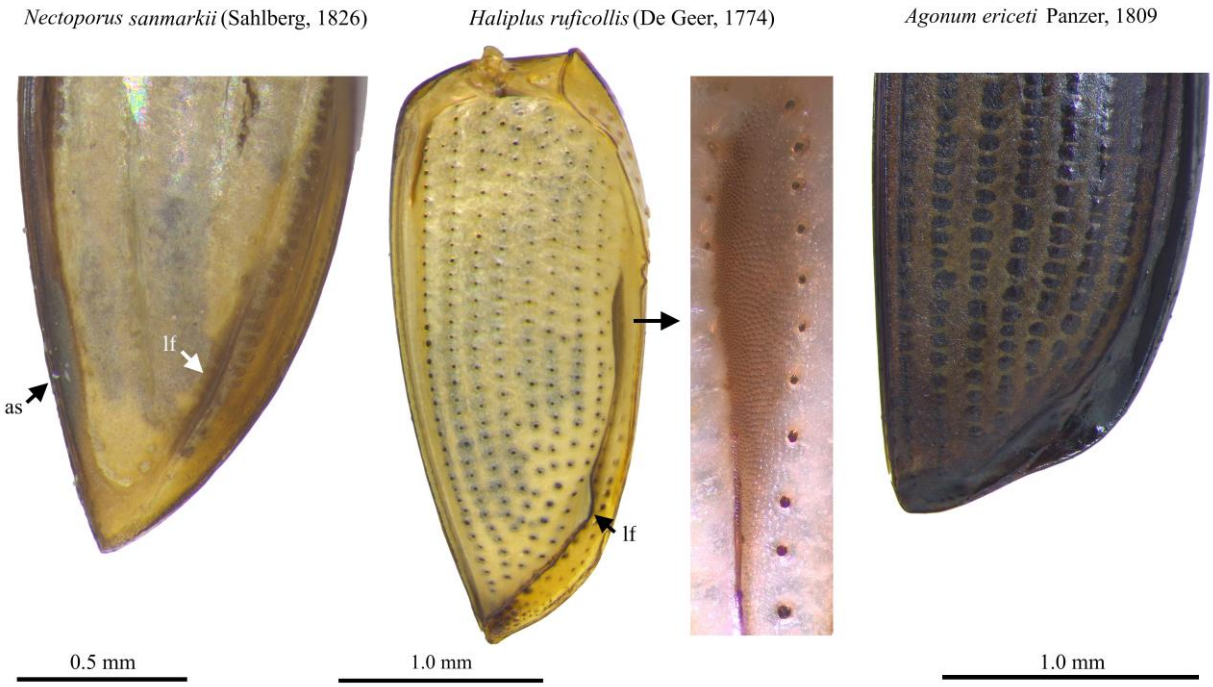

Fig. 5 Elytra of *Nectoporus, Haliplus* and *Agonum*

The example of a carabid, *Agonum ericeti* Panzer), does not have an apico-sutural binding patch (Fig. 5). In *Haliplus ruficollis* (De Geer) (Haliplidae) it is represented by a narrow fold (Fig. 5), and in *Gyrinus natator* Linn. (Gyrinidae) it is already slightly granulated (Fig. 7). According to Hammond (1979), the absence of sub-cubital binding patches of hind wings, which co-opted with *as*, in Carabidae, Haliplidae, Hygrobiidae, Gyrinidae and some Dytiscidae and Noteridae, is always secondary and in close association with smaller size.

The Gyrinidae with their highly movable telescoped abdomen appear to have almost lost the locking flange for secondary reasons (Fedorenko 2009). The base of the locking flange is expanded in *Haliplus ruficollis* and looks like a stridulatory organ (plectrum) (Fig. 5), connecting to the costal vein of the hind wing, but unmodified, without a microtrichial file. The elytral underside in *Noterus clavicornis* (De Geer)

resembles that in not only *Canthydrus luctuosus* (Aubé) from the same family Noteridae, depicted by Hammond (1979), but also in *Hyphydrus* and *Hygrotus* in that the locking flange is protruding as a subapical lobe. All Hydroporinae studied, as well as *Haliplus* and *Noterus* have all three flanges. Thus, the structures studied may not only have systematic and phylogenetic significance, but also correspond to the shape of the body, in this case with the functional type 2: small to medium-sized species with spherical body and long femora, considered being adapted to manoeuvring in stagnant waters (Ribera & Nilsson 1995; Ribera *et al*. 1997).

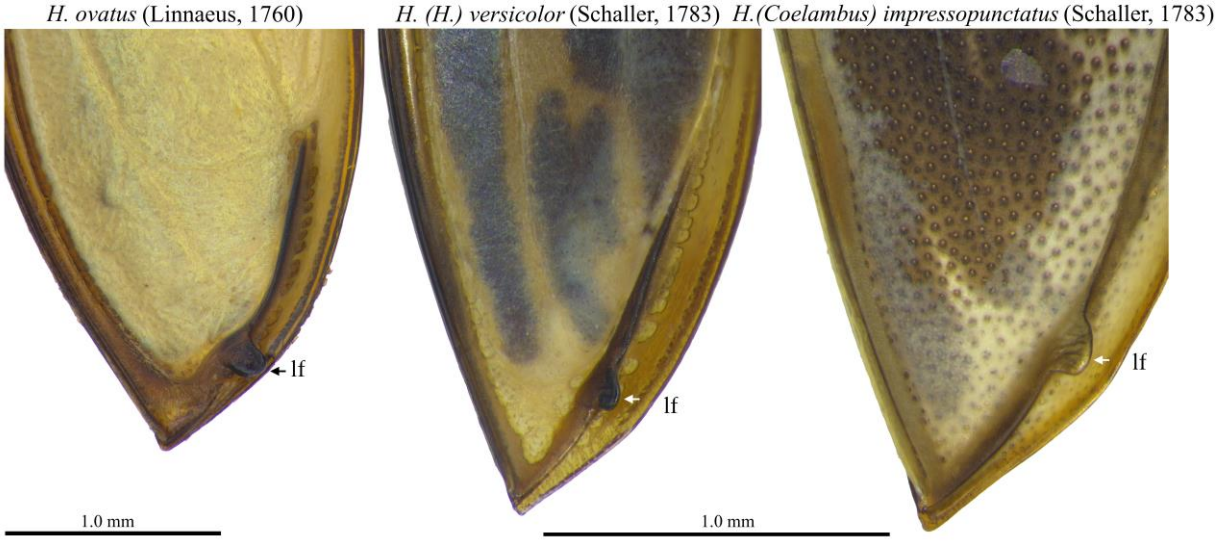

Fig. 6 Apex of the elytra of *Hyphydrus* and *Hygrotus*

Sexual dimorphism of the flanges and pubescence pattern was not detected in our brief study. The apico-sutural binding patch is a friction patch connecting with a medial fleck on the hind wing (Hammond 1979; Lawrence & Ślipiński 2013). The lateral flange, and possibly including flanges in small-sized Adephaga, is part of the closing mechanism for the subelytral cavity. The apical flange and setiferous area are most possibly used in the air passage to the subelytral space, when the beetle exposes the abdominal apex to the water surface. It is also possible that the apical flange, recorded for Agabinae, somehow corresponds with their functional type, group 1 according to Ribera & Nilsson (1995). The thin edges of the elytra of this group increase resistance, but also increase horizontal stability, allowing them to brake and to turn by shifts in their angle of attack (Nachtigall 1974). It is unlikely that the apical flange is related with pygidial defensive glands sensu Dettner (1985).

Previously, the evolutionary scenario for the locking flange in Adephaga was hypothesised by Fedorenko (2009):- 1) the ground plan is the interval 9 not or barely thickened throughout its length and set apart from the epipleural ridge (*Trachypachus*, Amphizoidae, Hygrobiidae); 2) most other "Hydradephaga" and carabids possess interval 9 modified into a more or less sharp and high carina; 3) the carina becomes differentiated, the caudal part growing to be superior, thereby transforming into a small, rounded, subapical lobe directed outwards; as the lobe progresses, the basal- and apical-most sections of the former carina tend to degenerate.

The fossil elytra with locking flange known since the Permian (Rohdendorf 1961; Ponomarenko 1969, 2004, 2015 and many others are usually described as in the Schizocoleidae Rohdendorf on the base of term “schiza” designating a separate longitudinal “short furrow” at the lateral edge of the elytra (Rohdendorf 1961). This

"schiza" is characteristic of †Phoroschizidae (=†Schizophoridae), some †Rhombocoleidae and †Triaplidae, families with controversial systematic positions. The locking flange of the fossil elytra (schiza) may be associated with the aquatic or semi-aquatic habitats of its owners, but it is not a good indicator of these types of habitats (Kirejtshuk & Prokin 2018; Goczał & Beutel 2023) because it is known for representatives of many terrestrial families (see above).

It is generally accepted that the evolutionary success of the order Coleoptera is determined by the main novelty – the formation of the elytra and the tightly sealed subelytral space, creating a separate chamber for air storage. It has been suggested (Gorb 2001) that there are three main areas where elytra are attached to the body: (1) medial margins of both left and right elytra; (2) lateral margins of elytra (*lf*) and pleural area of the pterothorax and anterior abdominal sternites; (3) anteromedial area of elytra, and corresponding structures of tergites of mesothorax and scutellum. The air-filled subelytral cavity provides buoyancy of water beetles, preventing them

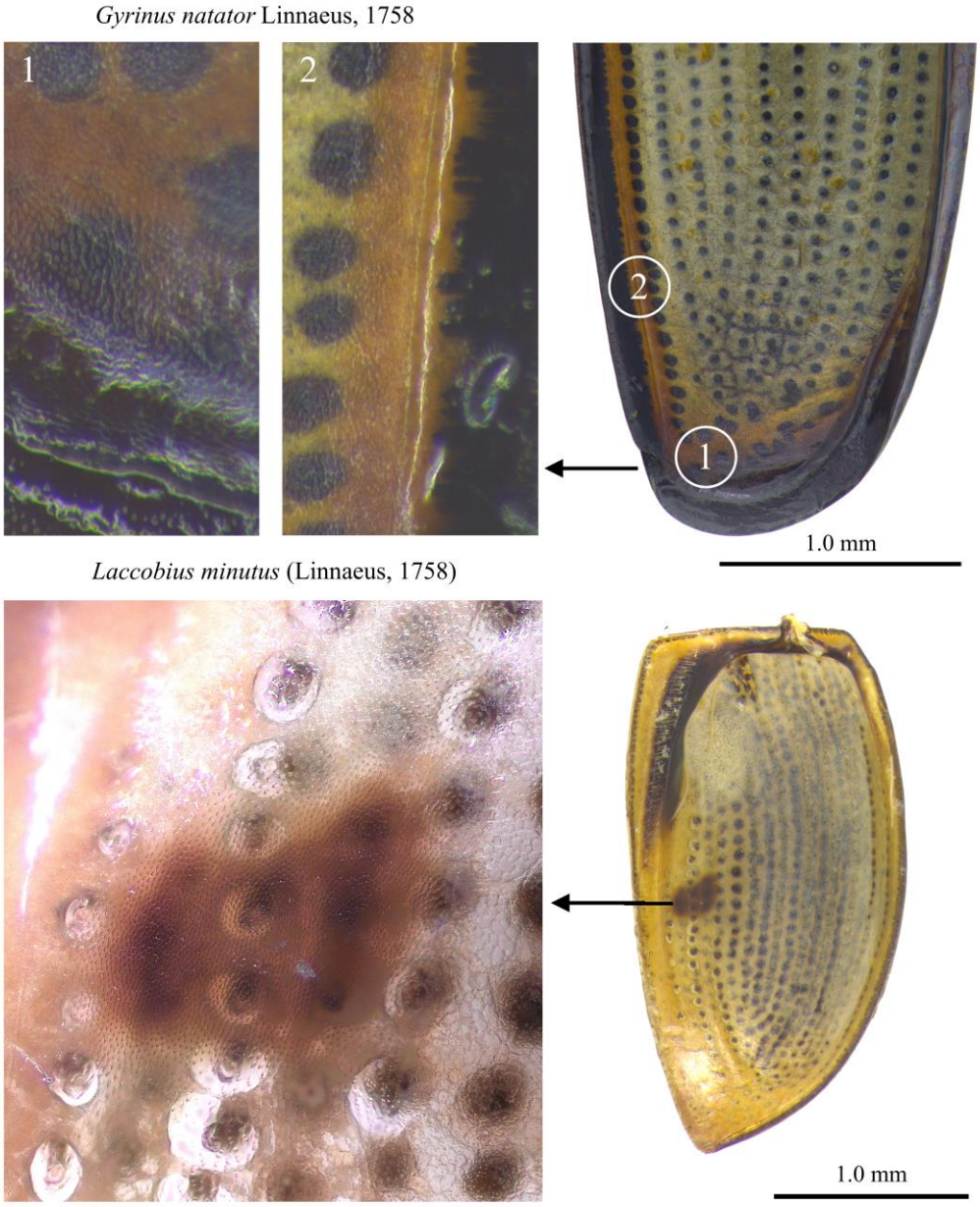

Fig. 7 Elytra of *Gyrinus* and *Laccobius*

from sinking to the bottom, and is also essential for manoeuvrability in gyrinids (Goczał & Beutel 2023). It is therefore interesting to compare evolutionary success in terms of species and other taxa richness of the main beetle groups with their elytral attachment systems and other structures of their "underside universe". It is worth investigating the structure of the elytral underside in water beetles using SEM, studying the water-repellency of the hairs, observing the way in which air enters, etc., as well as studying secondary terrestrial and species living in wet substrates, madicolous habitats rather than in the water column.

The authors are grateful to D N Fedorenko, Moscow, for constructive comments.

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Received March 2024

***NARTUS GRAPII* INTERCEPTED IN FLIGHT TRAP**

Arno van Berge Henegouwen writes on how a Malaise Trap was set up in a nature garden near to his house in Zoetermeer, and from which 469 invertebrate species were identified. The few water beetles included *Nartus grapii*, a species known to be expanding its range but with few direct flight observations. The image comes from the local newspaper in which the activity was reported.

van BERGE HENEGOUWEN A 2024. Honderden kleine beestjes geteld tijdens experiment. *Streekblad Zoetermeer*, 4 January 2024 p. 21.

EIGHTH *PROTOZANTAENA* AND THE LARGEST

A residual pool in a seasonal watercourse in the Northern Cape produced this unusually large eighth known member of *Protozantaena*, a hydraenid genus of Madagascar and southern Africa.

BILTON D T & MLAMBO M C 2024. A distinctive new species of *Protozantaena* Perkins, 1997 from lowland Namaqualand, South Africa (Coleoptera, Hydraenidae). *Zootaxa* **5424** 383-388.

SCIRTIDAE IN ITALY

Sixteen species are reported from the Brescia area of Lombardy. *Odeles gredleri* (Kiesenwetter) and *Scirtes hemisphaericus* (L.) are new for the province of Bergamo. Other records include *S. orbicularis* (Panzer) new for Lombardy. The image supplied by Mario Toledo is of *Elodes elongata/elongatus* Tournier, new for Brescia.

TOLEDO M, GROTTOLO M O & PEDERSOLI D 2023. Nuovi dati biologici e geonemici sulla famiglia Scirtidae (Coleoptera: Scirtoidea) in provincia di Brescia e in alcune zone limitrofe (Lombardia, Italia) [New biological and geonemic data on the family Scirtidae (Coleoptera: Scirtoidea) in the province of Brescia and in some neighbouring areas (Lombardy, Italy)]. *Bollettino dell Societá entomologica italiana* **155** 113-129.

MICHAEL DARBY 1944-2024

The death was reported in January 2024 of Dr Michael Darby. When he retired in 1990 he was Deputy Director of the Victoria & Albert Museum in London but he moved in a sense "next door" to the Natural History Museum to pursue his interest in Ptiliidae. As such he contributed little on water beetles his most important work being the biographies of British coleopterists and recording effort in Wiltshire. The image left was found on the web.

DARBY M 2009. *Wiltshire Beetles. History, Status, Distribution and Use in Site Assessment.* Salisbury: Malthouse Books/The Wiltshire Natural History Publications Trust.

DARBY M 2022. *British Coleopterists. Biographies, Collections, Sources.* Salisbury: Malthouse Books.

***DYTISCUS CIRCUMCINCTUS* ON DIETS**

This is a series of observations on raising *circumcinctus*, mostly substantiating earlier ones. Cannibalism among larvae was observed, even with a first instar successfully attacking a second. There was no significant difference between feeding exclusively on *Asellus* and feeding on a mixture of food items. Despite many observations it is still not possible to explain why this particular species is rare - but thanks for trying!

HENDRIKS P & VERDONSCHOT P 2024. About the biology of the rare diving beetle *Dytiscus circumcinctus*, a laboratory approach (Coleoptera: Dytiscidae). *Entomologische Berichten* **84** 50-57.

WESTERN GHATS INVENTORY

Sixty-nine species of water beetle were found in surveys in 2013-2018. Keys are supported by habitus images as well as images of the male genitalia of 59 species, plus drawings and scanning electron microscopy. There are some beautiful diving beetles here, also hydrophilids and whirligigs including five species of *Patrus*, here for example *P. discifer* (Walker). The enthusiasm shines through!

SHETH S D, PADHYE A D & GHATE H V 2024. Faunal inventory and illustrated taxonomic keys to aquatic Coleoptera (Arthropoda: Insecta) of the northern Western Ghats of Maharashtra, India. *Journal of Threatened Taxa* **16** 24854-24880.

BALKAN RIVER RECORDS

The River Neretva is the largest karst river in the Dinaric Alps with its source at 1,200 metres above sea level at Držirep. Fifty-five species were identified from about a thousand adults caught in a week in 2022. These included *Cercyon ustulatus* Preyssler, *Georissus costatus* Castelnau, *Hydraena vedrasi* d'Orchymont, *Limnebius paganettii* (Ganglbauer), *Dryops lutulentus* (Erichson), and *Limnichus incanus* Kiesenwetter. Eighteen species of Hydraenidae were recorded overall, seven endemic to the Balkans. *Stenelmis puberula* Reitter (the beetle and its habitat illustrated here courtesy of Michaela Brojer) was a special find, albeit a species already known from Bosnia and Herzegovina.

BROJER M 2023. Contribution to the knowledge of water beetles sensu lato (Coleoptera) from the upper course of the Neretva River in Bosnia and Herzegovina. *Natura Sloveniae* **25** 43-60.

MADEIRAN SPHAERIDINAE

The newly recorded species, all from cow dung, are *Cercyon obsoletus* (Gyllenhal), *Cryptopleurum minutum* (Fab.) and *Sphaeridium scarabaeoides* (L.).

GREŃ C, LUBECKI K & AGUIAR A M F 2023. Dung beetles (Coleoptera: Hydrophilidae) new to Madeira. *Boletim Museu de história natural do Funchal* **73** 25-27.

IMPROVED TRAPPING

The bottle trap moves on! In the 2023 paper Toshio Inoda and Kohei Watanabe demonstrate that diving beetles use smell to detect prey items. They claim that sight of the prey object is not involved, their 3D-constructed traps being opaque, but, of course, one still needs to check the relative importance of the prey's motion, another challenge for these experimenters! As to motion microwave Doppler radar was used to record movement of the beetles even in the dark. The 3D printed traps look impressive: they float with the insects entering from below into a chamber from which it has been proved they cannot escape.

Another paper on trapping had almost been overlooked. This is a helpful review by Ivan Dadykin and others on how best to run bottle traps backed up by new data, a further bonus being that the most abundant species in four Russian lakes is *Graphoderus bilineatus* (De Geer). In Russia the traps were compared with handnetting and light trapping, the latter producing what may be the first flight record for *Agabus fuscipennis* (Paykull). The contact for the first paper is Polina Volkova.

DADYKIN I A, KOLESNIKOVA U K, VOLKOVA P A & PETROV P N 2018. In search of better strategies of using activity traps to collect Dytiscidae and Noteridae (Coleoptera): a case study of a local fauna in central European Russia. *Aquatic Insects* **40** 53-75.

INODA T & WATANABE K 2023. Study of the food-searching activity by smell in diving beetles of *Cybister* Curtis, 1827 and *Hydaticus* Leach, 1817 (Coleoptera: Dytiscidae) including the use of a microwave Doppler radar. *Aquatic Insects* doi.org/10.1080/01650424.2023.2258860. pp. 16.

OLDEST KNOWN ELMID LARVA

A larva was extracted from an opencast mine for lignite in India. It can be dated to the early Eocene. No name is proposed for it but the authors provide an image of the similar-looking *Grouvellinus rioloides* (Reitter) from Kyrgyzstan. A review of known fossil elmids includes a competitor as the oldest larva a Baltic Amber inclusion described by Zippel *et al*. (see ***Latissimus* 52** 16), which is certainly the larva of a holometabolous insect but without affinity to the Elmidae.

KIREJTSHUK A G, PATEL R, RANA R S, PROKIN A, NEL A & JÄCH M A 2023. Discovery of the oldest known elmid larva (Coleoptera, Elmidae) from the Lower Eocene of Rajasthan (India, Palana Formation). *Palaeoentomology* **6** 235-241.

ZIPPEL A, BARANOV V A, HAMMEL J U, HÖRNIG M K, HAUG C & HAUG J T 2022. The first fossil immature of Elmidae: an unusual riffle beetle larva preserved in Baltic amber. *PeerJ* doi 10.7717/peerj.13025 pp. 17.

HYGROBIA IN GERMANY

In reporting *Hygrobia hermanni* in 2020 in south-west Schwabia in a pond created in 2012 Hauke Behr recalls an earlier record by Lars Hendrich and the Wendlands in Brandenburg (***Latissimus* 43** 18).

BEHR H 2021. Erneuter Nachweis des Schlammschwimmers *Hygrobia hermanni* (Fabricius, 1775) in Westmecklenburg (Coleoptera: Hygrobiidae). *Virgo* **24** 79-80.

HENDRICH L, WENDLAND L & WENDLAND N 2018. Wiederfund des Schlammschwimmers *Hygrobia hermanni* (Fabricius, 1775) und Erstfund von *Helochares lividus* (Forster, 1771) in Brandenburg (Coleoptera: Hygrobiidae, Hydrophilidae). *Markische Entomologische Nachrichten* **20** 281-288.

STABILITY FOR BEETLE GENERA

This is a plea to taxonomists to resolve the remaining issues regarding the correct specification of types for the names of genera that have been or could be used to form names of groups. Water beetles get off lightly. A minor change not affecting stability is recognition of *Donacia equiseti* Fabricius, 1798 for *Haemonia* Dejean, 1821, previously having been synonymised with *Donacia zosterae* Fabricius, 1801. Issues still surround *Deronectes* Sharp, 1882, *Platynectes* Régimbart, and *Cyclonotum* Erichson, 1837. A decision is needed on the correct spelling of the dytiscid *Ambarticus* Yang *et al*., 2019 and Ambarticini Yang *et al*., 2019, as opposed to *Ambraticus*, etc. Amongst the type species fixed in this paper are *Hydrophilus melanocephalus* Olivier, 1793 for *Enochrus* Thomson, 1859. A 1981 page paper - light indeed!

BOUCHARD P, BOUSQUET Y, DAVIES A E & CAI C 2024. On the nomenclatural status of type genera in Coleoptera (Insecta). *ZooKeys* **1194** 1-981.

YANG Q, CHEN Z-Y, JIA F-L 2019. *Ambarticus myanmaricus* gen. et sp. nov., the first diving beetle from mid-Cretaceous amber of northern Myanmar (Coleoptera, Dytiscidae, Dytiscinae). *Cretaceous Research* **102** 1–6 [with a correction on the Elsevier website - contact is Feng-long Jia]

ALGERIAN RIVER FAUNA

The Sebaou wadi river system was studied at twelve points from 20 to 920 metres above sea level producing 83 species of water beetle. The following are reported as new for Algeria:- *Hydroporus tristis* (Paykull), *Ochthebius pedicularius* Kuwert, *Chaetarthria seminulum* (Herbst), *Cymbiodyta marginella* (Fab.), *Coelostoma hispanicum* (Küster), *Hydroscapha granulum* (Motschulsky), and *Dryops nitidulus* Heer. The altitudinal distribution of eleven taxa of Elmidae is shown in detail.

LAMINE S, LOUNACI A, LOUNACI-DAOUDI D & THOMAS A 2022. Ecological distribution of Coleoptera in an Algerian river system: the Sebaou (Tizi-Ouzou, Algeria) [Coleoptera]. *Ephemera* **23** (2021) 43-62.

POND SIZE, PREDATION and WATER COLOUR IN HELSINKI

These are further papers on urban studies - see also ***Latissimus* 56** 22. At the pond scale the extent of plant cover reduces the impact of fish predation. Diving beetles prefer the more structured vegetation provided by sedges and bulrushes over reedbeds. At the landscape scale small diving beetles prefer habitats without fish, the mean body size of the diving beetle community being lower in May and June than in July in fishless ponds. Differences in predator-prey interactions between small, medium-sized and large water beetles can be linked to pond size and the extent of vegetation refuges.

The second paper shows that diving beetles responded to intensifying water colour in different ways in the presence and absence of fish. Some *Agabus* and *Dytiscus* species tolerated highly coloured water whereas smaller species such as *Hyphydrus ovatus* (L.) were mainly recorded in clear waters. Clear water provides opportunities to be both prey and predator whereas coloured water may provide a refuge from predation at the expense of there being fewer prey items available.

LIAO W, ZANCA T & NIEMELÄ J 2024. Predation risk modifies habitat use and habitat selection of diving beetles (Coleoptera: Dytiscidae) in an urban landscape. *Global Ecology and Conservation* doi.org/10.1016/j.gecco.2024.e02801.

LIAO W 2024. Water colour shapes diving beetle (Coleoptera: Dytiscidae) assemblages in urban ponds. *Insects* **15** 308 pp. 16.

DUTCH *GRAPHODERUS BILINEATUS* STATUS

A monitoring system set up for *Graphoderus bilineatus* (De Geer) in the Netherlands has produced some worrying results. Comparison of two rounds of sampling (2011-2016 and 2017-2022) indicates decline in both occupancy and numbers, particularly away from Natura2000 sites. Decreases were also stronger than for the three larger species most often found with *bilineatus*, *Graphoderus cinereus* (L.), *Cybister lateralimarginalis* (De Geer) and *Hydrophilus piceus* L. Sampling differences between different observers were also detected, but adjusted for statistically. Bram Koese has clarified that the "blanket" noted as possibly more effective than the tray in sorting the catch is the sort of cotton + polyester sheet that might be used to cover a mattress. The science in action photograph of Bram with an audience was taken by Agata Mrugala, the sheet photo by Harrie Bosma. The correspondent is Marnix de Zeeuw.

van STRIEN A J, KOESE B, STIENSTRA J, SOLDAAT L L & de ZEEUW M 2024. Trends in abundance and occupancy of the protected water beetles *Graphoderus bilineatus* in the Netherlands. *Journal of Insect Conservation* doi.org/10.1007/s10841-024-00550-x pp. 9.

PIERRE'S BEETLE

Hydroporus queneyi is another semisubterranean beetle in the *normandi* complex. It differs from *H. galloprovincialis* Manuel from south-eastern France and from the Balearic *H. lluci* Fery in having darkened antennae, being closest to the latter according to a genetic analysis based on the Cytochrome oxidase I sequence. It was found 10 km north of Montpellier in a hole cut into calcareous gravel below a pipe (as illustrated courtesy of Michaël Manuel and in an ochreous spring. An interesting feature of the wing, worth checking in more species, is that the cubital and anterior anal veins are joined by a bridge, the posterior cubital, whereas these veins are fused into a cross in *galloprovincialis*.

MANUEL M & FERREIRA J 2023. *Hydroporus queneyi* sp. n. from southern France, a new semi-subterranean diving beetle of the *Hydroporus normandi*-complex (Coleoptera, Dytiscidae, Hydroporini). *Zootaxa* **5403** 239-255.

IRANIAN DYTISCIDAE

This is a critical review of the Iranian fauna resulting in a checklist of 139 species, with 22 species and one genus considered to have been reported in the past in error. *Agabus amoenus* Solsky and *Copelatus pulchellus* (Klug) are new for Iran. The fauna is characterised as a crossroad with faunal elements from the Palaearctic, Oriental and Afrotropical regions coming together. Species of the western Palaearctic dominate north-western Iran whereas more generally typical are species of the Middle East, in some cases restricted to the countries of the Persian Gulf but with species such as *Hygrotus* (*Leptolambus*) *inscriptus* (Sharp) reaching to the Central Asian steppes. The arrival of this paper prompted GNF to ask Lena Shaverdo what was known of the Hosseinies, whom some may recall as attending past meetings of the Club. She reported that they are both doing well in retirement.

SHAVERDO H, NASSERZADEH H, EFSANDIARI M, WEWALKA G & HÁJEK J 2024. Diving beetles (Coleoptera: Dytiscidae) of Iran with province distribution, based on literature records and new faunistic data. *Aquatic Insects* doi.org/10.1080/01650424.2023.2280271 pp. 134.

FIVE CHINESE *MACRONYCHUS*

The new species, *M. xuhaoi* Jiang & Chen is described from southwest China, having been caught in light traps. It joins *M. jaechi*, *M. hendeki*, *M. kubani* and *M. reticulatus*, all described by Čiampor & Kodada, 1998 (see ***Latissimus* 11** 29). The correspondent is Xing-Sheng Chen.

CIAMPOR F & KODADA J 1998. Elmidae: 1. Taxonomic revision of the genus *Macronychus* Müller (Coleoptera). In: M.A. Jäch & L. Ji (eds) 1998. *Water Beetles of China* 2. Vienna, Austria. 219-287.

JIANG R-X & CHEN X-S 2024. A new species of the genus *Macronychus* Müller, 1806 from China (Coleoptera, Elmidae). *Zootaxa* **5419** 275-282.

CYBISTRINAE REVISION

The Cybistrinae is monophyletic but its genera needed revision, done here using morphological features, mainly of South American representatives. *Megadytes* Sharp is redefined, based solely on *Dytiscus latus* Fab. and *Cybister parvus* Trémouilles. *Metaxdytes* is erected to take on six species once in *Megadytes*. *Nilssondytes* is a new genus with a single new species, *diversus*, in Venezuela. *Paramegadytes* Trémouilles & Bachmann is raised to a genus with two species, *australis* (Germain) and *glaucus* (Brullé). *Trifurcitus* Brinck is also raised to a genus with six species. This leaves *Dytiscus costalis* Fab., *D. obovatus* (Kirby) and "*Megadytes* species, IR57" as left undescribed by Ignacio Ribera *et al*. (2008) without a new home.

RIBERA I, VOGLER A P & BALKE M 2008. Phylogeny and diversification of diving beetles (Coleoptera: Dytiscidae). *Cladistics* **24** 563-590.

MILLER K B, MICHAT M C & FERREIRA N 2024. Reclassification of Cybistrinae Sharp, 1880 in the Neotropical Region (Coleoptera, Adephaga, Dytiscidae), with description of new taxa. *ZooKeys* **1188** 125-168.

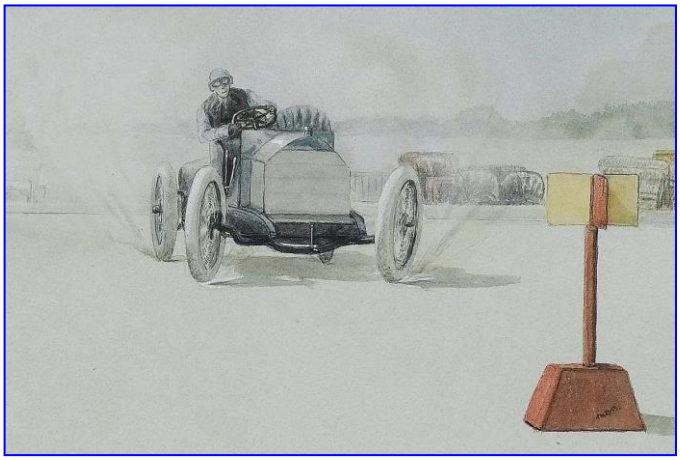
BIODIVERSITY LOSS IN NORTH AFRICA

Some Atlantic coastal basins and the mountainous areas of the Rif, the Pre-Rif, the Middle Atlas and northern Central Plateau are identified as priority areas for the conservation of water beetles. Less than 10% of these areas are protected.

BELHAJ A, MINGARRO M, SÁNCHEZ-FERNÁNDEZ D, BENNAS N, CHERGUI B & PALLARÉS S 2024. Conservation of freshwater biodiversity in North Africa under future climate and land-cover changes. *Biodiversity and Conservation* doi.org/10.1007/s10531-024-02790-4

BALFOUR-BROWNE TROPHIES DISAMBIGUATED

Rothamsted Insect Survey's newsletter, which is mainly about trapping moths, had an entry in February 2024 about Fred Courtier. He worked for the Forestry Commission as the forester for Denny Lodge Inclosure, an area known well by many coleopterists. His work on the local wildlife was recognised by The British Deer Society in 1988 by the award of the Balfour-Browne Trophy. One might say "the other Balfour-Browne Trophy ", presented by Vincent Balfour Browne (1880-1963), Frank Balfour-Browne's younger brother. Vincent was a barrister but also a wellknown artist specialising in wildlife scenes.



Thanks go to Sarah Stride and David Mcauley for use of the image and to John Badmin for drawing attention to the newsletter.

To complete this exercise one needs the other artist. This is Frank's sister, Margery Balfour-Browne (1886-1919) sadly dying young of Spanish Flu. She specialised in racing motors, as shown in a detail here.

BIOCONTROL IN BRITAIN

This article makes passing comments to three items of relevance to water beetles. The salvinia weevil, *Cyrtobagous salviniae* (Calder & Sands) is used against the Giant Salvinia *Salvinia molesta*, but not in Britain of course. The weevil *Listronotus elongatus* (Hustache) has been released in Britain for control of floating pennywort *Hydrocotyle ranunculoides* (see ***Latissimus* 53** 11) and the Australian eriophyid gall mite *Aculus crassulae* Knihinicki *et al.* was released from 2019 onwards in an attempt to control New Zealand Pygmyweed *Crassula helmsii*.

BERMAN C, TILLING A & VARIAS 2024. Making friends with natural enemies: a history of biocontrol in Britain. *British Wildlife* **35** 274-280.

CRASSULA BAGS

Nothing specifically about beetles here but relevant because of previous, perhaps overplayed, concerns (see ***Latissimus* 56** 31). Litter in bags from New Zealand Pygmyweed took longer to break down than that from a starwort, *Callitriche stagnalis* Scopoli. The breakdown started with the invasive shredder *Crangonyx pseudogracilis* Bousfield, later overtaken by pea mussel, *Euglesa casterana* (Poli), an "interstitial suspension feeder".

TASKER S J L, FOGGO A & BILTON D T 2024. Are impacts of the invasive alien plant *Crassula helmsi*i mediated by detritus? A litter experiment in a temperate pond. *Hydrobiologia* doi.org/101007/s10750-024-05571-w

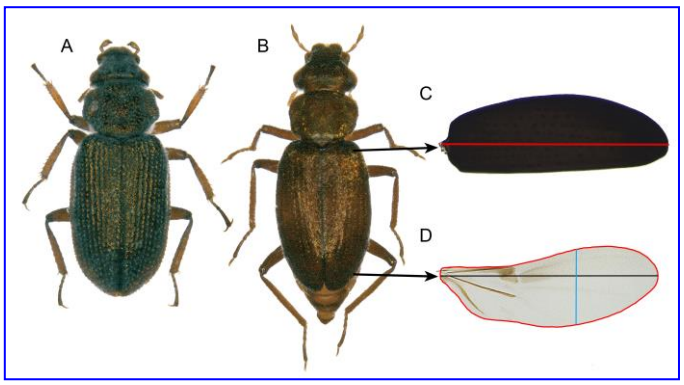
BEETLES VS. DRAGONFLIES ON CONNEMARA MOUNTAINS

The faunas of two lake types recognised as needing protection within the European Union are compared, based on 24 sites in Connemara, western Ireland, ranging from 27 to 208 metres above sea level. Nine of the 13 sites in the Owenduff/Nephin area were dystrophic, small acidic bog pools with low oxygen levels, whereas many sites in the Connemara bog complex further south were classified as type 3110, oligotrophic lakes. As might be expected, beetles dominated the first and odonates the second. Upland species, *Agabus arcticus* (Paykull), *Dytiscus lapponicus* Gyllenhal and *Boreonectes multilineatus* (Falkenström) occurred in a few sites in both areas and in both lake types. Water chemistry was done in detail but it would have been helpful to know the extent of occupancy by fish. Mercifully, the extremely unlikely record of *Hydroporus neglectus* Schaum was excluded from analysis.

CAPPELLI G, GRAY E, GAMMELL M & LALLY H 2023. Using Coleoptera and Odonata as a monitoring tool for improving protected lake habitat characterisation: a case study from Ireland. *Research Square* pp. 28.

FLIGHT FROM ROCKPOOLS

Flight capacity was studied in *Ochthebius lejolisii* Mulsant & Rey and *O. quadricollis* Mulsant under controlled conditions in dishes in a water bath. These species had similar behaviours with 60-80% undertaking flight. Females had larger bodies and wing areas than males. Wing shapes are relatively larger and narrower wings than in other *Ochthebius*, suggesting good flight capacity over short distances. Molecular data showed low genetic divergences between neighbouring populations. These findings are consistent with wind-assisted dispersal, active flight simply being intended to get the insects air-borne. The correspondent is Josefa Velasco, with images courtesy of Andrés Millán.



PLAZA-BUENDÍA J. MIRÓN-GATÓN J M, GARCÍA-MESEGUER A J, VILLASTRIGO A, MILLÁN A & VELASCO J 2024. Flight dispersal in supratidal rockpool beetles. *Insects* **15** 140 pp. 13.

***AUSTRELATUS* + 42**

The description of *Austrelatus* Shaverdo *et al*., 2023 (see ***Latissimus* 55** 1) continues, yet another New Guinea megapaper.

SHAVERDO H, HENDRICH L, SURBAKTI S, PANJAITAN R & BALKE M 2024. Revision of the *Austrelatus papuensis* group with descriptions of 42 new species from New Guinea (Coleoptera, Dytiscidae, Copelatinae). *ZooKeys* **1201** 1-165.

SHAVERDO H, HÁJEK J, HENDRICH L, SURBAKTI S, PANJAITAN R & BALKE M 2023. *Austrelatus* gen. nov., a new genus of Australasian diving beetles (Coleoptera, Dytiscidae, Copelatinae), with the discovery of 31 new species from New Guinea. *ZooKeys* **1170** 1-164.

THURINGIAN ENTOMOLOGY

Detlef Krebs summarised the beetle records from a meeting in Gotha in 2022. 528 beetle taxa were recorded but there were few water beetles, perhaps the most interesting being at Kleiner Wagenberg with *Agabus melanarius* Aubé, *Hydraena pygmaea* Waterhouse and *Limnius perrisi* (Dufour). A meeting in 2023 in the Schwarzatal in the Thuringian Highlands produced records of 1,470 invertebrate taxa including a list of 652 beetles assembled by Andreas Weigel, Andreas Kopetz and Detlef Krebs. There were few water beetles, mainly found in woodland streams and including *Helophorus arvernicus* Mulsant, *Chaetarthria simillima* Vorst & Cuppen, *Limnebius crinifer* Rey and *Elmis maugetii* Latreille. The contact is Matthias Hartmann. In the third paper comprehensive lists are provided for the beetles found in horse and cattle dung at Burgberg and Ölberg. These include thirteen hydrophilid species including *Cercyon castaneipennis* Vorst.

KREBS D 2022. Coleoptera (Käfer). pp. 153-169 in: R. Bellstedt & D. Krebs Bericht zur Gemeinschaftsexkursion des Thüringer Entomologenverbandes e.V. (TEV) im Juni 2022 in Landkreis Gotha. *Mitteilungen des Thüringer Entomologenverbandes* e.V. **29** 135-200.

ERLACHER S, KOPETZ A, KREBS D & WEIGEL A 2023. Gemeinschaftsexkursion des Thüringer Entomologensverbandes (TEV) vom 30.06-09.07.2023 in das NSG "Schwarzatal" im Thüringer Schiefergebirge. *Mitteilungen des Thüringer Entomologenverbandes e. V.* **30** 95-208.

LÄMMERHIRT T & BELLSTEDT R 2024. Käfer in Pferde- und Rinderdung bei Waltershausen (Coleoptera: Carabidae, Hydrophilidae, Ptiliidae, Staphylinidae, Geotrupidae, Scarabaeidae un Curculionidae) - Faunistische Nachrichten vom Burgberg bei Waltershausen, Nr. 7. *Mitteilungen des Thünnger Entomologenverbandes e. V.* **31** 26-36.

NEW BELORUSSIAN RECORDS

These are for the Stronga Republican Landscape Reserve and include *Spercheus emarginatus* (Schaller), *Cercyon castaneipennis* Vorst, *C. melanocephalus* (L.), *C. pygmaeus* (Illiger), *Cryptopleurum minutum* (Fab.), and *C. subtile* Sharp.

The second paper is an update of a report (see ***Latissimus* 56** 29) that there were no substantiated record of *piceus* in Belarus, all vouchers of old records being *aterrimus* Eschscholtz. In September 2023 *H. piceus* was found in Lake Glublya in the west of Belarus.

RYNDEVICH S K, SALUK S V, SUKHODOLOV I A & RAMANKA I R 2024. [New findings of beetles (Coleoptera: Carabidae, Spercheidae, Hydrophilidae, Staphylinidae, Tenebrionidae, Cerambycidae, Chrysomelidae) for fauna of Stronga reserve] *BarSU Herald. Series "Biological sciences (general biology), agricultural sciences (agronomy).* **1** (15) 68-75. [in Belarusian].

RYNDEVICH S K 2024. *Hydrophilus piceus* (Linnaeus, 1758) (Insecta: Coleoptera: Hydrophilidae): a new species for Belarusian fauna. *BarSU Herald. Series "Biological sciences (general biology), agricultural sciences (agronomy).* **1** (15) 76-80.

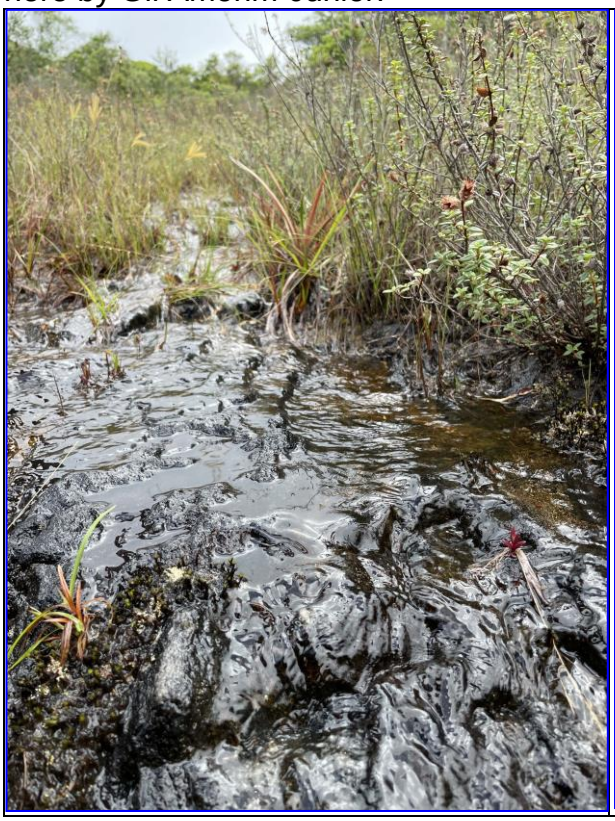
HORSEHAIR WORM EATEN BY *CYBISTER*

This study represents the first observation of a diving beetle larva, *Cybister brevis* Aubé, predating on an adult horsehair worm (Gordioida: Chordodidae).

WATANABE R 2019. Field observation of predation on a horsehair worm (Gordioida: Chordodidae) by a diving beetle larva *Cybister brevis* Aubé (Coleoptera: Dytiscidae). *Entomological Science* **22** 230-232.

EPHYDROLITHUS

Five species were described when this genus was proposed in 2019, five more subsequently by Alencar *et al*. (2022), and two here by Amorim-Junior *et al*. All live in seepage, usually being found on wet rock, illustrations of which are kindly provided here by Gil Amorim-Junior.



ALENCAR J B R, SERRA M B, SHORT A E Z & HAMADA N 2022. New species and new distributional records of the hygropetric water scavenger beetle genus *Ephydrolithus* Gión & Short (Coleoptera: Hydrophilidae) from the Brazilian Shield. *Canadian Journal of Zoology* **100** 81-825.

AMORIM-JUNIOR G P, NASCIMENTO J M C & HAMADA N 2024. *Ephydrolithus* Girón & Short, 2019 (Coleoptera: Hydrophilidae): new species and updated distribution records from Northeast region of Brazil. *Zootaxa* **5443** 54-66.

GIRÓN J C & SHORT A EZ 2019 Three additional new genera of acidocerine water scavenger beetles from the Guiana and Brazilian Shield region of South America (Coleoptera, Hydrophilidae, Acidocerinae). *ZooKeys* **855** 109-154.

A

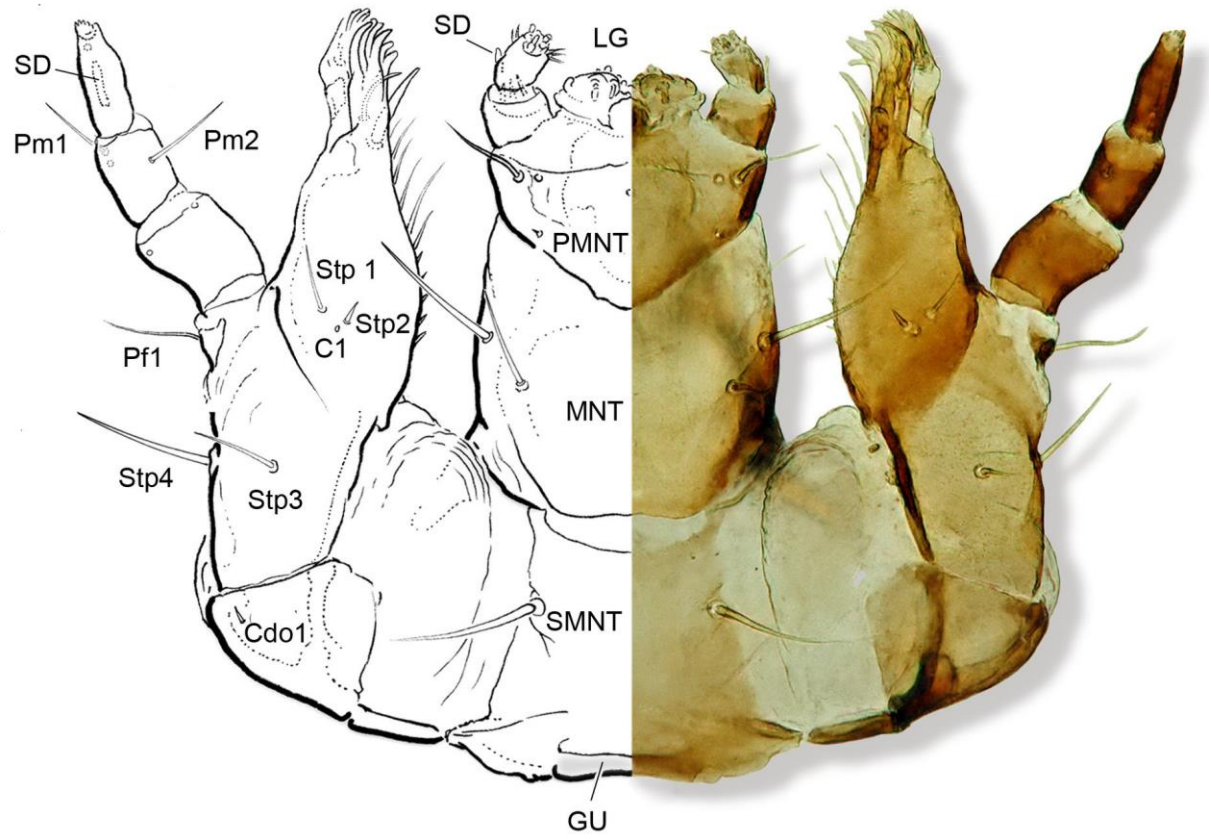
BARCODING LEAF BEETLES

The extent to which BOLD (Barcode-of-Life database) reflects the true number of species was assessed for various parts of the world. 73,342 barcodes could be grouped into 5,310 BINS approximating what we understand as individual species. This was from 101 countries, tops by a mile being Costa Rica, with 31,541 sequences. Only Canada, South Africa, Germany and Spain came anywhere near. The Palaearctic, with data from 23 countries, had enough data to attempt a useful estimate of the true number of species put at just over a thousand. The correspondent is Alfried Vogler.

LO E, NIE R-E & VOGLER A P 2024. The geographic and phylogenetic structure of public DNA barcode databases: an assessment using Chrysomelidae (Leaf beetles). *Frontiers in Ecology & Evolution* **12** 1305898.

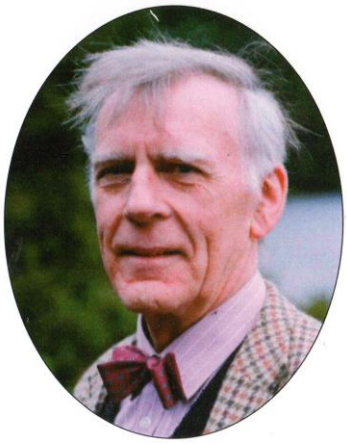
***PROSTHETOPS* LARVA**

The larvae of this rockpool hydraenid are described for the first time, with a masterclass in illustration and interpretation as provided by Juan Delgado, as exemplified here by a ventral view of the maxillae and labium, courtesy of the authors. The gut contents were examined in detail, a striking feature being the presence of phytoliths, silica bodies often formed in grasses and accumulating in mud. Nutritional items in order of occurrence were plant fragments, fungal spores, fungal hyphae and pollen grains.



DELGADO J A & BILTON D T 2024. Morphology and feeding biology of larvae of the South African endemic water beetle genus *Prosthetops* Waterhouse, 1879 (Coleoptera: Hydraenidae). *Zootaxa* **5481** 209-224.

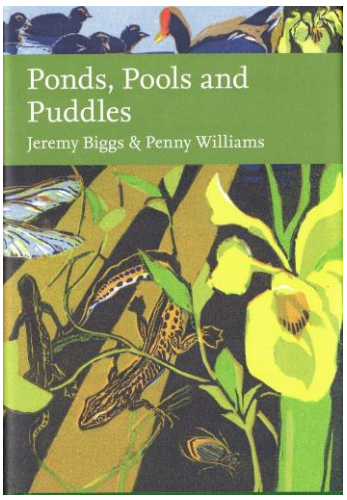
THOMAS HENRY HUXLEY 1929-2024



Tom's main interest in insects was to build a data-base of aquatic bugs culminating in an atlas published by BRC in 2003. At the same time he generated 400 records of water beetles scattered over Britain. His trip in 1999 to see Viking sites investigated by his sister produced 56 specimens of 15 species of water beetle in Canada, the specimens now being in GNF's collection. As a great grandson of the other Thomas Huxley, the one who devised the term "agnostic", it was appropriate that the committal at Perth Crematorium was humanist and utterly appropriate that Tom had persuaded the Reverend David Cameron to preside, to use his words, "in mufti".

HUXLEY T 2003. *Provisional atlas of the British aquatic bugs (Hemiptera, Heteroptera).* Huntingdon: Biological Records Centre.

IN PRAISE OF PONDS



📖 BIGGS J & WILLIAMS P 2024. *Ponds, Pools and Puddles*. The New Naturalist Library. London: William Collins. £65 (hardback), also available as a paperback.

This book was one of the earliest subjects in the proposals for the *New Naturalist* series, conceived by Sir Alister Hardy about 80 years ago. Its long gestation must owe a lot to the bias towards larger water bodies shown over the years. Kit Macan (1973) had "It is to be regretted that ponds have been neglected by professionals who have generally worked on the largest lakes they could find.' The authors cite "the saliency error" of John Dowling (2009), i.e. if something is small it cannot be important.

The authors launched the book at an Eventbrite webinar on 2 May 2024, and the following will show you why you might need to buy the book no matter where you are found in the world. The talks themselves should now be on YouTube https://www.youtube.com/watch?v=PIKAO9FnHSc&t=373s. The authors also produced a comprehensive Questions & Answers PDF to cover all the questions raised by the audience. Sarah Hoyle, also from the Freshwaters Trust, chaired the meeting with two talks on Eventbrite. Jeremy Biggs provided an overview of British ponds, starting with the Hell Kettles in County Durham, for which we have records going back to 1862, followed by Stow Bedon Common for which we have 1,500 records of 96 species. It lies immediately adjacent to the best water beetle site in Britain, Thompson Common in West Norfolk, first equal with Catfield Fen in East Norfolk. Jeremy condensed the book's comprehensive coverage of what might be defined as a pond down to between one square metre and two hectares with water present at least four months of the year. Estimates of the number of ponds in Britain are around the one million mark. The smallness of ponds was identified as the key to understanding their importance. They can be more varied than larger water bodies and more easily isolated, the example given being Hothfield Bog in East Kent, an acid water site in a base-rich area. Diversity is high because different pond types can occur together, supporting more species at the landscape level. Catchments will be small and therefore more easily protected, with, say, a catchment of less than 20 hectares compared to an adjacent river with 2,000 times as much. *Haliplus furcatus* Seidlitz was instanced as a species known now from only two ponds in Britain in the area of Otmoor, Oxfordshire. And new clean ponds can easily be created.

Penny Williams's talk concerned naturalness, succession, seasonality, grazing and tree shading, and had some interesting ideas about the history of ponds, noting the misconception that ponds are artificial in the eyes of some scientists. She hypothesised that the range of species that might be associated with a Silurian pond could be very similar to that of the present day, and proposed ponds as "an ancient natural habitat type". Succession, with the ultimate loss of some ponds, means that we need balance with sites at different stages in succession. Cited was the paper by David Keen *et al*. (1999) demonstrating the slow, about 3,000 years, infilling and then smothering of an interglacial pond (within which Russell Coope demonstrated the existence of a rich beetle fauna), finally "ironed out" by agriculture. Penny pointed out that the species occurring in such ponds were well adapted to the successional crisis. On grazing Penny emphasised the importance of poaching whereby footprints produce a series of individual water bodies. This must go back to the Devonian and the first tetrapods. There is also a "dinoturbation index" based on the strength of

dinosaur footprints in the Cretaceous (e.g. Lockley & Conrad 1989). Shading obviously started in the Carboniferous and Penny emphasised the importance of a dappled edge allowing some plant species to survive in dry periods.

The main message was that ponds are a super-power, bringing clean habitats to a landscape. The ensuing discussion included Darwin's (1871) "warm little pond", the failure of the Water Framework Directive to recognise anything less than 50 hectares, and new environmental protection legislation intended to replace EU legislation in England, which recognises "ponds" as a habitat (see for example The Environmental Targets (Biodiversity) (England) Regulations 2023). Sadly, it being a Thursday night, one had to leave to go to the pub.

DARWIN C 1871. Letter No. 7471. Charles Darwin to J.D. Hooker.

DOWNING J A 2009. Global limnology: up-scaling aquatic services and processes to planet Earth. *Internationale Vereinigung für theoretische und angewandte Limnologie Verhandlungen* **30** 1149-1166.

KEEN D H, BATEMAN M D, COOPE G R, FIELD M H, LANGFORD H E, MERRY J S & MIGHALL T M 1999. Sedimentology, palaeoecology and geochronology of Last Interglacial deposits from Deeping St James, Lincolnshire, England. *Journal of Quaternary Science* **14** 411-436.

LOCKLEY M G & CONRAD K 1989. The palaeoenvironmental context, preservation and palaeoecological significance of dinosaur tracksites in the western USA. pp. 121-134 in: D.D. Gillette & M. Lockley (eds) *Dinosaur tracks and traces*. Cambridge: University Press.

MACAN T T 1973. *Ponds and lakes*. London: Allen & Unwin.

BUT HANG ON ..... The authors claim that ponds have been recognised as important only spasmodically in the past. But ponds have long been recognised as important for water beetles, and *vice versa*. For example Frank Balfour-Browne (1915), in his review of the Outer Hebrides, recognised "ballast-holes", the flote-grass (*Glyceria*) dominated pools beside the roads from which they were formed, as providing the most speciose habitat for water beetles, albeit in transition to more species-poor *Sphagnum* pools similar to naturally occurring ones. Earlier, for example in his paper on Clare Island, Donegal (Balfour-Browne 1912), he identified the importance of ponds on the basis of their special temperature regime, and so on. Balfour-Browne's early contribution is acknowledged (p. 167) but only in its focus on water beetles, though Balfour-Browne started with odonates and gave them up because there was not enough of them. One could go on, but this would detract from the intended positiveness of this review of a very [pond-]dippable book. Water beetles get their own section on pages 341-351, with a concentration on commonness and on flight capacity in relation to habitat use. The section ends with a commentary on the Great Silver Water Beetle, *Hydrophilus piceus* L., a species recently returned to the Cambridgeshire levels. For such a wide-ranging document errors are barely detectable. Beate Nürnberger (1996) had the authors believing that the North American whirligig *Dineutus assimilis* (Kirby) lives in Sweden. Much store is set by the National Pond Survey, and it would be great to incorporate a few of the records of rarer species into the water beetle recording scheme.

BALFOUR-BROWNE F 1912. Clare Island Survey 29. Aquatic Coleoptera. *Proceedings of the Royal Irish Academy* **31** 1-20.

BALFOUR-BROWNE F 1915. The aquatic Coleoptera of the Outer Hebrides. *Scottish Naturalist* **1915** 13-20, 60-67, 89-92, 106-111.

NÜRNBERGER B 1996. Local dynamics and dispersal in a structured population of the whirligig beetle *Dineutus assimilis*. *Oecologia* **106** 325-336.

IN PRAISE OF PONDS (CONT.) - A WIDER VIEW Trevor Beebee's (2024) review in *British Wildlife* of this addition to the *New Naturalist* series is to be recommended as being unconstrained by water beetles, but even he singles out *Hydrophilus piceus* L. as an example of a strong-flying species with a restricted distribution.

BEEBEE T 2024. Review: Ponds, Pools and Puddles. *British Wildlife* **35** 544-545.

TIGHTENING UP SPECIES DESCRIPTIONS

Opponents of barcode-based diagnoses deplore that the mere listing of a DNA sequence of nucleotides "puts an immense burden on the use to isolate few distinctive elements from an avalanche of nondiagnostic background noise". Those who favour barcoding as a way of describing taxa are claimed to put forward three lines of defence - 1. barcodes are strings of only 500-1,000 letters that once discovered are just as straightforward to use as a list of biological characters; 2. barcodes provide more information on the extent of divergence and distinction beyond the basics of describing a new species; 3. barcode differences are all we have for cryptic species. The authors note that there is nothing wrong with including non-differential DNA sequences in a description; additional information is often given in biological descriptions. The basic question posed here is whether providing online a series of entire genomes can - or should - comply with the Codes of nomenclature. The "broadly permissive approach" of the current Codes will lead to the "biological field ...overrun with DNA-produced nondiagnoses solely based on references to massive sequence archives without taxonomic context..." Such a development could make some biologists adopt an alternative naming system. The authors want biologists to weigh-in wherever possible to make sure future editions of Codes have rigorous criteria for naming species.

RHEINDT F A + 25 others 2024. Tightening the requirements for species diagnoses would help integrate DNA-based descriptions in taxonomic practice. *Plos Biology* doi.org/10.1371/journal.pbio.3002251 pp. 13.

COUNTRY LIFE - *RESPECT!*

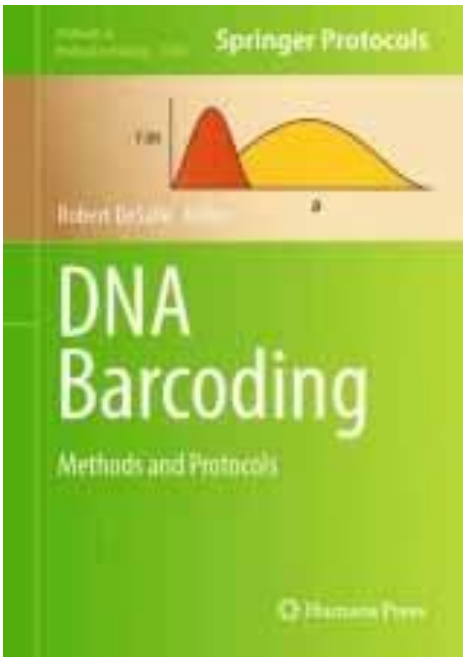
A surprise entry in one of the glossiest of glossies, this article churns out the usual things, but does it rather well.

On page 76 "Something of the vastness [of beetle diversity] is reflected in the huge *Coleoptera* collection in the Natural History Museum, London SW7, which runs to more than 100,000 type specimens. Built upon the historic endeavours of well-travelled beetle hunters, such as Sir Joseph Banks, Charles Darwin, Alfred Russel Wallace, David Sharp and George Lewis, down to more recent entomologists, including Derek Lott and Eric Philp, it is one of the most important collections in the world."

And on page 79 "Also attracting a band of dedicated followers are the water beetles, which comprise several species of diving beetle, silver water beetles and whirligigs. Jonty Denton, in his *Water Bugs and Water Beetles of Surrey* (2007), declares: '"The pure streamlined form of a water beetle does more for me than any Ferrari.' There's even a water-beetles club named after 'the father of water-beetle study', Frank Balfour-Browne, whose last paper on the subject was published only weeks before his death at the ripe old age of 93 in 1967. Although the agenda of this internationally respected society includes excursions to study the water beetle of Africa, the largest of all British water beetles, the king diving beetle (*Dytiscus dimidiatus*) is now rare." The author's contact details are unknown, but he is probably not to blame for the randomness of some of the punctuation.

WATKINS Jack 2024. The beetles anthology. *Country Life* 26 June 2024 76-79.

AGABUS AND BARCODES



This paper was accessed from HAL, an open access archive for scientific documents, whether they are published or not. The book from which it comes in about £220. The authors have taken barcode data on *Agabus* species from the Barcode of Life Data Systems (BOLD). Forty-seven species of *Agabus* are mentioned in the text, plus *erichsoni*, presumably *Ilybius erichsoni* (Gemminger & von Harold), which was once treated as an *Agabus* and should, presumably, have jumped out as having a distinctive barcode. A 48th species, *A. arcticus* (Paykull) features strongly in Figure 3, plots of overlaps of DNA in two areas of mitochondrial DNA. The paper's conclusion doesn't tell us much about *Agabus*, the DNA barcode gap being characterised "using the multispecies coalescent through proposing a suite of easily computed and interpreted nonparametric estimators inspired by populations genetics theory along with observed trends in taxon DNA sequence diversity." A little jarring is the unexpected claim that the approach is ideally suited for studying seafood fraud and invasive pest management. It would have been more helpful so say what the studies mean for *Agabus* phylogeny. Shades of ***Latissimus* 55** 21.

PHILLIPS J D, GRISWOLD C K, YOUNG R G, HUBERT N & HANNER R H 2024. A measure of the DNA barcode gap for applied and basic research. pp. 375-390 in Robert DeSalle (ed.) *DNA Barcoding: methods and protocols* **2744**. 978-1-0716-3583-4. 10.1007/978-1-0716-3581-0_24. hal-04579301.

ACOUSTICS POTENTIAL

The authors estimate that over 7,000 species of freshwater insects in four orders produce sounds worldwide. The review includes a table identifying the noise-making mechanism, the frequency range and the associated behaviours in each family. This raises a concern as the most obvious noise-making water beetles in the Hygrobiidae are insufficiently covered despite plenty of information being in the public domain. By the way, check out *The Freshwater Sounds Archive* on **X**, contact Jack Greenhalgh, the correspondent for the paper being Camille Desjonquères.

DESJONQUÈRES C, LINKE S, GREENHALGH J, RYBAK F & SUEUR J 2024. The potential of acoustic monitoring of aquatic insects for freshwater assessment. *Philosophical Transactions of the Royal Society B* **379** 20230109. doi.org/10.1098/rstb.2023.0109

SUBFOSSIL CRETANS

Are there many reports of Mediterranean subfossil beetles? This paper, which is mainly concerned with the sediments in a core of a temporary pond in Crete dating from the Late Glacial to the mid-Holocene, also reports some macroinvertebrates including a *Rhantus*, an *Ilybius* and *Laccophilus minutus* (L.). Better than nothing and better late than never. The correspondent is Elias Dimitriou.

STYLLAS M, DIMITRIOU E, GRITZALIS K, KOUTSODIMOU M, KARAOUZAS I, SKOULIKIDIS N & GOGOU A 2018. Mid-Holocene changes in the geochemical and biotic conditions of an aquatic ecosystem, in Eastern Mediterranean. *International Journal of Limnology* **54** pp. 15.

MOROCCAN HYDROCHIDAE

Eight species of *Hydrochus* have been identified from Morocco - *aljibensis* Castro & Delgado, *angustatus* Germar, *flavipennis* Küster, *grandicollis* Kiesenwetter, *nitidicollis* Mulsant, *smaragdineus* Fairmaire, *tariqi* Ribera, Hernando & Aguilera. and lastly a species referred to as "cf. *obtusicollis* Fairmaire". Fairmaire (1877) gave only the locality "Maroc" for "*obtusicollis*. Long. : 4. millim. - *H. foveostriatus* valde similis, sed multo major, fuscus, vix aeneomicans, parum nitidus prothorace latiore, ad angulos anticos obtuso, fovea discoidali evidentiore, corpora crassiore, et magis convexo." It appears that Fairmaire's material is lost but the authors fall short of specifying a neotype. It is a pity that the claimed similarity to "*foveostriatus*" in Fairmaire's description is not addressed. The Palaearctic and World Catalogues follow Robert Angus's (1977) synonymy with *flavipennis*, based on finding a Tangiers specimen in Fairmaire's collection in Paris. There's also Figure 65C in Balfour-Browne (1958), the aedeagus of "*foveostriatus*", a good impersonation of *smaragdineus* as depicted in the Moroccan paper.

On page 203 the material used to evaluate *obtusicollis* is claimed to include three males taken by Garth and Sue Foster, and which are to be found in the collection of the Abdelmalek Essaadi University. Neither my wife nor I took any males when in Morocco, only three females.

The main paper is on pages 197-206, with an appendix listing localities.

ANGUS R B 1977. A re-evaluation of the taxonomy and distribution of some European species of *Hydrochus* Leach (Col., Hydrophilidae). *Entomologist's Monthly Magazine* **112** 177-201, 1 plate.

BENAMAR L, BENNAS N, VAN BERGE HENEGOUWEN A, GARCÍA-MESEGUER A J, HASSOUN M, BENALI N & MILLÁN A C 2024. The Hydrochidae (Coleoptera) of Morocco with a redescription of *Hydrochus* cf. *obtusicollis* Fairmaire, 1877. *Zootaxa* **5458** 197-228.

FROZEN FOOD

Three sources of prey for rearing *Cybister* larvae - odonate nymphs, odonate nymphs + tadpoles and frozen crickets - were compared. The only differences between diets were in the duration of the second instar, all diets proving adequate for producing adult beetles with the same wet weight.

FUKUOKA T, TAMURA R, YAMASAKI S & OHBA S-y 2024. Frozen crickets are a useful prey for rearing the diving beetle *Cybister sugillatus* (Coleoptera: Dytiscidae) larvae: a growth comparison with raised on field-collected prey. *Japanese Journal of Environmental Zoology* **35** 1-7.

MOSQUITO PREDATION IN INDONESIA

This experiment demonstrated that adult *Cybister* could eat up to an average of 0.755 mosquito larvae an hour.

BOLEU F I & dan BOYKE R T 2023. Predasi kumbang penyelam dewasa *Cybister* sp. (Coleoptera: Dytiscidae) terhadap larva *Aedes aegypti*. *Bioscientist: Journal Ilmiah Biologi* **11** 465-474.

A NEW CHINESE *HYDROCHARA*

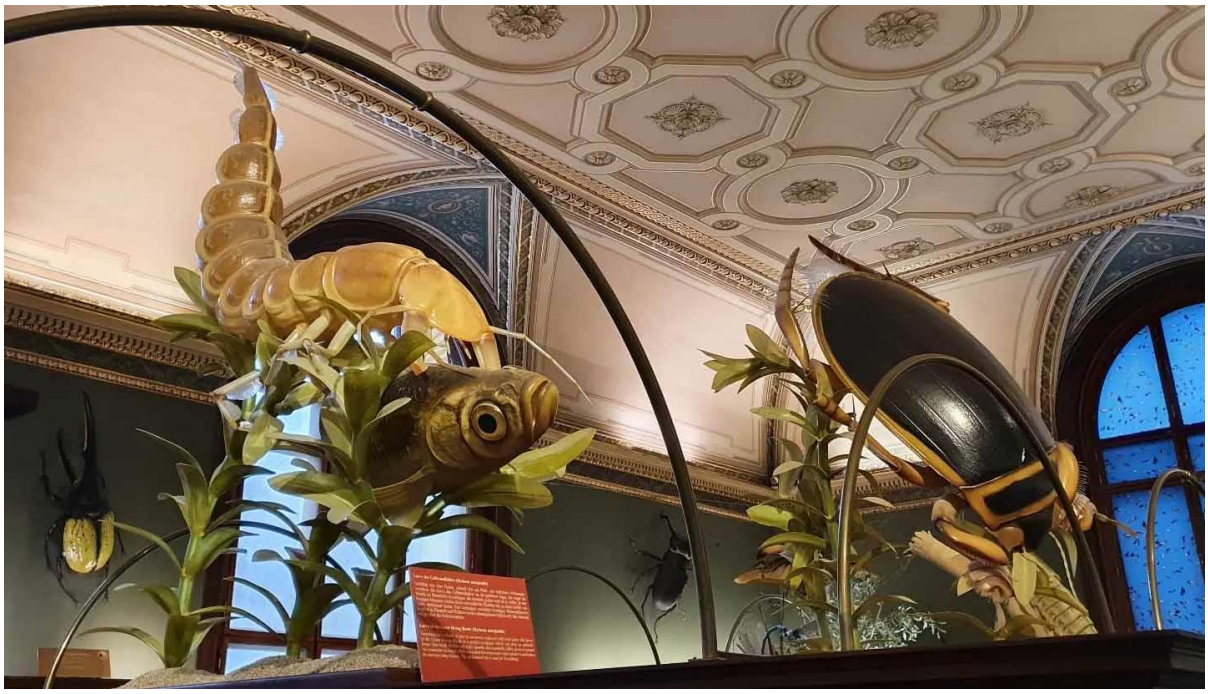
Hydrochara loong was described from specimens taken in Shaanxi and Hubei. It is similar to *H. libera* (Sharp). A key is provided for the five *Hydrochara* species known from China. A "loong" is a creature of Chinese legend.

MAI Z & JIA F 2024. A new species of *Hydrochara* Berthold from China (Coleoptera, Hydrophilidae, Hydrophilini). *Zootaxa* **5453** 359-368.

Доўгая Ноч Навукі

Lena Shaverdo put on Facebook an invitation to a "Long Night of Science" in Vienna Museum on 24 May 2024.

У пятніцу, 24.05.2024, з 17.00 да 23.00, Венскі Музей Прыродазнаўства ўдзейнічае ў эвенце "Доўгая Ноч Навукі". Тэма "Таксаномія": пра адкрыццьцё і апісаньне новых відаў і наогул даследаваньне біяразнастайнасці нашай планеты. У межах гэтага эвента, я праважу дзьве экскурсіі пра свае даследваньні водных жукоў, а 19.00 і 21.00. Прыходзьце. Больш інфармацыі глядзіце на сайце музея: I invite you on a tour of water bugs!



Matt Smith was the first to note the potential of the models on display for attachment to the Ierse Kevers Trophy.

***AGABUS LOTTI* SYNONYMISED WITH *ULIGINOSUS*?**

In Germany Konrad Dettner found a site where both *A. uliginosus* (L.), with the characteristic expansion of the phallobase, occurred together with *A. lotti* Turner, Toledo & Mazzoldi, 2015, which appears to have a more typical basal expansion of the aedeagus as well as a difference in the twist of the median lobe. Comparison of genital structures revealed a variation with age from "*lotti*" to older *uliginosus*. Genetic analysis demonstrated a considerable range of haplotypes in Germany, Hungary and Finland. The paper reviews the biology of *uliginosus*, noting flight activity recorded at light by Dietmar Spitzenberg (2021), something overlooked when commenting on that book (***Latissimus* 50** 33). Derek Lott ia also commemorated with *Hydraena lotti* Bilton, 2013.

BILTON D T 2013. *Hydraena lotti* sp. nov., a new member of the "*Haenydra*" lineage from the Peloponnese (Greece), with additional records of *Hydraena* species in the region (Coleoptera, Hydraenidae). *Zootaxa* **3637** 29-38.

DETTNER K, KOVACS Z, REWICZ T & CSABAI Z 2024. Age-dependent variation of aedeagal morphology in *Agabus uliginosus* and the status of *A. lotti* (Coleoptera, Dytiscidae). *bioRχiv* doi.org/10.1101/2024.05.07.592935

SPITZENBERG D 2021. *Die wasserbewohnenden Käfer Sachsen-Anhalts*. Rangsdorf: Landesamt für Umweltschutz Sachsen-Anhalt

ALPINE SPAIN AGAIN

One worries that scientists leave water beetles out of a title of a paper concerning them because they are embarrassed not to be working on birds or frogs or something else more populist. Anyway, this paper is based entirely on Dytiscidae on and around the Sierra Nevada and has an approach different to the one noted in ***Latissimus* 56** p. 27. Ten species were studied, five from the mountains - *Agabus nevadensis* Lindberg, *Hydroporus marginatus* (Duftschmid), *H. nevadensis* Sharp, *H. sabaudus sierranevadensis* Shaverdo, and *Boreonectes ibericus* (Dutton & Angus) - and five species mainly found in lowlands - *Agabus biguttatus* (Olivier), *A. bipustulatus* (L.), *A. didymus* (Olivier) , *A. conspersus* (Marsham) and *Hydroporus pubescens* (Gyllenhal). Cold tolerance was assessed by the supercooling point, the lower lethal temperature and tolerance to being enclosed in ice, and heat tolerance was assessed by the temperature at which heat coma sets in. Cold tolerance did not stop lowland species getting high up. The most striking difference between the two groups was that the montane species had mostly higher heat coma temperatures than the lowland ones. This is consistent with the temperature extremes that might be expected in exposed montane sites, even though it might seem counter-intuitive.

CARBONELL J A, PALLARÉS S, VELASCO J, MILLÁN A & ABELLÁN P 2024. Thermal tolerance does not explain the altitudinal segregation of lowland and alpine aquatic insects. *Journal of Thermal Biology* **121** 1033862 pp. 10.

PEAT STRIPPING AND WATER BEETLES

Peat cuttings usually have more species of water beetles than an intact peat bog so long as they are not drained. The authors, laudably not working in their mother tongue, have been poorly served by the editors at Cambridge University Press. The editor-in-chief of the *Journal* concurred. it is difficult to summarise the findings here. The checklist of species appears to cover 38 species of Dytiscidae, the problem being that the nomenclature is dated and muddled. *Hygrotus impressopunctatus* (Schaller) appears twice, once in the genus and once under its subgenus. *Hydaticus continentalis* Balfour-Browne is repeated as *H. stagnalis* (Fab.). The only *Laccophilus* species identified is *L. hyalinus* (De Geer), but surely some other species was involved? The redundancy analysis figure is rather odd but shows that something is going on, perhaps explicable by reference to *Hydroporus*, *Acilius* and *Graphoderus* species. It is to be hoped that the paper, which appears to be provided as a "First View", gets overhauled in a further version.

KUCZYŃSKA K, CZERNIAWSKI R & KREPISKI T 2024. Peat mine as a threat to the diversity of aquatic beetles (Coleoptera: Dytiscidae) in the protected area Nature 2000 in Poland. *Bulletin of Entomological Research* doi.org/10/10.1017S000748532400021X pp. 8.

RICE TERRACE ALTERNATIVES

Abandonment of rice terraces is resulting in biodiversity losses in Japan. Here the aquatic insects are compared in four habitat types - paddy fields, their irrigation ponds, abandoned paddy fields in which weed growth was allowed by no longer cultivating or applying herbicides, and a "mixed field", managed like a paddy field but not cultivated. Beetles were more abundant with increasing surface area, their larvae being more abundant in shallow sites.

WATANABE R, KUBO S, FUKUOKA T, TAKAHASHI S, KOBAYASHI K & OHBA S-y 2024. *Wetlands* **44** 68 pp. 15.

ILYBIUS PSEUDONEGLECTUS IN SLOVAKIA

This species was found in old saltpans near Tvrdošovce. A map of the overall distribution is provided plus a description of the beetle. Found in the same habitats were *Agabus uliginosus* (L.), *Rhantus suturalis* MacLeay), *Liopterus haemorrhoidalis* (Fab.), *Hydroporus planus* (Fab.), *Laccornis kocae* Ganglbauer, *Helophorus aequalis* Thomson, and *H. micans* Faldermann.

KODADA J, GOFFOVA K & SELNEKOVIČ D 2024. First record of the diving beetle *Ilybius pseudoneglectus* (Franciscolo, 1972) in Slovakia (Coleoptera, Dytiscidae). *Check List* **20** 842-846.

EARLY EVOLUTION OF BEETLES

The formation of elytral epipleura to make a tight fit with the abdomen was a major transformation in the Middle Permian, the resulting subleytral space providing many opportunities for new developments including of course life in water. Permian families were mostly associated with dead wood of gymnosperms. The extinction event marking the end of the Permian resulted in many changes, in particular the decline of larger beetles associated with wood. The Adephaga and Myxophaga underwent an initial wave of diversification in the Triassic when Polyphaga were very rare. Polyphaga diversified in the Jurassic, with fossil representation of the Elateriformia, Staphyliniformia and Cucujiformia. Amber inclusions have greatly improved the fossil record in the Cretaceous.

BEUTEL R G, XU C, JARZEMBOWSKI E, KUDRATA R, BOUDINOT B E, McKENNA D D & GOCZAL J 2024. The evolutionary history of Coleoptera (Insecta) in the late Palaeozoic and the Mesozoic. *Systematic Entomology* **49** 355-388.

HYDRAENIDAE OF BRAZIL

Thirty-four species of Brazilian Hydraenidae are regarded as valid. The Atlantic Forest is the most diverse area with 24 species, 21 of them endemic. *Hydraena* and *Ochthebius* probably occupy most of Brazil whereas *Adelphohydraena* is restricted to the Amazon, with *Parahydraenida* on the mountains of the Brazilian Shield.

BENETTI C J, ALENCAR J B R & HAMADA N 2024. Taxonomic catalog of the Brazilian fauna: Hydraenidae (Insecta: Coleoptera), diversity and distribution. *Zoologia* **41**: e23069 pp. 17 Special Issue Animal Life in Brazil.

AGNOSHYDRUS

Ten species of this hyphydrine genus are now known with two new species described from Thailand, *thailandicus* and *wewalkei*. A key is provided and a map of south-east Asia covers all species.

OKADA R 2024. A review of *Agnoshydrus* Biström, Nilsson & Wewalka, 1997 (Coleoptera: Dytiscidae: Hyphydrini), with descriptions of two new species from Thailand. *Zootaxa* **5428** 440-448.

OLDEST *RHANTUS*

Rhantus villumi is described from a 55.4 million year old deposit of diatomite clay on the island of Mors, Denmark. The Fur Formation is named after the island of Fur. This then is oldest known representative of an extant dytiscid genus, of a *Rhantus* and of the subfamily Colymbetinae.

PROKIN A A, HÁJEK J, VASILENKO D V & PERKOVSKY E E 2024. The oldest *Rhantus* (Coleoptera, Dytiscidae) from the earliest Eocene Fur Formation, Denmark. *Zootaxa* **5458** 263-274.

SPAWN IN SPAWN

This report, previously appearing as a *bioRχiv* item, concerns the beetle *Hydaticus parallelus* Clark laying its eggs in the spawn of the sandpaper frog, *Lechriodus* now *Platyplectrum fletcheri* (Boulenger).

GOULD J, VALDEZ J W, CLULOW S & CLULOW J 2019. Diving beetle offspring oviposited in amphibian spawn prey on the tadpoles upon hatching. *Entomological Science* **22** 393-397.

***RELICTORYGYMUS* BY A STREAM**

These 3-6 mm long hydrophilids are easily confused with the distantly related *Coelostoma*. The newly described *R. riparius* is compared with the other two known species, all from the Cape. It was found in a wet moss by a mountain stream.

BILTON D T & MLAMBO M C 2024. A new, apparently lotic species of *Relictorygmus* from the Northern Cape Kamiesberg, South Africa (Coleoptera, Hydrophilidae, Cylominae). *Zootaxa* **5448** 143-150.

CANARIAN *OCHTHEBIUS*

Ochthebius (*Cobalius*) *lanthanus* Ribera & Foster, 2018, described from Grand Canary, has been found in one out of five rockpool sites investigated on Tenerife, all sites having been occupied by *O. heeri* Wollaston. DNA sequences were compared with those available for both species.

VILLASTRIGO A & GARCíA-ESQUIVEL E 2024. First record of the subgenus *Cobalius* on Tenerife, Canary Islands. *Spixiana* **46** 197-199.

NEW CHINESE *OOCYCLUS*

The three new species are keyed with the six previously known from China. All are associated with wet rock. *O. extensus* is noted as being active at night. The correspondent is Zu-qi Mai.

JIA F-l & MAI Z-q 2024. Three new species of *Oocyclus* Sharp, 1882, with additional records from China (Coleoptera, Hydrophilidae, Laccobiini). *ZooKeys* **1205** 17-38.

DECLINE BASED ON LAKE SEDIMENT

A weak but interesting link here. This work is based on trying to find the cause of the decline in the Common Scoter, *Melanitta nigra* (L.), a large sea duck that breeds in the lochs of the far north of mainland Scotland. It had been suggested that this decline might be because of a reduction in the macroinvertebrate food needed by females and their young. The work includes a study of lake deposits which show that, if anything, macroinvertebrate abundance increased from about 1900, with a further increase at about 1970, both periods presumably associated with increased atmospheric deposition. One of the four lochs central to the study is Loch a'Mhuilinn, one of the few lochs we know for *Oreodytes alpinus* (Paykull), a beetle that surely spices up the diet of scoters now and again.

ROBSON H J, JONES V J, BROOKS S J, SAYER C D, DOUSE A & HILTON G M 2023*. Frontiers in Conservation Science* doi: 10.3389/fcosc.2023.1161732

WILDFISH

The website https://WildFish.org has been recommended for some interesting illustrations by Cyril Bennett. There are about 20 plates intended to help anglers identify aquatic beetles, including immature elmids. Only be wary of a *Nebrioporus* masquerading as a *Haliplus*!

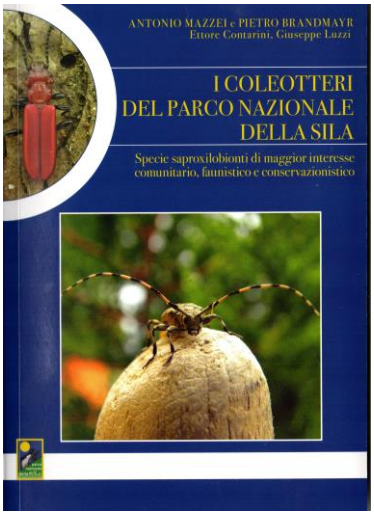
ITALY 2024

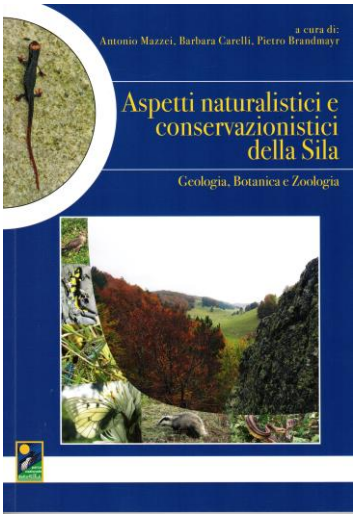
There were no flights from Scotland to Lamezia Terme, the airport nearest to La Sila, so our trip began with a delayed flight to Naples, a chance to renew acquaintance with (a) a hotel now improved by demolition of the building opposite thus giving a great view of Vesuvius, (b) the local gelateria as shown here, and (c) the spot in Naples Airport where we contracted Covid19 in 2022. Matt Smith patiently ate ice cream and waited after a much earlier flight from Heathrow, then drove us down Italy and up La Sila.

This meeting had first been proposed in November 2019 for 2020 in ***Latissimus* 44**. Covid19 intervened. To Vincenzo Volpe's credit he persisted in setting it up again despite the need for a change to the local venue and the heightened risk averseness to travel persisting in some quarters. Rather earlier, the Sila was closer to Sardinia but, in the Early Pliocene, moved to become attached to the Italian mainland as the front end of the boot, and very near to Sicily. This high plateau area is isolated by ravines and has some potential to retain inhabitants that could be almost as distinct from those of the rest of the Italian mainland as are some species from Corsica and Sardinia. We were provided with two excellent works fringing on aquatic Coleoptera, also a guide to the botany prepared by Carmen Gangale. The book on saproxylic beetles by Mazzei and Brandmayr (2016) has a history of beetle recording at La Sila. It notes that Dytiscidae constitute only 2% of the known beetle fauna, and Hydrophilidae 3%. The other book we were given was a more wide ranging account of conservation of the area (Mazzei, Carelli & Brandmayr 2021). It includes a chapter on invertebrates by Pietro Brandmayr and Antonio Mazzei. The insects restricted to the Sila include *Enochrus calabricus* (Ferro). *Scarodytes pederzanii* Angelini is named as one of the insects for which the Sila is an important source in the Mediterranean area. Unless there is something more recent the most significant paper is by Fernando Angelini (1991). This seems to omit a few earlier records, perhaps because of a need for them to be corrected.

The new meeting was proposed for 20-24 June 2024, recentred on the Hotel Parco dei Pini - Sila Wellness Hotel, and concentrating on the southern part of the 78,000 ha National Park. We were supported by local guides and it was great to hear how the Carabinieri are now involved in conservation, with a talk by Nicola Cucci, their local head. Our chairman, Robert Angus, was unable to join us but our president, Anders Nilsson, had made his stately way from Rome with Vincenzo, our organiser, along the modern equivalent of the Via Aemelia Scaura. He opened the meeting, likening this giant pine forest to Sweden but without mosquitoes. Sadly he noted that we were also without Joja Geijer (1945-2023), last seen at our Arctic meeting in 2019. Carmen gave an account of the development of La Sila. We then had a talk by Zu-qi Mai, based in Prague, on his studies on the taxonomy and phylogeny of

Oriental Megasternini. He noted his interest had begun with the popularity of water beetles as culinary items in Guangdong, or was it the hydrophilids to be found in waste water, or, most important of all, contact with Professor Feng-long Jia? The extraordinary diversity of largely undescribed *Cercyon*-like lineages might be matched with the Australasian Copelatinae, the champion of which in terms of number of species described alone is Lena Shaverdo, also present. By attaching our two Chinese members to where they currently study beetles we might claim ten countries, Zu-qui in the Czech Republic and Wenfei Liao to Finland. And it was reassuring to see those industrious Dutchmen, Oscar Vorst and Barend van Maanen, once again sorting their piles of refuse into the night, not to mention Clive Turner and son Toby doing something probably worse!





The first trip was to the Ciricilla valley, where the *Scarodytes* was presumably *pederzanii*, though much of the fauna was just as typical of northern Europe. The second river, the Fiume Simeri, was faster, running through woodland, and was the first place at which *Deronectes semirufus* (Germar) was encountered. The day ended with a visit to Il Semaforo Sila Hotel where they take their huge pizzas very seriously: the restaurant was also remarkable for having a whole page of the menu devoted to Calabrian wines, many more than feature on their website, www.ilsemaforosila.it. By chance the one chosen for general distribution from Vincenzo's grandmother's village. Some of us went there (the restaurant that is) twice.

The second day started with a stepped stream in the Valle del Soleo, where a pinkish form of *Hydraena pygmaea* Waterhouse went off for DNA extraction. The Green Grill had provided refreshments and a view of their bathing pool, a more natural pond nearby proving dry. A swamp near Grechi added a few species. Later we encountered the full extent of Italian antipasti in the Wellness's dinner, few being able to do the following pasta justice. The main ceremony involved the President forcing the Ierse Kevers Trophy upon Vincenzo. In passing it might be noted that the Trophy has gained two medals from last year from Steven Routledge, one for Carlisle United Football Club, the other celebrating winning something. Note also the 3D-printed *Cybister* painted by Rachel Mackay-Austin in 2022.

Pizza distribution
[photograph: Clive Turner]

Lena, Barend, Oscar and Clive
[photograph: Anders Nilsson]

Three professors in a swamp
[photograph: Will Watson]

A livid green patch in the distance

We went to Lorica, by the Lago Arvo, on the 23rd, mainly working a tree-lined river and ascending to the ski centre on Monte Botte Donato for lunch, where boy scouts were persuaded to take a group photograph. Further north-west we came to an open area with a livid green patch in the distance. The main pond was dry but Barend fell into the bog beside it - and no-one photographed him (or did they?}

Wenfei, Clive and Su-qui at Lorica
You can never have too much kit

The group at Monte Botte Donato with Lago Arvo in the background. Giovanni, our guide, is on the right
[photograph: the Boy Scouts]

That lush green site on page 31
[photograph: Giovanni Vizza ,Il Barattelo Ecocronei]

Early closing day at Green Grill
The pool is shut

This was a friendly meeting with beetle interest extending to bupestrids and longhorns on forest woodstacks, and more entomologically wonderful because of all the butterflies and the absence of mosquitoes. The frequency of *Hydroporus memnonius* Nicolai type form so far south was unexpected with its usual friend, *H. nigrita* (Fab.), with blotchy elytra causing confusion among *H. analis* Aubé and *H. tessellatus* (Drapiez). A final list needs to be compiled.

Those staying another day had a look at one of the large reservoir lakes, the Lago delle Passante and went back to the Green Grill, only to find that Tuesday is early closing day and that the swimming pool had been drained! It still produced two species extra to the Foster list, but probably well recorded by others less constrained by senility. Then, for some of us the three day travel shambles back to Scotland via Greece [*sic*].

But for others ..... Vincenzo led a group south to the Aspromonte National Park and the coast. The best record appears to have been *Methles cribratellus* (Fairmaire), new for the Italian mainland first taken by Will Watson in a lake near Lamezia. No doubt more later.

All photographs by the Fosters, the rest hopefully acknowledged correctly.

The Società Entomologica Italiana has also published a report on the meeting, thanks to Professor Marco Bologna of Università degli Studi di Roma Tre:
https://www.societaentomologicaitaliana.it/incontro-sui-coleotteri-acquatici-dellaltopiano-silano/

Methles cribratellus
[photograph: Will Watson]

The lagoon at Lamezia with Vincenzo Volpe
and Barend van Maanen [photograph: Will Watson]

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Contacts

Gilson P. Amorim-Junior, Laboratório de Citotaxonomia e Insetos Aquáticos, Instituto Nacional de Pesquisas da Amazónia, Manaus, Amazones, Brazil junior.amorim/at/msn.com
Hauke Behr, Herrengrabenweg 57, 19061 Schwerin, Germany hauke-behr/at/web.de
Abla Belhaj, LESCB URL-CNRST N° 1, Abdelmalek Essaadi University, Tetouanm Morocco abla.belhaj/at/uae.ac.ma
Loubna Benamar, LESCB URL-CNRST N 18, FS, Abdelmalek Essadi University, Tetouan, Morocco benamar.loubna-etu/at/uae.ac.ma
Caesar João Benetti, Departamento de Biodivsidad y Gestión Ambiental, Facultad de Ciecnias Biológicas y Ambientales, Universidad de León, Spain cjbenetti/at/gmail.com
Arno van Berge Henegouwen, Sheveningsebos 15, 2716 Zoetermeer, The Netherlands arnovbh/at/xs4all.nl
Christopher Berman, CABI, Bakeham Lane, Egham, Surrey, England, UK c.bergman/at/cabi.org.uk
Rolf Beutel, Institut für Zoologie und Evolutionsforschung, Friedrich-Schiller-Universität Jena, Jena 07743, Germany rolf.beutel/at/uni-jena.de
Jeremy Biggs, Freshwater Habitats Trust, Bury Knowle House, North Place, Headington, Oxford OX39HY, England , UK jbiggs/at/freshwaterhabitats.org.uk
David Bilton, Marine Biology and Ecology Research Centre, School of Biological and Marine Sciences, University of Plymouth, Drake Circus, Plymouth PL4 8AA, England, UK d.bilton/at/plymouth.ac.uk
Fiktor Imanuel Boleu, 1Program Studi Kehutanan, FIATR, Universitas Halmahera, Indonesia
Pat Bouchard, Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, 960 Carling Avenue, Ottawa, Ontario, Ontario , K1A 0C6, Canada patrice.bouchard/at/agr.gc.ca
Michaela Brojer, Natural History Museum Vienna, Burgring 7. 1010 Vienna, Austria michaela.brojer/at/nhm-wienac.at
Giovanni Cappelli, Atlantic Technological University, Ireland giovanni.cappelli/at/research.atu.ie
J.A. Carbonell, Department of Zoology, Faculty of Biology, University of Seville, Seville, Spain jacraboher/at/us.es

Xiang-Sheng Chen, Institute of Entomology, Guizhou University, Guiyang 550025, Guizhou, China chenxs3218/at/163.com
Zoltan Csabai, University of Pécs, Department of Hydrobiology, Ifjúság útja 6, H-7624 Pécs, Hungary csabai/at/gamma.ttk.pte.hu
Camille Desjonquères, Université Grenoble Alpes, Université Savoie Mont Blanc, CNRS, LECA, 38000 Grenoble, France cdesjonqu/at/gmail.com
Konrad Dettner, Universität Bayreuth, D-95440 Bayreuth; Hohereuth 17b, D-95448 Bayreuth, Germany k.dettner/at/uni-bayreuth.de
Elias Dimitriou, Geoservice Ltd., Eirinis 15 street, 55236, Panorama, Thessaloniki, Greece elias/at/cmr.gr
Juan Delgado, Departamento de Zoología y Antropología Fisica, Universidad de Murcia, 30100 Murcia, Spain jdelgado/at/um.es
Taichi Fukuoka, Department of Environmental Solution Technology, Graduate School of Science and Technology, Ryukoku University, 1-5 Yokotani, Seta Oe, Otsu. Shiga 520-2194, Japan t.fukuoka01183820/at/gmail.com
John Gould, School of Environmental and Life Sciences, University of Newcastle, Callaghan, 2308 NSW, Australia john.gould/at/uon.edu.au
Jack Greenhalgh, Instituto Pirenaico de Ecología, Av. Ntr. Str. de la Victoria, 22700, Jaca, Huesca, Spain jackhalgh95/at/gmail.com
Czesław Greń, Upper Silesian Museum in Bytom, Department of Natural History, pl. Jana III Sobieskiego 2, 41-902 Bytom, Poland czelaw.gren/at/vp.pl
Matthias Hartmann, Naturkundmuseum Erfurt, Große Arche 14, D-99084 Erfurt, Germany
Lars Hendrich, Lars Hendrich, SNSB-Zoologische Staatssammlung München, Münchhausenstraße 21, 81247 Munich, Germany hendrichs/at/nsb.de hendrich1/at/aol.com
Paul Hendriks, Oostwold (Leek), The Netherlands hendriksmast/at/home.nl
Toshio Inoda, Katsushika, Tokyo, Japan inoda/at/kxb.biglobe.ne.jp
Feng-long Jia, Institute of Entomology, School of Life Science, Sun-Yat-sen University, Guangdong, Guangzhou, 510275, China fenglongjia/at/aliyun.com
Alexander Kirejtshuk, Zoological Institute of the Russian Academy of Sciences, Universitetskaya emb., 1, St. Petersburg 199034, Russia agk/at/zin.ru
Jan Kodada, Department of Zoology, Faculty of Natural Sciences, Comenius University in Bratislava, Ilkovičova 6, 842 15 Bratislava, Slovakia jan.kodada/at/uniba.sk
Detlef Krebs, Winterbergstraße 5, D-07751 Rothenstein, Germany detlef.krebs/at/gmx.de
Katarzyna Kuczyńska, Department of Hydrobiology, Institute of Biology, University of Szczecin, Poland katarzyna.kuczynska/at/phd.usz.edu.pl
Smail Lamine, Laboratoire 'Ressources Naturelles', Département de Biologie, Faculté des Sciences Biologiques et Sciences Agronomiques, Université Mouloud Mammeri, Tizi-Ouziu, Algeria lounaci/at/yahoo.fr
Torsten Lämmerhirt, Ausfeldstraße 49, D-99880 Waltershausen, Germany laemmie/at/t-online.de
Wenfei Liao, School of Life Science and Technology, University of Electronic Science and Technology of China, No. 4, Section 2, North Jianshe Road, 610054 Chengdu, Sichuan, China wenfei.liao/at/helsinki.fi
Zu-qi Mai, Life-Sciences School, Sun-Yat-sen University, Guangzhou, 510275, Guandong, China lssifl/at/mail.sysu.edu.cn maiz/at/fzp.czu.cz
Michaël Manuel, Sorbonne Université, Institut de Systématique, Evolution, Biodiversité (UMR 7205), MNHN SU CNRS EPHE UA, Case 05, quai St Bernard, 75005 Paris, France michael.manuel/at/sorbonne-universite.fr
Andrés Millán,
Kelly B. Miller, Department of Biology and Museum of Southwestern Biology, University of New Mexico, Albuquerque, NM 87131-0001, USA kbmiller/at/unm.edu

Ryohei Okada, Thailand National History Museum, National Science Museum, Pathum Thani, 12120 Thailand wasserinsekt/at/kub.biglobe.ne.jp
Jarrett D. Phillips, School of Computer Science, University of Guelph, Ontario, Canada N1G 2W1 jphill01/at/uoguelph.ca
Alexander Prokin, Papanin Institute for Biology of Inland Water, Russian Academy of Sciences, 152742, Borok, Nekouzsky District, Yatoslav Oblast, Russia prokina/at/mail.ru
Frank Rheindt, National University of Singapore, Department of Biological Sciences, Singapore dbsrfe/at/rus.edu.sg
Hannah Robson, Environmental Change Research Centre, Department of Geography, University College London, England, UK hannah.robson/at/wwt.org.uk
Sergey Ryndevich, "Baranovichi State University", 21 Voykova St., 225404 Baranovichi, Belarus ryndevichsk/at/mail.ru
Lena Shaverdo, Natural History Museum Vienna, Burgring 7. 1010 Vienna, Austria Helena.shaverdo/at/nhm-wienac.at
Sayali Sheth, Annasaheb Kulkarni Department of Biodiversity, Abasaheb Garware College, Pune, Maharastra 411004, India saylisheth/at/gmail.com
Samuel Tasker, Marine Biology and Ecology Research Centre, School of Biological and Marine Sciences, University of Plymouth, Drake Circus, Plymouth PL4 8AA, England, UK samuel.tasker/at/plymouth.ac.uk
Mario Toledo, Centro Studi Naturalistici Bresciani, Brescia. DI.PRO.VE.S., Università Cattolica del Sacro Cuore, Piacenza, Italy toledo.pinguicula.mario3/at/gmail.com
Josefa Velasco, Departamento de Ecología e Hydrología, Facultad de Biología, Universidad de Murcia, 30100, Espinardo, Murcia, Spain jvelasco/at/um.es
Adrián Villastrigo, Division of Entomology, SNSB - Zoologische Staatssammlung München, Münchhausenstraße 21, 81247 Munich, Germany adrianvillastrigo/at/gmail.com
Alfried Vogler, Department of Life Sciences, Natural History Museum, Cromwell Road, London SW7 5BD a.vogler/at/nhm.ac.uk
Polina Volkova, Moscow Grammar School in the South-West, Moscow, Russia polina.an.volkova/at/gmail.com
Reiya Watanabe, Graduate School of Regional Resource Management, University of Hyogo, 128. Shounji, Toyooka, Hyogo 668-0814, Japan watanabe.reiya.sw/at/alumni.tsukuba.ac.jp
Marnix de Zeeuw, Statistics Netherlands, PO Box 24500, 2490 HA The Hague, the Netherlands mzew/at/cbs.nl
Ana Zippel, Ludwig-Maximilians-Universität München, Fakultät für Biologie, Großhaderner Straße 2, 82152 Planegg-Martinsried, Germany zippel/at/bio.lmu.de

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