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LATISSIMUS

NEWSLETTER OF THE BALFOUR-BROWNE CLUB

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Graphoderus bieneri Zimmermann
a male taken by Robert Angus in China in 2019
and photographed by him using the equipment in the
Sackler Bioimaging Laboratory of the Natural History
Museum, London.

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

ONCE MORE IN THE MIDDLE KINGDOM! Robert Angus

Zulong with the GB net, marshy inlet by the Harbin River.

In the course of her various visits to the Natural History Museum in London Professor Hong Pang of Sun Yat-sen University asked me more than once if I had any plans for a further visit to China. This was a very tempting idea but required some thought as to where I should go collecting. Xining in Qinghai on the northern part of the Tibetan Plateau was an obvious choice as there are certainly loose ends to tie up there, but that might not be favoured because of potential altitude problems. So where else? In the end I thought of Heilongjiang in NE China, where I might find some of the East Siberian *Helophorus* I had collected in 1970 and hopefully get chromosome data. The area of the Sanjiang Plain, which extends as a tongue of land more or less from Harbin to just across the river from the Russian town of Khabarovsk looked interesting and apparently had a number of protected wetlands in it. So this was the agreed target.

I flew out to Guangzhou on June 2nd and was duly met by Fenglong Jia. On the 8th we flew up to Harbin. Our party consisted of Fenglong, his Master's student Zulong Liang (working on Noterids, Haliplids and Gyrinids), and me, to be joined in Harbin by Dr Ziwei Yin of Shanghai, who studies Pselaphinae. It was dark by the time we reached Harbin but Fenglong had booked a hotel on a route served by the airport bus, and once there (almost!) we walked the last bit following the time-honoured Chinese way of Sat-Naving our way along the pavement! Ziwei was waiting for us at the hotel, and we had arranged that our car plus driver would meet us in the morning.

High quality fen by the Harbin River, habitat *of Graphoderus bieneri.*

We had decided to begin our fieldwork with a day's collecting in the Harbin area – not without some trepidation on my part as Peter Hammond had spent two years in Harbin in the mid 1960s and brought back a very good selection of beetles. Peter is a formidable collector and I did not think I would be anywhere near his standard! Harbin is enormous. Peter said that when he was there the population was about a million, but now it is about 10 million! We headed north across the Harbin River (Songhua Jiang), first to a hilly area poetically named Mongolia Mountain. The whole area seemed rather dry, but we found a nice stream and some flooded wheel-ruts. Few beetles, but including two *Helophorus browni* McCorkle, some *Crenitis apicalis* Reitter and several *Hydrobius.* After lunch we moved back to the river to try some of the riverside fens. Here it was very good to see the net which I had left in 2013 being put to good use by Zulong. Fenglong uses a sieve with which he works wonders! The water levels in the fens were definitely falling and I saw no trace of the residual snow-melt pools I had been expecting. However, we got some good things including *Graphoderus adamsii* Clark (black underneath), attractively striped *Hydaticus grammicus* Germar, and *Hydrophilus dauricus* Mannerheim, very like *H. aterrimus* Eschscholtz but with, among other things, a differently shaped expansion of the claw-segment of the fore tarsi. Then, in the last fen of the day, a second *Graphoderus*, with a pale underside. Mounting excitement here as I hoped it would be *G. bieneri* Zimmermann, known only from the Russian Far East. And indeed it was *G. bieneri*, though this took quite a lot of work to establish. *G. bieneri* really is very similar to *G*. *cinereus* (L.), but the post-tarsal claws of the female are distinctive, as is the arrangement of suckers on the mesotarsi of the male. *G. bieneri* appears to be very rare in collections, inviting comparison with the fabled droppings of rocking-horses! This fen also produced a single

female of *Hydrophilus acuminatus* Motschulsky, which, like *H. piceus* (L.) has a small spine at the sutural apex of the elytra, but differs in the more elongate pointed apical segment of the antennal club. This was the nicest fen of the day, with masses of yellow-flowered *Utricularia macrorhiza* LeConte, an east Asian and American species. *Utricularia* are carnivorous plants and as such require mineral-poor water, indicating that this was an uncontaminated fen. Nevertheless, it was clearly regulated, with its banks consolidated with large stones held in place by wire-netting.

Utricularia macrorhiza indicating high water-quality.

Roadside pool south of Mishan. Here was the *H. nanus*. Photo: Zulong Liang

Next morning we began our trip to the Sanjiang Plain. It transpired that much or this area, including the tongue of land leading up to Khabarovsk, was considered a border area, out of bounds to foreigners without special permission. Still, there was an extensive area in the western part of the Plain available to study. Most of the day was taken up by the journey to Mishan, but once checked in to our hotel there was time for some local collecting before dinner. A stream draining fields yielded *Helophorus sibiricus* Motschulsky and *Noterus angustulus* Zaitzev (a *N. crassicornis* Müller relative), while nearby pools had abundant *N. japonicus* Sharp, a *N. clavicornis* De Geer relative. Interesting that in this part of the eastern Palaearctic there is one species of each of these groups, as in much of Europe. Anyway, all grist to Zulong's mill!

We found most of the land in this area very intensively cultivated and poor in beetle-habitats, though wooded areas appeared less degraded. However, even here the piles of plastic empty agrichemical bottles beside pools did not inspire confidence – though Fenglong, by way of reassurance, said that not all had contained insecticide – some had contained herbicides! And that evening we found a single female *Helophorus nanus* Sturm in a roadside pool. We soldiered on and the beetles kept coming, though in low numbers. We searched wooded areas near Mishan and on the following days near Qitaihe and Mudanjiang. The area round Qitaihe was best – well-wooded with native deciduous trees and fairly flat. We found *Helophorus browni* McCorkle and *H. orientalis* Motschulsky. As we were leaving the Qitaihe area a rather large dark-brown Mustelid ran across the road. Too small for a Wolverine, but too large for a Polecat. In the end I thought it must have been a Sable. The others, sitting in the back of the car, did not see it and relegated it to the category of "Kangaroo" based on the story (hopefully true) that this is an Aboriginal word meaning "I don't know"!

Mudanjiang (meaning River of Peonies) was our final stop. This is the first Chinese town encountered by Russians driving over from Vladivostok, and they were much in evidence, not least in the local supermarket! Here we bought an ingenious Chinese speciality for our lunchtime picnic – prepacked beef and rice (separate packages) with an outer box to hold quick lime (another sealed package) and water, with the food, now mixed, placed in a tray above. The lime and water boiled away vigorously and effectively heated the meal. Really quite good, though not exactly Michelin five-star! Collecting in the wooded area near Mudanjiang produced, in a large wheel-rut, a steady trickle of *Helophorus browni* (all female as it happens), and a nearby lake gave one Water Scorpion *Nepa cinerea* L., needed for a DNA study in Romania.

Stream in the Dadingshan Forest Farm near Mishan, habitat of *H. sibiricus* Motschulsky. Photo: Zulong Liang

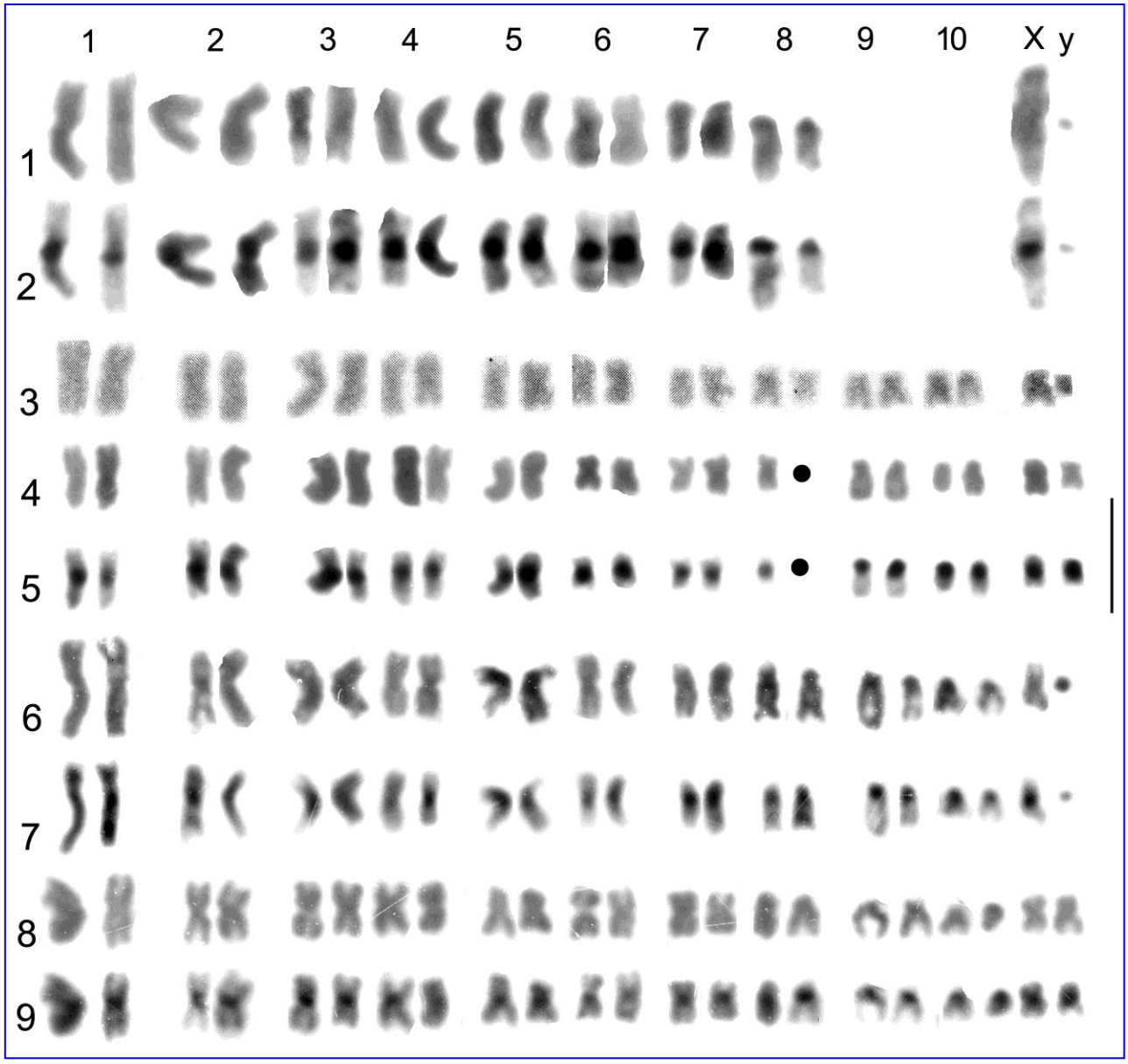
Roadside pool in the Qitaihe wooded area. From the left: Zulong, Ziwei and Fenglong

Wheel-rut near Mudanjiang.

Daurian Lily near Mudanjiang.

After this we drove back to Harbin for our final night “in the field” before flying back to Guangzhou and Shanghai. The paucity of water beetles and *Helophorus* in particular came as a shock. To a large extent this may have been because we were between generations. Before we set off for Harbin Hong Pang warned me there had been snow in the area only the previous week, and Peter Hammond told me that at one stage in May when he was there, he slept the night in a hut beside the Songhua Jiang and enjoyed listening to the tinkling of the ice as it broke up and floated away downstream. I guess that would have had to be April this year – sorry Trump, Global Warming is a solid fact! I also suspect that

this area of Heilongjiang gets less snow than adjacent areas of Siberia and the Russian Far East. All the *Helophorus* and *Hydrobius* studied for chromosomes had the gonads small, indicating that they were the new generation, not adults overwintered from the previous year. As to the effect of the insecticides – I don't know!



Karyotypes of some Chinese *Helophorus*. The scale line represents 5µm.

1, 2 *H. sibiricus*, plain and C-banded. 18 chromosomes, as expected.

3 *H. nanus*, a French specimen shown by Angus in January 1982, ***Newsletter* 44**, Towards an atlas of *Helophorus* chromosomes. Photographed in 1976, the original photograph long lost!

4, 5 *H. nanus*, from south of Mishan, female with 1 chromosome lost from this preparation (●). Plain and C-banded. The karyotype matches that of the French specimen!

6, 7 *H. browni* ♂, plain and C-banded, from Qitaihe.

8, 9 *H. browni* ♀, plain and C-banded, from Qitaihe.

Sasha Shatrovskiy has found that *H. browni* has two forms of aedeagus, one with slightly shorter struts than the other. The Qitaihe specimens have the shorter struts.

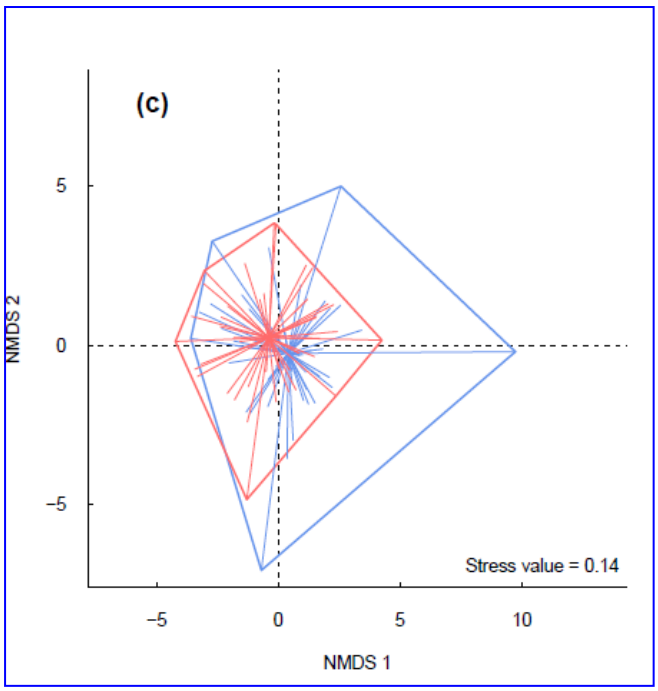
Back in Guangzhou I worked hard on the livestock, and this time got good results. Karyotypes of *Helophorus sibiricus*, *nanus* and *browni* are presented on page 5. *H. orientalis* turns out to be triploid and will be written up by myself and Fenglong, for *Comparative Cytogenetics*. All the *Hydrobius* we found are in the "*rottenbergii-arcticus* group", with shorter parameres, more or less inturned apically. The Heilongjiang material is interesting because its chromosomes are more extensively C-banded than those of most species. And a final happy discovery in the Museum was that Fenglong, unknown to either of us, had taken a single male *Helophorus dracomontanus* Angus in its type locality in Sichuan in 2016. He had the aedeagus photographed and it is included in a review of *Helophorus* s. str. in *Koleopterologische Rundschau* (see page 25).

Finally, it is a great pleasure to thank all my Chinese friends for all their help and hospitality. It really was great to see you all again. Being among you again made what could have been quite a difficult trip (beetlewise) extremely enjoyable.

Received September 2019

BIODIVERSITY AND BEAVERS

The faunas and floras of ten beaver-created ponds and ten ponds not made by beavers were compared in southern Sweden. The species pool for the beaver pools was 15% higher than the other pools, to be compared with 17% for plants. If you don't like multivariate analysis look away now, as here is a Non-metric Multidimensional Scaling showing greater diversity for the beaver ponds (blue) than for the other ponds (red). *Haliplus heydeni* Wehncke, *Agabus striolatus* (Gyllenhal) and *Ilybius ater* (De Geer) were amongst beetles associated with the beaver ponds.



LAW A, LEVANONI O, FOSTER G, ECKE F & WILLBY N J 2019. Are beavers a solution to the freshwater biodiversity crisis? *Diversity and Distributions* doi: 10.1111/ddi.12978 pp. 10.

POLAND 2016

The best way to celebrate a Club meeting is by producing papers about what was found. The senior authors have done well to bring together a mass of records for the area around Chełm. Four hundred and eight species of beetles, 351 of them aquatic, are recorded. They single out for mention in the abstract *Agabus pseudoclypealis* Scholz, *Hygrotus polonicus* (Aubé) and *Berosus geminus* Reiche & Saulcy. Some of us will remember a few of the *Bagous*, 19 species being reported.

BUCZYŃSKI P, PRZEWOŹNY M, ANGUS R, BAMEUL F, BILTON D, BUCZYŃSKA E, FOSTER G, FOSTER S L, GEIJER J, GEREND R, GOSIK R, HENDRICH L, HERBIG C, KÖHLER J, NILSSON A N, SCHEERS K, SMITH M, TARKOWSKI A, TURNER C & WATSON W R C. 2019. Beetles (Coleoptera) of wetlands and other aquatic habitats in the Polish part of the Polesie region found during the Balfour-Browne Club Meeting 2016. *Rocznik Muzeum Górnośląskiego w Bytomiu Przyroda* **25** 1-18.

MIDSUMMER 68°21' NORTH

Beekeeping came to an end with an allergy to stings, causing other insect attacks to be so much worse. The thought of an Arctic mosquito hell came to mind when the President decided on a meeting in Abisko, at 68° North. Would he calculate the date right, i.e. enough heat to melt the ice but not enough to hatch the mosquitoes? Midsummer sounded awfully late…… And would anyone come to a meeting place even more distant than Morocco?

We arrived at Kiruna Airport on midsummer's day (Friday 21 June) where a sign seemed most seductive, resulting in Matt Smith (fresh from his stay in a Jumbo Jet parked at Arlanda Airport) giving us a hair-raising (what's left of them) trip driven sixty miles to Abisko on the back of a dog sledge. Or was it a Volvo? We stopped at the first promising-looking lake near Måvnajohka where the first beetle was *Donacia aquatica* (L.) and the site was already dotted with bottle traps, within which we inserted a message. On dissection I found that one of the *Agabus confinis* (Gyllenhal) there had been full of eggs of the trematode *Allocreadium*, and I later found an *Ilybius picipes* (Kirby) similar infected.

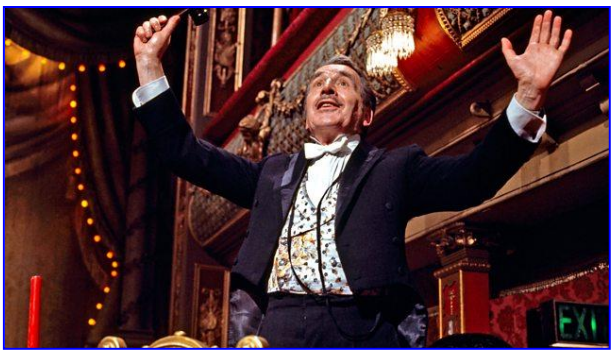
At the Abisko Scientific Research Station an impressive array of water beetlers had turned up – 22 people representing nine countries. Those who arrived on Thursday (20 June) were able to sample a number of interesting sites, often on foot, turning up *Agabus adpressus* Aubé, *A. setulosus* (Sahlberg), *Helophorus sibiricus* and the *raison d'être* of the meeting, the dumpy *Hydrobius arcticus* (Kuwert). Anders began proceedings on the Friday evening with an account of the history of Torne Lappmark, its road and the iron ore railway. The weather had been great on Wednesday and Thursday with no skeeters, but

the weekend's forecast was not so good, the protective rain shadow cast by Norwegian mountains being out-of-order. Midsummer poles had been danced around and the evening entertainment was provided by Daniel Wikslund, who seemed to master all European languages including Italian. He was accompanied by our one and only Joja Geijer on the fiddle.

The following day the Club members duly soaked up the atmosphere in the morning, crossing the Stordalen Nature Reserve bog on a lengthy boardwalk, where the most interesting habitat appeared to be the small pools in amongst rocks, with *Agabus elongatus* (Gyllenhal), *Ilybius vittiger* (Gyllenhal), *Hydroporus acutangulus* Sturm and *H. brevis* F. Sahlberg. The afternoon was scheduled for our seminar so we knew that the weather had to improve. Anders borrowed on the delivery technique of Leonard Sachs (1909-1990), well known in Britain at least as presenter of *The Good Old Days*, a series of concert hall acts inflated in quality only by Sachs' use of elaborate language to introduce each act. Anders began by singing a song proposed as The Club Song [not to be confused with *Edelweiss*, the Club Anthem – see ***Latissimus* 28** 16).

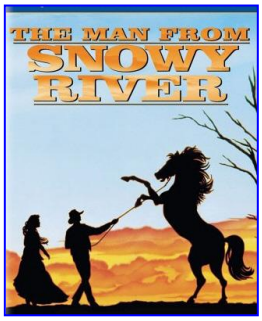
Divers in the pond
You want to catch them
Into your GB Net
And then you let them
Die in alcohol
Always wanting something new[1]

[1]or "noo" if following Frank Sinatra



The "ratiocinative" Lars Hendrich was first up with *Diving Beetles of Alpine Australia and Tasmania*. Chris Watts was producing his review of Australian diving beetles in the 1960s when he could not communicate with Borislav Guéorguiev, resulting in some unfortunate overlaps in descriptions of new species. An Atlas is in development including predictions on changes in beetle populations likely to be caused by climate change and agricultural development. The fauna of the State of Victoria is probably more under threat than that of much of Europe. That review is not to be confused with the Atlas in development, Archostemata, Myxophaga, Adephaga and part of the Polyphaga published in November 2019 by CSIRO Press. Lars highlighted the importance of Alpine areas in south-east Australia typified by snow gums (*Eucalyptus pauciflora* Sieber) and sedge pools and in Tasmania, with endemics such as *Sternopriscus alpinus* Hendrich & Watts, *Platynectes darlingtoni* (Guéorguiev) and the *Platynectes bakewelli* complex. Little research has been done in north-east Tasmania where there are peatlands, some treeless. An interesting problem is posed by an *Exocelina* that has been caught at light. It must be parthenogenetic. The authorities will not allow its export, rather

an over-reaction considering that far worse things happen in Europe all the time. At this point Anders recalled the film "The Man from Snowy River".



The "verisimilitudinous" Helena Shaverdo followed on concerning the Copelatinae of Australia. There are 743 species described in this the second largest subfamily of Dytiscidae, with only one tribe of eight genera. *Exocelina* is very variable, for example, some species having modified antennae and some being subterranean. In 2012, 94 species had been described but by 2019 196 species have been described, with 140 in New Guinea [with Lars expecting to double the Australian list]. This is the result of a major radiation four million years ago in association with the "Towering Orogeny" (***Latissimus* 26** 36). *Copelatus* is the most speciose dytiscid genus, with 447 species known currently, and probably 90 new species to be described in New Guinea and Fiji. Helena is using genetics and genitalia to redevelop the species groups, which are currently too heavily dependent on the obvious but misleading elytral striae.

The "irrefragable" David Bilton launched into diversity and endemism in water beetles in the South African Cape. Twenty per cent of the flora of sub-Saharan Africa is in the south-west corner around the Cape. The region is one of the most diverse outside the tropics, with lots of small scale endemisms in single sites or drainage systems with rainfall regimes established five million years ago. The sea has buffered the climatic fluctuations with narrow range endemics able to survive by moving up and down mountains. The fauna includes the southernmost *Agabus* on earth, from the Agulhas Plain. About sixty species have been described recently In the Fynbos, half of them locally endemic. Roibos tea planting is threatening temporary waters in some parts. At nearly 4 mm long a new species of torrindicolid in *Delevea* is possibly the largest myxophagan in the world. The Fynbos fauna sharply contrasts with low endemicity of eastern coastal Africa though there species richness is very high. In the Karoo Mountains *Tikloshanes* has been found, including its larva. The area was probably much drier in the early Pleistocene, eliminating its endemics, unlike on the Cape. The biology of the Aspidytidae have recently been reviewed (see ***Latissimus* 43** 3). The study of old museum material shows how the original habitat on the Cape, with *Capelatus*, (***Latissimus* 36** 37) a genus related to *Exocelina* but sister to *Liopterus*, and otherwise very isolated, has been lost to shantytown. Finally, the diversity of the Prosthetopinae was reviewed as a group with a very wide ecological range, from fast streams, mountain rockpools and damp terrestrial habitats.

Then came the "pulchritudinous" Johannes Bergsten's bid to replace David Attenborough, *Madagascar under the surface – the Movie*, using his own footage from 2018: travelling by plane then boat, then dugout canoe, then terrible roads, a motorbike, the Indri and other lemurs, tenreks, chameleons, frogs, millipedes, net-casting spiders, nasute termites, the hammerhead flatworm, a freshwater crab, a terrestrial hermit crab, night-collecting for whirligigs, Moon Moths, building furniture out of the jungle, roasting coffee, cooking rice (see on), trench feet and a leech in the eye. Was there any time for beetles? The Masoala National Park had a new bidessine genus with footage showing it in running water, three-coloured alive but two-coloured when dried out and almost black-and-white. He also showed us the sixth terrestrial diving beetle in the world, found in leaf litter, and either derived from the Malagasy *Uvarus* or from the Indian *Geodessus*. And three new *Copelatus* and two new *Madaglymbus* from the forest floor (see also ***Latissimus* 24** 19). Of the whirligigs *Heterogyrus milloti* Legros (***Latissimus* 40** 1-2) was found to be the oldest link to the non-Madagascan fauna, also linked to subfossil material.

The seminar was a great example of Good New Days, never mind Good Old Days, with water beetles and beetlers taking their rightful positions in modern science. The official

programme ended there – the scheduled "plentitudinous" GNF could wait, but there were three important final items.

1. Joja was awarded the Ierse Kevers Trophy for his performance with the fiddle, later demonstrating expertise on the flute – or was it a recorder? In the absence of Robert Angus, still in China, the award was presented by the "Member", David Bilton.
2. Advertisement of the International Congress of Entomology, to be held in Helsinki July 2020. This will include a Symposium "Monitoring freshwater biodiversity – taxonomy, systematics and biogeography of water beetles". Registration by the end of 2019 costs €595.
3. It had stopped raining!

There followed the Club Dinner, the food being provided by a local hostel. Some resisted the temptation to celebrate the day early, instead going out again in the evening. If you are not used to continuous daylight the feeling is strange – no matter what you know you keep feeling that you must hurry up to collect more samples before it gets dark – even when the sun breaks through the clouds. Our carload travelled just east of Miellejohka where we did not find any additional species of interest – but there was a palsa fen, right beside the road – much smaller in scale than the "pingo fens" of Norfolk, but showing a similar origin, with *Dryas*-covered ramparts surrounding a small circular pond and new-moon-shaped segments around about.

The following day the whole group travelled to Gearggejohka, west of Låktatjåkka. with streams running from the Kiruna-Narvik railway down into wooded areas with streamfed ponds. There we found a pond entirely occupied by Pays-Bas beetlers, attracted by *Hydroporus lapponum* (Gyllenhal) and other beetles that had mostly been removed before our arrival. Returning to the road a stoat was seen dragging a lemming, and this gave the potential for a new game, Gert and the Stoat, rather like *Crystal Maze* with bystanders screaming advice on how to spot it hiding right under your feet.

Collecting strategies proved of interest. Some people tend to search for a likely spot and then sample it over and over again. Others laugh at this and spend more time on the move, rarely netting one spot more than once. It seemed that in the far north the laughers

are right but some might claim that repeated sampling of a site is essential in southern Europe at least. Does repeated sampling success vary with latitude?

We moved onto Björkliden, a sports complex with a restaurant. From there we could reach alpine ponds in tundra on the edge of the tree zone. The species list for this area will probably prove the longest, with *Agabus zetterstedti* Thomson, *Ilybius angustior*, *I. crassus* Thomson and *I. picipes* in fen areas and *Boreonectes multilineatus* (Falkenström) in open water. This was the site at which I at last got female *angustior* and *picipes* together, differentiated only by their vulval sclerites, as was originally detected by Sven Persson (1985. *Ilybius angustior* (Gyllenhal) and *I. picipes* (Kirby) as distinct, holarctic species (Coleoptera: Dytiscidae). *Entomologica Scandinavica* **16** 265-268).

For most, the meeting ended at Björkliden, with an enriched pond on the golf course (yes, even in the Arctic!) getting the full treatment. It had first been worked on 20 June, when *Helophorus sibiricus* had been found. Apart from the *Hydrobius* (apparently, *H. fuscipes* (L.) is in the area as well as *H. arcticus*) the only other hydrophiloids were *Helophorus glacialis* Villa & Villa and *H. lapponicus* Thomson, though there was a rumour of a *Laccobius*.

Anders is thanked hugely for his work in getting us all into the Arctic, and with coping with all the changes in accommodation needs. He produced all the right provisions but sometimes his help with cooking was not appreciated - “Please don’t stir it. I am an expert in rice.” The speakers at our seminar are also thanked for making the effort. Back in the south of Sweden a tour around Venngarn, a royal castle and estate near to Arlanda Airport, completed the trip. It was when the nightingale sung that the mosquito moved in.

MADAGASCAR *COPELATUS*

Thirteen species of *Copelatus* are recognised, of which five are newly described from Madagascar, based on both morphology and DNA. These are species with fewer than ten and a bit elytral striae. The opportunity is taken to move some taxa previously listed as *Copelatus* – *Exocelina subjecta* (Sharp) a New Caledonian species, mislabelled as from Madagascar and with the synonym *Copelatus bilineatus* Guignot, *Madaglymbus apicalis* (Fairmaire) and *M. unguicularis* (Régimbart). The habitus photographs demonstrate the remarkable variation in appearance in this group. The intriguing title of the second paper actually says it all. Three new species in each of *Copelatus* and *Madaglymbus* are described from the forest floor. *M. menalamba* was filmed and shown to be adept at running on the forest floor. The film is in supplementary material.

RANARILALATIANA T, RAVAOMANARIVO L H R & BERGSTEN J 2019. Taxonomic revision of the genus *Copelatus* of Madagascar (Coleoptera, Dytiscidae, Copelatinae): the non-*erichsonii* group species. *ZooKeys* **869** 19-90.

RANARILALATIANA T & BERGSTEN J 2019. Discovery of a specialist Copelatinae fauna on Madagascar: highly ephemeral tropical forest floor depression as an overlooked habitat for diving beetles (Coleoptera, Dytiscidae). *ZooKeys* **871** 89-118.

AUSTRALIAN *SCIRTES*

This must be welcomed as a substantial genetic analysis of Scirtidae, exploring the relationships between 26 species of *Scirtes* Illiger, two of them newly described, *Ora* Clark and *Exochomoscirtes* Pic. A strong feature of this paper is the illustration of the prehensors of the female reproductive tract.

WATTS C H S, COOPER S J B & SAINT K M 2017. Review of Australian *Scirtes* Illiger, *Ora* Clark and *Exochomoscirtes* Pic (Coleoptera: Scirtidae) including descriptions of new species, new groups and a multi-gene molecular phylogeny of Australian and non-Australian species. *Zootaxa* **4347** 511-532.

MAYO *OCHTHEBIUS NILSSONI*

Some members* may remember the Club meeting in the Burren in Ireland in 2010 when we juxtaposed *Ochthebius nilssoni* to its namesake, our revered President. This was a year when *nilssoni* was most abundant, known from five localities in County Clare and South-east Galway. This species was found in 2011 in Lough Carra, County Mayo, a significant extension of its known range. This paper goes well beyond reporting this new site, in particular exploring what is generally called marl, which is more than an inorganic precipitate of calcium carbonate, since it contains a diatom and cyanobacterial community. This has been termed Krustenstein, the Irish version containing the cyanobacterium *Schizothrix fasciculata* Gomont. This paper politely disposes of a record for *O. nanus* Stephens in Lough Carra (McGoff & Irvine, 2009, ***Latissimus* 31** 15).

NELSON B, O CONNOR Á, FOSTER G N, DODDY P & RODEN C 2019. A review of *Ochthebius nilssoni* Hebauer (Coleoptera: Hydraenidae) in western Ireland including a first report from Lough Carra. *Irish Naturalists' Journal* **36** 117-122.

*basically, anyone who reads this.

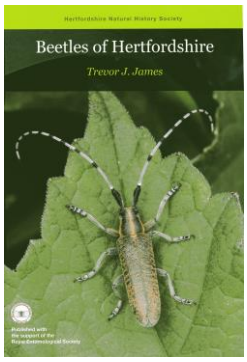
BROWSING SECTION – *DANGER ATMOSPHÉRIQUE*

Searching around for biological notes of *Hydrocyphon deflexicollis* these observations by Henri Tournier came to light.

Mais de tous, les Hydrocyphon *sont bien assurément ceux dont le genre de vie les plus remarquable. Á l'approche d'un danger atmosphérique, soit avant un vent violent, soit lorsque le ciel sombre menace de répandre sur la terre une forte pluie, ces petits êtres quittent promptement les buissons de la rive, volent rapidement sur une pierre engagée en partie dans la rivière ou le sable baigné par l'eau, et vont chercher un refuge dans l'onde qui leu a servi de berceau. Ils ne mouillent point leurs téguments, comme le croit M. Mulsant, mais à la façon des* Parnus *[*Dryops*], entrainent avex eux un globule d'air qui les entoure, et qui, se dissipant à la surface de l'eau lorqu'ils croient pouvoir sans danger de leur retraite, les laisse parfaitement secs.*

TOURNIER H 1868. *Description des Dascillidés du Bassin de Léman*. Paris: Bâle & Geneve.

HERTFORDSHIRE UPDATE



This book was reviewed in ***Latissimus* 42**. It has borne fruit, bringing forward a lot of new records, mostly of saproxylic beetles. Water beetles include *Peltodytes caesus* (Duftschmid), *Liopterus haemorrhoidalis* (Fab.) caught at MV light, three hydrophilid species, and *Prionocyphon serricornis* (Müller).

JAMES T J 2019. Beetles of Hertfordshire – corrections and amendments, with an update on additional species, and other important new records. *Transactions of the Hertfordshire Natural History Society* **51** 11-30.

BODY-SIZE AND URBANISATION

This data-mining research indicates a size-biased species loss in urban areas, agreeing with the basic theory that the additional warmth will favour smaller animals, but with exceptions based on larger species dependent on their size for dispersal. The larger species are Orthoptera, macro-moths and butterflies and examples of urbanisation favouring smaller species are spiders, water fleas, ground beetles, and weevils. The temperature-size response was not significant for rotifers or ostracods. Surely there are water beetle studies that can be or have been tested in this way?

MERCKX T *et al*. 2018. Body-size shifts in aquatic and terrestrial urban communities. *Nature* doi.org/10.1038/s41586-018-0140-0

MONTANE *RHANTUS*

The Venezuelan table-top mountains, the tepui, are now known for their water beetle interest (see ***Latissimus* 42** 25). *Rhantus lattkei* and *R. marahuaca* are described from the Marahuaca Tepui. *R. marahuaca* is "normally" sized for a *Rhantus*, 9.2 mm long, whereas *R. lattkei*, at 6.5 mm long, must be one of the smallest *Rhantus* known. The wings of lattkei are vestigial. The capital of Colombia, Bogotá, lies on a high plain on which has been found a new species, *R. bogotensis,* described in the second paper. It compared with *R. franzi* Balke, *R. andinus* Balke and *R. vicinus* (Aubé). *R. blancasi* was described from the Pasco region of Andean Peru at 4,600 m. asl. The new records are from the Cuzco and Junin regions. The habitat illustrated is at 4,850 m in Canchis Province. The male inner fore claw is unusual with a large tooth, and the median lobe of the aedeagus has a hook at its tip.

BALKE M, GARCIA M & HENDRICH L 2019. Two new species of diving beetles from the Duida-Marahuaca Tepui in Venezuela (Coleoptera: Dytiscidae: Colymbetinae). *Russian Entomological Journal* **28** 258-262.

BALKE M, OSPINA-TORRES R, MEGNA Y S, LAYTHON M & HENDRICH L 2019. A new species of *Rhantus* diving beetles from the wetlands of the City of Bogota and surroundings (Coleoptera, Dytiscidae, Colymbetinae). *Alpine Entomology* **3** 169-174.

BALKE M. SUAREZ-MEGNA Y, HENDRICH L, ZENTENO N & FIGUEROA L. 2019. New records for the Peruvian high-altitude diving beetle *Rhantus blancas*i Guignot, 1955 (Coleoptera, Dytiscidae, Colymbetinae). *Check List* **15** (5) 941-944.

STREAM "THERMOPHILIZATION"

Over 12,000 invertebrate samples taken from March to May in 1990 to 2014 were analysed from Austria, the Czech Republic, Germany and Luxembourg. Global warming over this period was moderate, about 0.5 °C, but strong "reorganisation" was detected – total abundance went up by 36%, species richness increased by 39% and the share of the total catch shifted to warmth-loving species. Unfortunately, the supplementary data do not seem to include information on any particular group of invertebrates but the results, although muted, speak for themselves. The corresponding author is Francesca Pilotto.

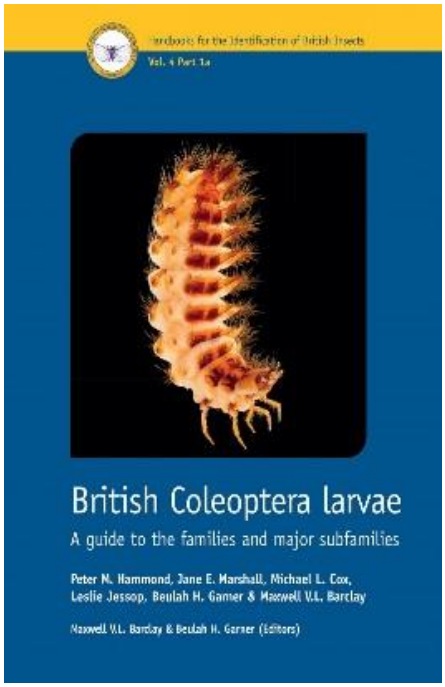
HAASE P, PILOTTO F, LI F, SUNDERMANN A, LORENZ A W, TONKIN J D & STOLL S 2019. Moderate warming over the past 25 years has already reorganized stream invertebrate communities. *Science of the Total Environment* **658** 1531-1538.

OMAN WATER BEETLES

This comprehensive survey of Oman resulted in 73 species being known. Four new species are described from the Al Hajar mountains, three hydraenids and a hydrophilid, *Agraphydrus elongatus*. Three other species are new for the Arabian Peninsula:- *Hydroglyphus farquharensis* (Scott), *Hydraena quadricollis* Wollaston and an *Enochrus*, probably *quadrinotatus* (Guillebeau). A checklist is provided for the Arabian Peninsula. The habitats look quite "testing".

RIBERA I, HERNANDO C & CIESLAK A 2019. Aquatic Coleoptera of North Oman, with description of new species of Hydraenidae and Hydrophilidae. *Acta entomologica Musei Nationalis Pragae* **59** 253-272.

BRITISH BEETLE LARVAE



📖 BARCLAY M V L & GARNER B H (eds) 2019. British Coleoptera larvae. A guide to the families and major subfamilies. *Handbooks for the Identification of British Insects* **4** (1a). St Albans: Royal Entomological Society. ISBN 978 1 910159 03 3. About £40 plus delivery.

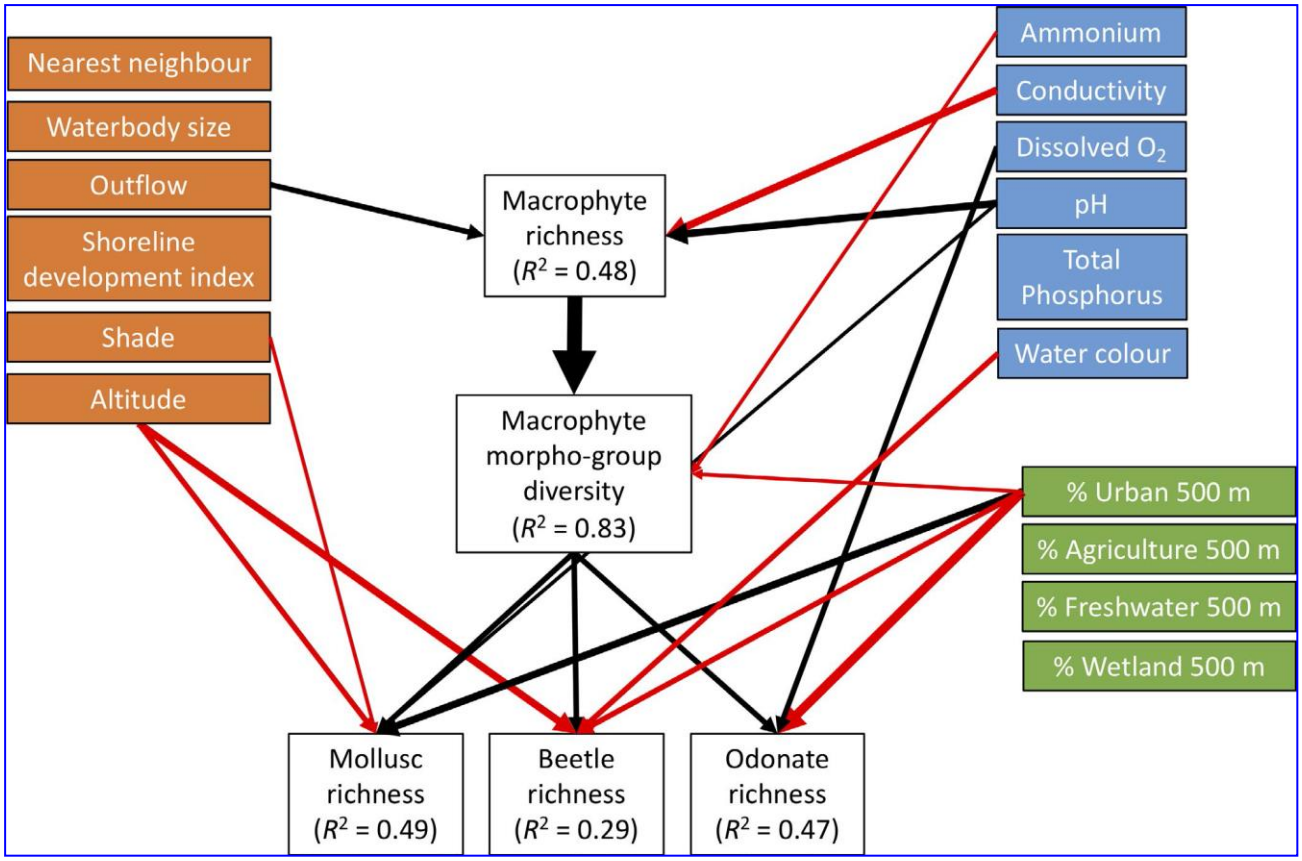
The editors refer to a "more than 40 year pupation" for this Handbook, and it was certainly mooted in the early 1970s, the inspiration being the Fritz van Emden's collection of larvae. In Chapter 7 of the original *A Coleopterist's Handbook*, published in 1954, Jack Balfour-Browne and others remarked that "the collector of Lepidoptera spends at least as much time in searching for the immature as for the mature stages". With a very few exceptions, notably Roy Crowson as well as Fritz van Emden, this has never been true of coleopterists – but then we do not need to rear larvae to get adults in perfect condition. Roy's interest lay in understanding the evolution of beetles, whereas here the correct identification of a larva, at least assigning it to the correct family, is the main aim. So, does this handbook work, i.e. how likely are you to get the family wrong?

Colour photographs of larvae from van Emden's collection were taken by Harry Taylor: the trouble is here that the colour here is much the same throughout, off white to brown. Boiling is one of the methods recommended to prevent discolouration and it may well be that these larvae have all been treated in the same way. But, for example, *Adalia bipunctata* (L.) as in Plate 41 simply is nothing like this in life, and one itches to see more modern life studies. The only life study, Clive Turner's Plate 68 of a pure white *Metoecus paradoxus* (L.) larva, is an improvement. If one were to photograph *Platambus maculatus* (L.) one would make sure to show the Mask of Zorro on the head, not evident in the views in Plate 3. Alongside van Emden's material in the Natural History Museum, London are Jack Balfour-Browne's rearings, mainly of Dytiscidae, and similarly overdue some work.

Looking at water beetles in some detail the first family is called Hygrobiidae following the latest Palaearctic Catalogue. The problem is that there is a lengthy couplet describing all characters for *Hygrobia* except the most obvious and useful one, the three-pronged tail, the side view provided failing to show it. The treatment of Haliplidae fails to mention Bernhard van Vondel's 1997 comprehensive key to larvae in the *Süßwasserfauna von Mitteleuropa* series. The family Dytiscidae is claimed to have 28 genera but this is now 30. Anders Nilsson's contribution to the 1996 *Aquatic insects of North Europe* doesn't get cited even though it remains the quickest fix for running down a water beetle larva to genus. Under Scirtidae it is noted that Bernhard Klausnitzer keyed all British genera except *Odeles* in his works published in 1975, 1977, and 1994. But that's because he didn't split *Odeles* from *Elodes* until 2004! And, again, a key work in *Süßwasserfauna von Mitteleuropa,* Bernhard Klausnitzer's major work on Scirtidae, published 2009, is ignored, also the case for the Heteroceridae, with no mention of the works of Alessandro Mascagni and Sasha Sazhnev.

The wealth of line illustrations is such that one is unlikely to be led astray in giving a family name to an unknown water beetle larva, and that presumably applies terrestrially. One can only hope that the coverage of the literature for terrestrial beetles is more complete and up-to-date than it is for aquatics.

LAKE VEGETATION OFFERS WARNING SYSTEM



The Hydroscape project generated data for water margin macrophyte plants, molluscs, dragonflies and water beetles in three systems – urban land around Glasgow, uplands in the Lake District and lowland in Norfolk. The model can best be summarised by one of Alan Law's flowcharts. You can see here that water beetles played their part, though with a low significance level (the 0.29) compared to other groups. The relatively poor correlation may be explained by the high species richness, within which the balance between habitat specialists and generalists could not be taken into account. The basic conclusion is that the structure and diversity of shoreline macrophyte plants can provide a rapid and cost-effective measure of conservation status and needs.

LAW A, BAKER A, SAYER C, FOSTER G N, GUNN I D M, TAYLOR P, PATTISON Z, BLAIKIE J & WILLBY N J 2019. The effectiveness of aquatic plants as surrogates for wider biodiversity in standing fresh water. *Freshwater Biology* doi: 10.1111/fwb.13369

CHRYSOMELIDAE PHYLOGENY

This is a preliminary study of relationships using mitochondrial DNA. The five major lineages already recognised on the basis of morphology are supported. There are three clades, Chrysomelinae, (Bruchinae + Sagrinae) + (Criocerinae + Donaciinae), and Spilopyrinae, plus two "deep" lineages, *Timarcha* and Synetinae. It looks as if monocotyledous plants were colonised twice, but a lot more needs to be done to establish how the evolution of the group fits with the evolution of angiosperms. Fossils have recently been discovered, and these could be used to fix the time tree. The correspondent is Xing-Ke Yang.

NIE R-I, ANDÚJAR C, GOMEZ-RODRÍGUEZ C, BAI M, XUE H-J, TANG M, YANG C-T, TANG P, YANG X-K & VOGLER A 2019. The phylogeny of leaf beetles (Chrysomelidae) inferred from mitochondrial genomes. *Systematic Entomology* doi: 10.1111/syen.12387 17 pp.

MONGOLIAN EXPERTS

This welcome coming together of experts has done much to update what we know about the Mongolian fauna. Twenty-eight species are newly recorded from Mongolia, with some of them well known to the western European water beetler – *Acilius sulcatus* (L.), *Agabus amoenus* (Solsky), *A. blatta* Jakovlev, *A. japonicus continentalis* Guéorguiev, *A. moestus* (Curtis), *A. thomsoni* (Sahlberg), *Bidessus nasutus* Sharp, *Colymbetes dolabratus* (Paykull), *Dytiscus circumcinctus* Ahrens, *Hydaticus aruspex* Clark, *H. continentalis* Balfour-Browne, *Hydroglyphus trassaerti* (Feng), *Hygrotus confluens* (Fab.), *Laccornis oblongus* (Stephens), *Nebrioporus assimilis* (Fab.), *Rhantus rufus* Zimmermann, *Helophorus bergrothi* Sahlberg, *H. kyzanovskii* Angus, *H. timidus* Motschulsky, *Crenitis apicalis* (Reitter), *Enochrus coarctatus* (Gredler), *E. melanocephalus* (Olivier), *E. testaceus* (Fab.), *Laccobius syriacus* Guillebeau, *Paracymus chalceolus* Solsky, *Ochthebius joosti* Jäch, *Augyles obliteratus* (Fab.) and *Heterocerus marginatus* (Fab.). Six species are known only from Mongolia – *Gyrinus sugunurensis* Nilsson, *Agabus kaszabi* Guéorguiev, *Helophorus kaszabianus* Angus, *H. parajacutus* Angus, *Ochthebius mongolensis* Janssens, and *O. mongolicus* Janssens. The paper ends with a checklist of 200 species – Gyrinidae 7 species; Haliplidae 10; Noteridae – just *clavicornis* (De Geer); Dytiscidae 104; Helophoridae 19; Hydrophilidae 33; Hydraenidae 16; Heteroceridae 10. To these should be added one georissid and three scirtids. No species of Spercheidae, Dryopidae, Elmidae, Hydrochidae, Limnichidae and Psephenidae have been recorded from Mongolia. The author for correspondence is Helena Shaverdo.

PROKIN A A, CHULUUNBAATAR G, ANGUS R B, JÄCH M A, PYOTR N P, RYNDEVICH S K, BYAMBANTAM E, SAZHNEV A S, HÁJEK J & SHAVERDO H 2019. New records of water beetles (Coleoptera: Gyrinidae, Haliplidae, Noteridae, Dytiscidae, Helophoridae, Hydrophilidae, Hydraenidae) and shore beetles (Coleoptera: Heteroceridae) of Mongolia. *Aquatic Insects* doi.org/10.1080/01650424.2019.1651870

DISJUNCT HYDROPHILIDS

This paper has only recently been detected – and we are grateful to Paweł Buczyński for drawing it to attention. *Laccobius decorus* (Gyllenhal) and *Cercyon impressus* (Sturm) supposedly have disjunct distributions. The map of *C. impressus* shows a large gap in the Palaearctic covering Denmark, Sweden, Poland, the Baltic States and Byelorussia. Unfortunately this is simply not so as the latest Palaearctic catalogue indicates that there are records for all of these countries. The map for *L. decorus*, seen here, is more accurate, with the population around the Caspian separated from records running from Crimea to Mongolia. The point apparently being made is that we need a way of describing distributions based on biotope as well as geographical zone. Isn't it good that these days we have real dots extending into Asia? In the past we often made do with a weak line and a question mark.

SHATROVSKIY A 2016. Zonality in the areals' nomenclature of water scavenger beetles (Coleoptera, Hydrophilidae). *Ukrainian Entomological Journal* **1**-**2** (11) 85-90. [in Ukrainian]

LÖBL I & LÖBL D (eds) 2015. *Catalogue of Palaearctic Coleoptera. Volume* **2/1**. *Hydrophiloidea-Staphylinoidea.* Leiden: Brill.

***BIDESSUS* SHARP 1880**

Hans Fery (2013) commented "*Bidessus* SHARP, 1880d: cxlviii; type species *Dytiscus* ***geminus*** Fabricius, 1792 [now in ***Hydroglyphus*** MOTSCHULSKY, 1853]; designation of type species not in accordance with prevailing usage of both generic names; subsequent designation of type species for *Bidessus* Sharp, 1882 by F. BALFOUR-BROWNE (1936) … in need of conservation." Following on Case 3744 (Bousquet & Bouchard, 2018) Hans (2019 – see also ***Latissimus* 43** 8) announced his intention to request suppression of the name *Dytiscus parvulus* Müller, thus partly clearing the way for conserving current usage, but based on Sharp's 1880 publication, not on the 1882 *magnum opus*. *D. parvulus* could be any one of at least four species as either Müller did not keep a collection or it is lost. Perhaps one should make another point – Sharp always turns out to be right in the end? But the Commission might not see that as evidence.

FERY H & GRYGIER M J 2019. Comment (Case 3744) – alternative proposals to conserve usage of *Bidessus* Sharp, 1880, and newly proposed suppression of *Dytiscus parvulus* Müller, 1776 (Coleoptera, Dytiscidae, Bidessini). *Bulletin of Zoological Nomenclature* **76** 62-67.

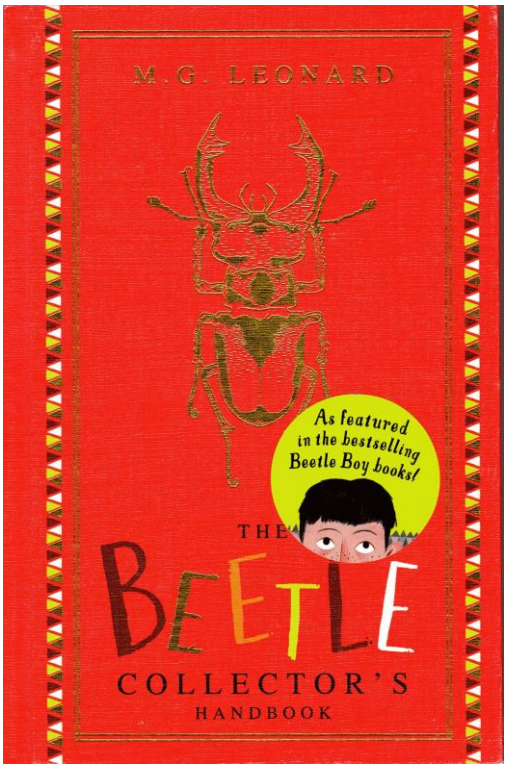
BALFOUR-BROWNE, F. 1936. Systematic notes upon British aquatic Coleoptera. Part X. *Hydrovatus*, *Bidessus* and *Hyphydrus*. *Entomologist's Monthly Magazine* **72** 28-31.

BOUSQUET Y & BOUCHARD P 2018. Case 3744 – *Bidessus* Sharp, 1880 (Coleoptera, Dytiscidae, Bidessini): proposed conservation of usage by designation of *Dytiscus unistriatus* Goeze, 1777 as the type species. *Bulletin of Zoological Nomenclature* **75** 32-35.

FERY H 2013. David Sharp (1840-1922). *A bibliography and a catalogue of his insect names*. Skövnöpparn, Umeå.

SHARP D 1880. Avis préliminaire d'une nouvelle classification de la famille des Dytiscidae. *Annales de la Société Entomologique de Belgique* **23** *Comptes Rendus* cxlvii-cli.

AQUA SCUTTLERS



📖 LEONARD M G 2018. *The beetle collector's handbook*. London: Scholastic Ltd. ISBN 978 1407 18566 8 about £7-£12 on the usual websites.

You may not learn much about water beetles from this book but it is one of the better books currently on offer for enthusing the next generation (or, for many of us, the next but one). On page 9 one gets the impression that the author is Monty G. Leonard but it is in fact Maya Leonard who claims the copyright. She has produced several books about beetles for young people, this one being good enough to place on the shelf camouflaged as a working document. Its cover echoes the 1908 *Young Beetle-collector's Handbook* by Ernst Hofmann. Water beetles get introduced as Aqua Scuttlers, a name not likely to catch on, and a couple of comments on them are a little odd, that whirligigs live on steadily flowing water, because that brings fresh food (when what it really brings is oxygen for the larvae), and that the hairs on the back legs of great diving beetles aid in floating as well as in diving. If there has to be a serious criticism then the trouble is that most of the beetles chosen for discussion are most likely to be seen in national museums or in coffee table books. The real world could prove a little disappointing.

SPHAERIDIUM KEY

Welcome Arno van Berge Henegouwen back to coleopterology along with his new-found love of stacking photography. In the Irish/British Atlas 2, the possibility of *Sphaeridium substriatum* Faldermann (below, courtesy of AvBH) was indicated in the first table. There are two possible records. Joseph Chappell (1830-1896) an enthusiastic, and latterly one-legged, Mancunian had a pair of *substriatum* in his collection in Edinburgh. If one assumes that the No. 9 bus has stuck to the same route on Jersey since 1984 then it seems likely that Walter Le Quesne's female specimen in the Natural History Museum, London was taken on the heathland in the north-west of the island rather than on the extensive dunes and marshland further south, i.e. the bus does not go there! A new key is provided, including *substriatum*, but the high resolution images should speak for themselves.

VAN BERGE HENEGOUWEN A & FOSTER G N 2019. A new illustrated key to the British species of *Sphaeridium*, with the possibility of *S. substriatum* Faldermann, 1839, as a British species (Hydrophilidae: Sphaeridiinae). *The Coleopterist* **28** 1-12.

BENHS ANNUAL EXHIBITION

A good crop of beetle records was compiled by Peter Hodge from exhibits at the 2018 exhibition of the British Entomology and Natural History Society. But very few water beetles – *Graphoderus cinereus* (L.) from West Kent by Tristan Bantock, and *Bagous lutulosus* (Gyllenhal) from East Sussex by Peter himself.

BANTOCK T 2019. p. 130 in Coleoptera (compiler P.J. Hodge). 2018 Annual Exhibition. Conway Hall, Holborn, London WC1R 4RL – 3 November 2018. *British Journal of Entomology & Natural History* **32** (2) 129-140.

HODGE P J 2019. p. 133 in Coleoptera (compiler P.J. Hodge). 2018 Annual Exhibition. Conway Hall, Holborn, London WC1R 4RL – 3 November 2018. *British Journal of Entomology & Natural History* **32** (2) 129-140.

ALBANIAN RIVER FAUNA

The Vjosa is one of the last fast and unimpeded rivers in Europe, soon to be converted for hydropower. Thirty-four beetle species are reported, most notably the large elmid *Potamophilus acuminatus* (Fab.). Other species of interest are three species of *Georissus*, three *Ochthebius*, four *Hydraena*, *Dryops subincanus* Kiesenwetter, *Elmis rioloides* Kuwert, *Augyles pruinosus* (Kiesenwetter) and *A. flavidus* (Rossi).

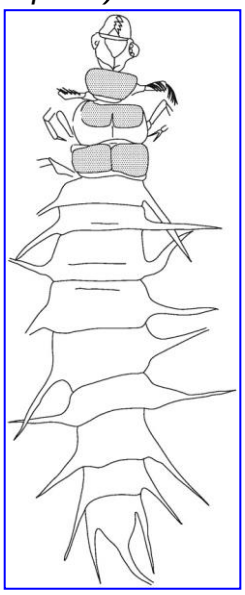
GRAF W, GRABOWSKI M, HESS M, HECKES U, RABITSCH W & VITECEK S 2018. Contribution to the knowledge of aquatic invertebrate fauna of the Vjosa in Albania. *Acta ZooBot Austria*, **155**, 135-153.

HYDROPHILOIDEA CATALOGUE ONLINE

Have we seen the last of those weighty and expensive tomes that quickly go out-of-date? Check out the latest online catalogue.

PRZEWOŹNY, M. 2019. *Catalogue of Palaearctic Hydrophiloidea (Coleoptera).* Internet version 2019-01-01. http://www.waterbeetles.eu.

PERMIAN MYXOPHAGAN LARVA?



The spoils of the abandoned copper mines of Kargala in the Orenburg Oblast have yielded fossil insects since 1929. This larva matches nothing extant nor anything in the Permian, but it occurred at the time of the Schizophormorpha, whose larvae are otherwise unknown. These larvae are obviously aquatic with the front legs bearing long swimming hairs and the first nine abdominal segments having what must be tracheal gills.

PROKIN A A, PONOMARENKO A G & KIREJTSHUK A G 2019. Description of a larva of *Kargalarva permosialis* gen. et. sp. nov. (Coleoptera: Schizophoromorpha) from the Kargala fossil site. *Paleontological Journal* **53** (3) 282-286.

HYDROCANTHUS LARVA

The larva of *Hydrocanthus debilis* and two other species of uncertain identity have been described in the past, but this is the first time that all three instars of a *Hydrocanthus* have been described in detail. *H. sharpi* is a Neotropical species known north to Mexico. The descriptions are based on specimens from Argentina.

URCOLA J I, BENETTI C J, ALARIE Y, TORRES P L M & MICHAT M C 2019. Morphology and chaetotaxy of the instars of *Hydrocanthus sharpi* Zimmermann, 1928 (Coleoptera: Noteridae). *The Coleopterists Bulletin* **73** 611-620.

HETEROCERUS FENESTRATUS GOES SOUTH

Some *Heterocerus* are well known to have unusually wide natural distributions. Two specimens of *fenestratus* from Chile, one found in 1961, the other in 2015, pose the question as to how they got there. *H. fenestratus* occurred in the USA in Washington about 20,000 years ago, being identified as *Lapsus tristis* Mannerheim, 1853, a synonym of *fenestratus* (see Mascagni 1993; King *et al.* 2011) and in Worcestershire about 42,000 years ago (Coope *et al*. 1961). So the Chilean population could have come through the Bering corridor naturally. Or it could have been naturalised recently. Sasha notes examples of hydrophilids that have been introduced from the Palaearctic, and also recalls *Augyles nepalensis* Mascagni arriving in Moscow in a batch of sesame seeds.

SAZHNEV A S 2019. A new synonym of *Heterocerus fenestratus* (Thunberg, 1784) (Coleoptera: Heteroceridae) and its first records for South Hemisphere. *Zootaxa* **4624** 589-592.

ASHWORTH A C & NELSON R E 2014. The paleoenvironment of the Olympia beds based on fossil beetles from Discovery Park, Seattle, Washington, U.S.A. *Quaternary International* **341** 243-254.

COOPE G R, SHOTTON F W & STRACHAN I 1961. A Late Pleistocene fauna and flora from Upton Warren, Worcestershire. *Philosophical Transactions of the Royal Society of London* **B244** 379-421.

KING J G, STARR J R & LAGO P K 2011. Molecular data resolves relationships within Heteroceridae (Coleoptera: Dryopoidea). *Systematic Entomology* **36** 435-445.

MASCAGNI A 1993. La collezione eteroceridologica de Carnegie Museum of Natural History di Pittsburgh (U.S.A.), con descrizione di quattro nuovo specie (Coleoptera: Heteroceridae). *Opuscula Zoologica Fluminensia* **103** 1-12.

BELARUS LAKES

This is a D. Sc. thesis based on multivariate analysis of vegetation and insects of raised bogs. Most of the beetles are terrestrial, but one can discern *Contacyphon kongsbergensis* Munster, *C*. *padi* (L.), *C. pubescens* (Fab.), *Plateumaris discolor* (Panzer), and *Limnobaris t-album* (L.). There is a useful set of references in English. There are no contact details.

SUSHKO H H 2019. [Ecological-taxonomical structure and dynamics of entomocomplexes of the peat bogs of Belarussian Lakeland]. D. Sc. Thesis. Minsk.

BELARUS STREAMS

One hundred and fifty-one insect taxa are recorded from the Dvina system. These include 32 beetle taxa such as *Gyrinus aeratus* Stephens, *G. natator* (L.), *Macronychus quadrituberculatus* (Müller), *Riolus nitens* (Müller) and *Potamophilus acuminatus* (Fab.).

MOROZ M D 2018. The aquatic insects of the Zapadnaya Dvina river tributaries, Belarus. *Euroasian Entomological Journal* **16** 201-222. (In Russian with English abstract)

BRITISH THREAT & RARITY STATUSES

This is Part 1 of a review of the statues of all beetles in Britain. It includes 1,500 species, with Part 2 promising to cover another 588. Statuses are clearly divided into those based on threat and those on rarity. Most wetland Coleoptera are covered but not the weevils. *Ochthebius alpinus* (Ieniştea), *Hydrobius rottenbergii* Gerhardt and *H. subrotundus* Stephens are not evaluated. *O. alpinus* should have been easy enough, another Speyside rarity, but not covering the *Hydrobius* taxa is just as well given continuing uncertainties. However, it seems likely that none of the *Hydrobius* will be considered under threat and probably not rare either. *O. fallaciosus* Ganglbauer has been ignored.

LANE S A, DREWITT A L & ALLEN A J 2019. IUCN Threat Status and British rarity status for British Coleoptera: Part 1. *The Coleopterist* **28** 71-100.

NEW NORFOLK RECORDS

The new records result from fieldwork in 2017 and 2018. *Bagous lutulosus* (Gyllenhal) at East Winch Common is regarded as the first record of this species in Norfolk, an earlier mysterious record almost certainly referring to *B. lutosus* (Gyllenhal). A record for *Rhantus suturellus* (Harris) has been redetermined as *R*. *suturalis* (Macleay), but there are still valid records of *suturellus* from Roydon Common. *Heterocerus fusculus* Kiesenwetter is recorded at light at Cranwich and in a pond at Oxburgh Hall, examples of the apparently increasing tendency for this species to be found inland. The hydrophilid *Cryptopleurum crenatum* (Kugelann) is reported from horse dung.

COLLIER M J & LANE S A 2019. Recent Norfolk beetle records, including 32 additions to the county list. *The Coleopterist* **28** 18-29.

***PLATAMBUS* LARVAE**

The larvae are of the Japanese *P. convexus* Okada, *P. fimbriatus* (Sharp) and *P*. *pictipennis* (Sharp). The chaetotaxy is described in detail and the point is made that *Platambus* larvae stand out from other Agabinae in having an almost square last abdominal segment. Another point here might be that if these larvae were encountered in the field the Mask of Zorro across the head in *P. fimbriatus*, *P. pictipennis* and *P. sawadai* (Kamiya) would alert one to the possibility that these belonged to *Platambus*, the marking being less obvious in *P. convexus*. [Is this a blind spot for some? See page 14.]

OKADA R, ALARIE Y & MICHAT M C 2019. Description of the larvae of four Japanese *Platambus* Thomson, 1859 (Coleoptera: Dytiscidae: Agabinae) with phylogenetic considerations. *Zootaxa* **4646** 401-433.

NORTH CAUCASUS BEETLES

Helophorus hilaris Sharp, *Laccobius obscuratus* Rottenberg and *Hydraena pontica* Janssens are new for Russia. *Haliplus sibiricus* Motschulsky and *Hydroporus nigellus* Mannerheim are new for the North Caucasus. Other species are new for North Ossetia and Kabardino-Balkaria: *Helophorus discrepans* Rey, *Chaetarthria seminulum* (Herbst), *Contacyphon padi* (L.) and *Plateumaris sericea caucasica* (Zaitzev). Other species worth some comments are *Agabus congener* (Thunberg), *Hydroporus incognitus* Sharp, *Helophorus faustianus* Sharp, *Enochrus affinis* (Thunberg), *Sphaeridium lunatum* Fab., and *Contacyphon variabilis* (Thunberg).

PROKIN A A & SAZHNEV A S 2019. New records of beetles from families Haliplidae, Dytiscidae, Hydraenidae, Helophoridae, Hydrophilidae, Scirtidae and Chrysomelidae (Coleoptera) from the North Caucasus. *Caucasian Entomological Bulletin* **15** 49-53.

ISOTOPES CAN TRACE FOOD SOURCES

This science is well developed and begging for more work to be done on what beetles eat, especially in respect to the use of biofilms.

SÁNCHEZ-CARRILLO, S. & ÁLVAREZ-COBELAS, M. 2018. Stable isotopes as tracers in aquatic ecosystems. *Environmental Research* **26** 69-81.

SEXUAL SELECTION PREDICTS DIVERSITY

Data collected from across the Animal Kingdom, including Chrysomelidae, show that, on a family basis, higher species richness is associated with stronger sexual selection of males. The author for correspondence is Lucas Marie-Orleach.

JANICKE T, RITCHIE M G, MORROW E H & MARIE-ORLEACH L 2018. Sexual selection predicts species richness across the animal kingdom. *Proceedings of the Royal Society B* 285 20180173 8 pp.

NEOTROPICAL SCIRTIDS

Two species originally named as a *Cyphon* and a *Prionocyphon* were examined in Paris Museum. They superficially resembled *Calvarium* Pic, known from Africa, Asia and Australia. Subsequent visits to Panama and South America yielded 14 further species of what is now named *Calvariopsis* Ruta. In some species the females have “excitators”, dimples at the extremities of the elytra filled with modified setae.

RUTA R 2019. *Calvariopsis* gen. nov., a new genus of Neotropical Scirtidae (Coleoptera: Scirtoidea). *Zootaxa* **4604** 1-41.

MACROINVERTEBRATE RESPONSES TO SALT – OR LOSS OF IT

What happens when a saline river gets diluted or a normal river gets salty? Saline rivers may lose salt at source through mining and saline rivers may get diluted by agricultural drainage. The analysis is based on 220 species for which traits are known. Communities found in rivers with low conductivity (0.3-1 mS/cm) had about the same proportions of salt-sensitive Ephemeroptera/Plecoptera/Trichoptera (= EPT) and salt-tolerant Odonata/-Coleoptera/Hemiptera (OCH). The proportion of EPT taxa went down as OCH went up when conductivity increases. Salinized sites are often at some distance from naturally saline sites, and are colonised by a mixture of opportunists and the saline specialists that are able to move. But many beetles, *Ochthebius* and *Nebrioporus*, of naturally saline rivers appear to have limited dispersal capability .

GUTIÉRREZ-CÁNOVAS C, SÁNCHEZ-FERNÁNDEZ D, CAÑEDO-ARGÜELLES M, MILLÁN A, VELASCO J, ACOSTA R, FORTUÑO P, OTERO N, SOLER A & BONADA N 2019. Do all roads lead to Rome? Exploring community trajectories in response to anthrogenic salinization and dilution of rivers. *Philosophical Transactions of the Royal Society, Series B* **374** 20180009. dx.doi.org/10.6084/m9.

NORTH PORTUGUESE RIVERS INDEXED ….. TO DEATH?

This paper is decidedly more useful than the average paper concerned with reducing the flora and fauna to indices, and is worth a read in order to know all the potential for such things. It concerns two northern Portuguese rivers, the Âncora and the Ferreira, both of which are part of the Natura 2000 network and both of which are seriously affected by diffuse pollution. The Ferreira had moderate to bad ecological status in all seasons whereas the Âncora got to good ecological status in spring and summer. Coleoptera get mentioned but only the names Dytiscidae and Gyrinidae are exemplified, which is rather strange considering the interesting elmid and hydraenid faunas of Portuguese running water. The Âncora runs directly off the Serra de Arga 18 km straight into the Atlantic. The Arga mountain range is well known for its beetles, in particular *Iberoporus agnus* (Foster), *I. argaensis* (Bilton & Fery) and *Hydroporus brancuccii* Fery. David Bilton and GNF looked at the Âncora below Gondar in 2005 and found *Hydraena barrosi* d'Orchymont, *H. iberica* d'Orchymont, *H. inapicipalpis* Pic, *Dupophilus brevis* Mulsant & Rey and *Hydrocyphon championi* Reitter.

RODRIGUES C, ALVES P, BIO A, VIEIRA C, GUIMARÃES L, PINHEIRO C & VIEIRA N 2019. Assessing the ecological status of small Mediterranean rivers using benthic macroinvertebrates and macrophytes as indicators. *Environmental Monitoring & Assessment* **191** (596) 1-23.

BIODIVERSITY BY ALTITUDE IN PNG HYDROPHILIDS

Flight interception traps were set up at roughly 500 metres elevation up Mount Wilhelm, the fourth highest mountain in Papua New Guinea. *Cetiocyon* species were recorded and genetically analysed, with seven new species on Wilhelm, plus three from the Arfak Mountains. The greatest diversity was at the intermediate level of 1200-1700 metres above sea level. Genetic diversity was lowest at high elevation, and phylogenetic reconstruction suggested that *Cetiocyon* ancestors were at low or intermediate altitude. The known eighteen PNG species are keyed and illustrated.

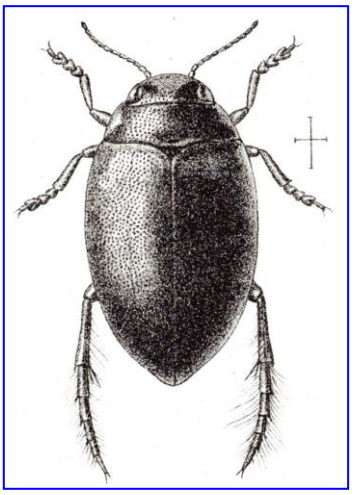
SZCZEPAŃSKI, VONDRÁČEK D, SEIDEL M, WARDHAUGH C & FIKÁČEK M 2018. High diversity of *Cetiocyon* beetles (Coleoptera: Hydrophilidae) along an elevational gradient on Mt. Wilhelm, New Guinea, with new records from the Bird's Head Peninsula. *Arthropod Systematics and Phylogeny* **76** 323-347.

FIRST WET ROCK *PLATYNECTES* IN CHINA

Platynectes (*Gueorguievtes*) *davidorum* is described from Fujian Province, China, being named after Father Armand David, a French missionary who collected Chinese beetles, David Sharp, David Král, a Scarabaeoidea specialist, and David Hájek, son of the senior author. Most specimens were found at night in the water film on a small cliff. Hygropetric *Platynectes* were known previously from Venezuela and Australia. The lack of secondary setae on the legs of the larvae may indicate an adaptation to madicoly.

HÁJEK J, ALARIE Y, ŠŤASTNÝ J & VONDRÁČEK D 2019. The first hygropetric *Platynectes* and its larva from eastern China (Coleoptera: Dytiscidae). *Acta entomologica Musei nationalis Pragae* **59** 217-228.

COSTONECTES LARVA



David Sharp described *Chostonectes* on the basis of four species from Australia and Tasmania. There are now six known species ranging to New Guinea. Although this is a paper about larvae we might as well give Sharp's plate of *C. gigas* (Boheman) an airing. Its larva and that of *C. johnsonii* (Clark) are described and an analysis undertaken of the larvae of four genera of Sternopriscina, this analysis strongly supporting their single origin. A feature found to be unique to the larvae of *Paroster* Sharp is the labial palps having three segments as opposed to the usual two. The larvae of *Chostonectes*, *Antiporus* Sharp and *Barretthydrus* Lea have evolved swimming hairs on all the legs.

ALARIE Y, MICHAT M C & WATTS C H S 2019. Larval morphology of the Australian radiation Sternopriscina (Coleoptera: Dytiscidae, Hydroporinae): description and phylogenetic placement of the genus *Chostonectes* Sharp, 1882. *Aquatic Insects* https://doi.org/10.1080/01650424.2019.1610570 25 pp.

DRYOPOID WING STATES

This review covers 62 genera of Elmidae and 21 of Dryopidae. The Dryopidae are straightforward, all being fully winged except for the Texan *Stygoparnus* Spangler & Barr, which, as with many other subterranean species, is micropterous. The subfamily Larinae was surveyed with ten genera all fully winged. The variation came in the Elminae, with apterous (2% of total), micropterous (9%) and brachypterous (11%) individuals being detected quite often.

SHEPARD W D 2019. Flight wing polymorphisms in Elmidae and Dryopidae (Coleoptera: Byrrhoidea). *The Coleopterists Bulletin* **73** 27-44.

CHINESE *PELTHYDRUS*

Pelthydrus d'Orchymont is a genus of small and dark hydrophilids looking rather like *Laccobius* Erichson. *P. ruiliensis* is newly described from Yunnan Province found in a small stream. A key to seven species of the *P. sculpturatus* group is provided.

ZHU B, JI L & BIAN D 2018. A new species and a new record of *Pelthydrus* Orchymont, 1919 from Yunnan, China (Coleoptera: Hydrophilidae: Hydrophilinae). *Zootaxa* **4438** 189-194.

ELMID PLASTRONS

The plastron structure of twelve Japanese elmid genera has been investigated by scanning electron microscopy. Two *Stenelmis* species and related species, as indicated by DNA analysis, had plastron hairs projecting from the flattened setae typical of most elmids.

HAYASHI M & SOTA T 2019b. Physical gills in Elmidae (Coleoptera: Byrrhoidea): structure and evolutionary pattern of plastron in *Stenelmis* and related genera. *Entomological Science* **22** 157-160.

PLATYNECTES LARVAE IN AMAZON

The Amazon *Platynectes decemnotatus* appears to be unusual in having the larval urogomphi single-segmented (a character shared with *Agabinus*), and by having extra setae on them.

BENETTI C J, MICHAT M C, ALARIE Y & HAMADA N 2019. Description of the second- and third instar larvae of *Platynectes* (s.str.) *decemnotatus* (Aubé, 1838) (Coleoptera: Dytiscidae: Agabinae: Platynectini). *Zootaxa* **4544** 381-394.

EXPERIMENTS ON COLONISATION

These three papers are noticed a trifle late despite “aquatic beetles” appearing in two of the titles. Thirty-two one metre diameter plastic pools were set up in a dry pond basin and filled with stream water. For the tree litter experiment, pools were filled with either hardwood leaf litter (mainly beech, oak and maple) or with litter from loblolly pine, *Pinus taeda* L., and then covered with mesh with 1.3 mm diameter holes. Beetles colonising the pools were harvested weekly, 3,362 individuals in total, identified to 115 species, the only ones able to escape below the mesh being some *Uvarus* and *Paracymus*. Hydrophilids dominated, mainly *Berosus* species, *Tropisternus collaris* and *T. lateralis*. Divided into early and late season, analysis showed up differences in colonisation of the two litter types, *B. infuscatus* being significantly more abundant in hardwood than in pine litter in the early period, but significantly switching in the late period. This presumably can be related somehow to the slower break down rate of pine litter. The same sort of experimental set-up, but with 24 pools, was used to compare water inoculated with zooplankton with uninoculated controls. This time 2,306 individuals of 36 species of water beetle were harvested by lifting the meshes. The more zooplankton the more dytiscids were found, but there was no correlation for hydrophilids. The third paper has a title written in JAErgon, but is nevertheless of interest. Again, the same kind of set-up, with hardwood leaf litter at two different loadings to represent low and high quality resources. Twelve pools were in six pairs 0.5 metres apart spread 9 metres apart. Two of the pairs had low quality resources only, two high quality resources and two with one pool of each kind, this system being replicated four times. There was little difference between the beetle numbers in the high resource pools and in low resource pools close to them, but numbers of the commonest species were somewhat higher in the mixed pool pairs. Pairs of low resource-based pools had decidedly fewer specimens. The authors conclude, quite correctly, that “regional reward contagion can lead to local compression”, but oh for a translation!

PINTAR M R & RESETARITS W J 2017. Tree leaf litter composition drives temporal variation in aquatic beetle colonization and assemblage structure in lentic systems. *Oecologia* **183** 797-807

PINTAR M R & RESETARITS W J 2017. Prey-driven control of predator assemblages: zooplankton abundance drives aquatic beetle colonization. *Ecology* **98** 2201-2215.

PINTAR M R & RESETARITS W J 2017. Context-driven colonization dynamics: regional award contagion drives local compression in aquatic beetles. *Journal of Animal Ecology* **86** 1124-1135.

***EXOCELINA* AT 195**

This latest paper brings the number of *Exocelina* described worldwide to 195, 140 of them from New Guinea, the paper continuing the task of documenting this great radiation. Eighty years ago Jack Balfour-Browne described four *Exocelina* (as *Copelatus*) in a review of Copelatinae worldwide. He wrote “I have found the most serious handicap to effective treatment to lie in the paucity of material of the more complex groups, and this must remain the systematists’ difficulty for a long time to come. Until the material available reaches really generous proportions, it will remain very largely a matter of personal opinion as to where the limits of specific validity lie.” Well, here we have another really generous helping to help us on our way.

SHAVERDO H, SURBAKU S, WARIKA E L, SAGATA K & BALKE M 2019. Nine new species groups, 15 new species, and one new subspecies of New Guinea diving beetles of the genus *Exocelina* Broun, 1886 (Coleoptera, Dytiscidae, Copelatinae). *ZooKeys* **878** 73-143.

KOLEOPTEROLOGISCHE RUNDSCHAU 89 Hot off the press!

EXOCELINA KOWALSKII

This new is described from Papua New Guinea, with distributional notes on other species.

SHAVERDO H V & BALKE M 2019. A new species of the *Exocelina ekari* group and new faunistic data on 12 species of *Exocelina* Broun, 1886 from New Guinea. (Coleoptera, Dytiscidae). *Koleopterologische Rundschau* **89** 1-10.

KUWAITI BEELES

Six species are newly recorded from Kuwait: *Canthydrus diophthalmus* Reiche & Saulcy, *Noterus ponticus* (Sharp), *Spercheus belli* ssp. *babylonicus* (Hebauer), *Enochrus politus* (Küster), *Paracymus aeneus* (Germar) and *Sternolophus solieri* (Castelnau).

EDMONDS N J, FOSTER G N, DAVISON P J & AL-ZAIDAN A S 2019. Additional records of aquatic Coleoptera from Kuwait (Coleoptera: Noteridae, Dytiscidae, Spercheidae, Hydrophilidae). *Koleopterologische Rundschau* **89** 11-15.

OCHTHEBIUS CAUDATUS

This species is redescribed and reported as widely distributed in Romania, with other records for Poland, Hungary and the island of Brač in Croatia. It is in the *Ochthebius marinus*-group.

JÄCH M A, DELGADO J A, TWARDY D, VILLASTRIGO A & DORFER W 2019. *Ochthebius* (s.str.) *caudatus* Frivaldszky, 1883: redescription, new records, and group assignation based on molecular data (Coleoptera: Hydraenidae). *Koleopterologische Rundschau* **89** 17-28.

ASIAN *HELOPHORUS*

The new Chinese *Rhopalohelophorus* is *altosichuanensis*, its most distinguishing feature being the mottling of the elytra. The second paper's title says just about it all, apart from confirming that *H. klnzoriani* Angus, a species now known alive only from the Alpine zone of southern Siberia, was definitely present in an Interstadial part of the Ice Age in northern Sweden.

ANGUS R B 2019. A new species of the *Helophorus* (*Rhopalohelophorus*) *frater-praemanus* group from western Sichuan (China) (Coleoptera: Helophoridae). *Koleopterologische Rundschau* **89** 123-126.

ANGUS R B, LITOVKIN S V & JIA F 2019. Notes on *Helophorus* (s.str.) *kozlovi* Zaitzev, 1908, with description of two new species, re-evaluation of *Helophorus* s.str. Fabricius, 1775 and *Trichohelophorus* Kuwert, 1886, and revised keys to the subgenera of Helophorus and to the species of *Helophorus* s.str. (Coleoptera: Helophoridae). *Koleopterologische Rundschau* **89** 127-150.

ASIAN *AGRAPHYDRUS*

The checklist for south-east Asia and the Australian Region now runs to 80 species, with an astounding 60 of them as described here as new. *A. helicopter* attracts attention, the name being based on the way in which these species can fly off quickly.

KOMAREK A 2019. Taxonomic revision of *Agraphydrus* Régimbart. 1903 III. Southeast Asia (except Philippines) and Australian Region (Coleoptera: Hydrophilidae; Acidocerinae). *Koleopterologische Rundschau* **89** 151-316.

AUGYLES CHERRYAE

This species is named after Stanislav's cat, and lives in Uttar Pradesh.

SKALICKÝ S 2019. *Augyles cherryae* sp.n. from India, and two new faunistic records (Coleoptera: Heteroceridae). *Koleopterologische Rundschau* **89** 317-320.

Finally in *KR* 89, one of the book reviews takes us a further step on rather a saga.

BOOK REVIEW – *FIGARO QUA, FIGARO LÀ, FIGUEROORUM!*

Ochthebius figueroorum Garrido González, Valladares & Régil was originally described from the Ebro headwaters by Garrido Gonzalez *et al*. (1992), and has subsequently been found further south in Morocco, and is also known from subfossil male genitalia retrieved from a specimen about 43,000 years old from Lincolnshire (Angus 1993; Angus & Ribera 1996). The name *figueroi* Garrido, 1990, as used in the latest Palaearctic checklist (Jäch & Skale 2015), was challenged (Valladares *et al*. 2018) on the basis that the thesis in which it was originally described (Garrido González 1990) was not available sufficiently to qualify as a publication recognised under ICZN Rules. Another problem is that the name *figueroi* is arguably incorrect as it was supposed to honour José and David Figueroa, father and son, this being addressed by Valladares *et al*. (2018) by use of "*figueroarum*". This is turn is now challenged in this book review on the basis that the stem of this name must be figuero-, not figueroa-, with the result we have the name *figueroorum.*

JÄCH M A 2019. Book review: Valladares, L.F., Díaz, J.Á., Garrido, J., Sáinz-Cantero, C.E., Delgado, J.A. 2018: Coleoptera Hydraenidae. – In R. Sánchez, M.Á. (ed.): *Fauna Iberica*, vol. **44** – Madrid: Museo Nacional de Ciencías Naturales, 516 pp. *Koleopterologische Rundschau* **89** 16, 122.

ANGUS R 1993. Spanish "endemic" *Ochthebius* as a British Pleistocene fossil. *Latissimus* **2** 24-25.

ANGUS R B & RIBERA I 1996. Entomologia del Cuaternario. *Boletin de la Sociedad entomologica Aragonesa* **16** *PaleoEntomología* 175-182.

GARRIDO GONZÁLEZ J 1990. *Adephaga y Polyphaga acuáticos (Coleoptera) en la provincial fitogeográfica Orocantántabrica (Cordillera Cantábrica, España).* Doctoral Thesis, Secretariado de Publicaciones, Universidad de León.

GARRIDO GONZÁLEZ J, VALLADARES L F & RÉGIL J A 1992. *Ochthebius (Asiobates) figueroi* n. sp. in the north of Spain (Col., Hydraenidae). *Entomologia Basiliensia* **14** 93-99.

JÄCH M A & SKALE A 2015. Family Hydraenidae. pp. 130-162 in I. Löbl & D. Löbl (eds) *Catalogue of Palaearctic Coleoptera. Volume* **2/1***. Hydrophiloidea-Staphylinoidea.* Leiden: Brill.

VALLADARES L F, DIAZ J Á, GARRIDO J, SÁINZ-CANTERO C E & DELGADO J A 2018. Coleoptera Hydraenidae. *Fauna Iberica* **44**. Madrid: Museo Nacional de Ciencias Naturales, Consejo Superior de Investigaciones Científicas.

DNA GAPS

This review of the current state of barcoding in Europe has little to say specifically concerning beetles. "Reverse taxonomy" is of interest as the way in which barcoding can reveal species not detected previously by morphology. The proportion of identified sequences originating from reverse taxonomy compared to all available barcodes ranged from 1% for many macroinvertebrate groups to 20% for beetles and 59% for Diptera. The author for correspondence is Torbjørn Ekrem. Maps for aquatic insects as a whole showed coverage varying considerably between countries.

WEIGAND H, BEERMANN A J, COSTA F O…..& EKREM T 2019. DNA barcode reference libraries for the monitoring of aquatic biota in Europe: gap-analysis and recommendations for further work. *Science of the Total Environment* **678** 499-524.

MORE ON MERCANTOUR

This concerns further work (see ***Latissimus* 36** 25) in this National Park, with 31 species being recorded in 2018, seven of them new for the area. These included *Hydraena bensae* Ganglbauer, *Ochthebius difficilis* Mulsant and *Esolus berthelemyi* (Kuwert). Also illustrated is *Nebrioporus bucheti bucheti* (Régimbart).

QUENEY P 2019. Coléoptères aquatiques du massif du Mercantour: données complémentaires pour Sospel (Alpes-Maritimes, France). *Le Coléoptériste* **22** 34-39.

EQUIPMENT

A photograph from a message by Martin Fikáček on social media reminds one of the problems of working in waterfalls.

ROCKPOOL BEETLES LATEST

Ochthebius lobicollis is now known from Girona and the Côte d'Azur on the mainland plus Capraia, Corsica, Menorca, and Sardinia. Comparison of Cytochrome oxidase 1 data from Iberia, Menorca and Sardinia indicates less than 1% divergence. Rockpool habitats are illustrated along with the beetle itself.

RIBERA I & HERNANDO C 2019. Notes on the distribution and habitat of *Ochthebius lobicollis* Rey, 1885, a poorly known north-western Mediterranean coastal species (Coleoptera: Hydraenidae). *Fragmenta entomologica* **51** 51-54.

DEFENCE SYSTEMS COMPARED

The whole book, *Aquatic Insects: Behavior and Ecology*, is probably a great read but there is a limit to the number of such tomes one can buy in the year, this one costing about €187. Fortunately, we have access to Chapter 9, a review of defence systems in aquatic insects. Konrad Dettner brings together a huge amount of information, which is in some ways reinforces one's impression of the gaps. Overall, stridulation is confirmed as being more abundant in water insects than in terrestrial arthropods, the conclusion being that it is primarily for defence against enemies rather than for communication within each species. There is also a high incidence of playing dead – thanatosis – also of escape reactions. Chemical defence differs from that used terrestrially, for example the use of quinines is entirely absent from aquatic insects but there is extensive use of aromatics as toxins against predators and to prevent microbial attack. A remarkable example of convergent evolution is that the prothoracic glands of dytiscids and the maxillary glands of those giant belostomatid bugs both produce steroids for use as fish toxins, substances that are generated by these insects from precursor cholesterol molecules in their food. One of the bugs may have 0.1 mg of deoxycorticosterone whereas dytiscids have up from 0.03 to 0.4 mg. Secretion grooming is important in freshwater insects having hydrofugic respiratory surfaces that might be colonised by bacteria or by peritrich ciliates. The opposite can also be important, e.g. the pygidial glands of water beetles that produce secretions aiding in wettability.

DETTNER K 2019. Defenses of water insects. pp. 192-262 in K. Del-Claro & R. Guillermo (eds). *Aquatic Insects: Behavior and Ecology*. Basel: Springer Nature Switzerland AG.

HYDROTRUPES CHINENSIS

The larvae of this beetle was "found sitting on a rock in early afternoon". On the other hand. The adults were found to be strictly nocturnal, appearing on the rock from about 10 p.m., hiding during the day in fissures or under loose stones. When disturbed the adults readily jumped off the rock. All that plus the usual descriptions and illustrations. A fascinating paper! The author for correspondence is Jiří Hájek.

ALARIE Y, MICHAT M C, JIA F & HÁJEK J 2019. *Hydrotrupes chinensis* Nilsson, 2003 (Coleoptera: Dytiscidae): new records, (re)description of adult and larva, and notes on its biology. *Aquatic Insects* https://doi.org/10.1080/01650424.2019.1601229 21 pp.

PERUVIAN *HYDATICUS*

Eleven species of *Hydaticus* (*Prodaticus*) are given the treatment from the Neotropical Region, including the new species from the Huánuco Department in lowland rainforest. The guide to naming the colour patches is of interest in that it can be related to most Palaearctic *Hydaticus* subgenus *Hydaticus*.

MEGNA Y S, BALKE M, APENBORN R & HENDRICH L 2019. A review of Peruvian diving beetles of the genus *Hydaticus* Leach, 1817, with description of *Hydaticus* (*Prodaticus*) *punguana* sp. nov., and notes on other Neotropical species (Coleoptera: Dytiscidae). *Zootaxa* **4615** 113-130.

AUSTRALIAN STYGOFAUNA

The stygofauna are those animals occurring in ground water whilst the troglofauna live in air spaces. You then go –bite for those in complete darkness, –phile for those in areas with some light plus species that need the surface for part of their life-cycle, and –xene for those species that make occasional use of subterranean habitats. The Pilbara and Yilgarn cratons (or regions) lie on the Western Shield in Australia, separated by the Hamersley Range. Only one water beetle featured among the 637 species of stygofauna collected by Bennelongia Environmental Consultants in the Pilbara, whereas more than 90 species are known from the Yilgarn, where they comprise 4.5% of the species. This difference between the two areas appears to be more to do with the availability of habitat than with water chemistry, which is largely saline. This is an interesting chapter placing the water beetles into the greater context.

HALSE S A 2018. Subterranean fauna of the Arid Zone. pp. 215-241 in H. Lambers (ed.) *On the ecology of Australia's Arid Zone*. doi.org/10.1007/978-3-319-93943-8_9

BEETLE HYDROCARBONS

Nebrioporus and *Enochrus* each have species showing ranges of resistance to desiccation and osmoregulatory ability, which can dictate the habitats that each species can occupy. These can be linked to the hydrocarbons (CHCs) present in the cuticle. A further feature is that the species of saline waters have a remarkable ability to adjust the CHCs in response to changing salinity. This is based on synthesis of new saturated n-alkanes and long chain branched alkanes.

BOTELLA-CRUZ M, PALLARÉS S, MILLÁN A & VELASCO J 2019. Role of cuticle hydrocarbons composition in the salinity tolerance of aquatic beetles. *Journal of Insect Physiology* 117 https://doi.org/10.1016/j.jinphys.2019.103899

ETHIOPIAN *HETEROCERUS*

H. atrocinereus Charpentier and *H. tibesticola* Charpentier are new for Ethiopia. They and their habitats are illustrated.

SAZHNEV A S & PROKIN A A 2019. New records of Heteroceridae (Coleoptera) from Ethiopia. *Fragmenta Faunistica*, **62** 63-66.

MOTONERUS

When Michael Hansen described *Motonerus* just about the only thing known about it was that there was one species in El Salvador living in cloud forest. These very small megasternine hydrophilids live in leaf litter in cloud and montane forest in Central and South America. A key is provided for twelve species, three newly described here and one yet to be described. The larva is described for the first time.

FIKÁČEK M 2019. Neotropical leaf litter beetle genus *Motonerus* (Coleoptera: Hydrophilidae): new species, distribution data, and description of third instar larva. *Neotropical Entomology* doi.org/10.1007/s13744-019-00679-4 21 pp.

CHINESE *COELOSTOMA*

Twenty-two species of *Coelostoma* are now known from China, with the description of *C. jaculum* from Yunnan and *C. phototropicum* from Xizang.

JIA F, ANGUS R B & BIAN D 2019. Two new species of *Coelostoma* Brullé, 1835 from China (Coleoptera: Hydrophilidae: Sphaeridiinae). *Aquatic Insects* **40** 291-299.

***OULIMNIUS MAJOR* IN DEVON**

A female was found in an empty caddisfly case in the River Otter, South Devon, in 2017.

BUCZYŃSKI P & BUCZYŃSKI E 2019. First records of *Gomphus vulgatissimus* (L.) (Odonata: Libellulidae) and *Oulimnius major* (Rey) (Coleoptera: Elmidae) in southwestern England (Great Britain) with other insect records from Devon County. *Wiadomości Entomologiczne* **38** 120-121.

***AUGYLES SERICANS* IN POLAND**

This species is recorded from Chełm (a Club meeting place in 2016).

WOJAS T 2019. Nowe stanowisko *Augyles sericans* (Kiesenwetter, 1843) (Coleoptera: Heteroceridae) w Polsce. *Wiadomości Entomologiczne* **38** 124-125.

***HYDROCHARA FLAVIPES* IN POLAND**

This concerns a record from Krakow in 2011

WOJAS T 2019. Nowe stanowisko kałużnika żółtonogiego *Hydrochara flavipes* (Steven, 1808) (Coleoptera: Hydrophilidae) w Polsce. *Wiadomości Entomologiczne* **38** 122-123.

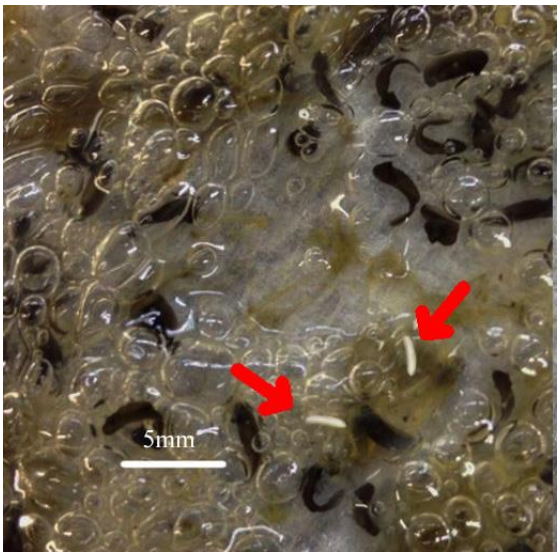
KARPATHOS MARSH FROG DIET STILL UNCERTAIN

This paper is possibly as ill considered as the many papers by ornithologists who just regard insects as bird food – and all for the want of a little more work on identification. *Pelophylax cerigensis* (Beerli, Hotz, Tunner, Heppich & Uzzell) is claimed to be the most endangered frog in Europe, confined to two small streams in the north of the island of Karpathos. Seventy-six individuals were caught, carefully anaesthetised and had their stomachs pumped out so that the gut contents could be analysed. Spiders and beetles dominated the diet but taxa below order level do not seem to have been identified, so one does not know whether the beetles were terrestrial or aquatic – presumably, if the abundance of spiders is anything to go by, the former, i.e. when the frogs are searching out of the water.

PAFILIS P, KAPSALAS G, LYMBERAKIS P, PROTOPAPPAS D & SOTIROPOULOS K 2019. Diet composition of the Karpathos marsh frog (*Pelophylax cerigensis*): what does the most endangered frog in Europe eat? *Animal Biodiversity and Conservation* **42** 1-8.

AMPHIBIAN CONSERVATION NOT HELPED BY BEETLES

John Gould and Chris Watts (2016) first described the way in which *Hydaticus parallelus* would lay eggs in the spawn of the sandpaper frog, *Lechriodus fletcheri* Boulenger, in Australia. The note was accompanied by the illustration right, the white elongated eggs being seen amongst young tadpoles. This is further recorded in the first paper. Group feeding attacks on amphibians are nothing new to the pages of ***Latissimus***, unnamed dytiscids being illustrated in the second paper attacking a striped marsh



frog, *Limnodynastes peronii* Duméril & Bibron. What does seem to be new is an observation of an unnamed beetle burrowing inside the abdomen of a tadpole. Although these occasional feeding attacks by adult can appear quite dramatic it is presumably the larval predation of tadpoles that takes the greatest toll.

GOULD J & WATTS C H S 2016. An observation of egg laying by the Australian dytiscid*, Hydaticus parallelus* Clark**. *Latissimus* 37** 13.

VALDEZ J W 2019. Predaceous diving beetles (Coleoptera: Dytiscidae) may affect the success of amphibian conservation efforts. *Australian Journal of Zoology* doi.org/10.1071/ZO19039 pp.4.

HYGROTUS ENNEAGRAMMUS IN POLAND

It is newly recorded for Silesia.

GREŃ C & GRZYWOCZ J 2019. *Hygrotus* (*Coelambus*) *enneagrammus* (Ahrens, 1833) (Coleoptera: Dytiscidae) – nowy dla Górnego Śląska gatunek chrząszcza. *Acta entomologica silesiana* **27** 1.

SAVECATFIELDFEN

Anyone interested in the future of the Norfolk Broads would do well to be associated with this campaign. Visit the website at **SaveCatfieldFen.org** to learn more about how water abstraction is affecting the Broads catchment in general and Catfield Fen in particular. Catfield comes equal first with the palsa fens of Norfolk as internationally important sites for water beetles in Britain. Many years ago Catfield became the last known British site for *Graphoderus bilineatus* (De Geer) in Britain, and we may have similarly lost *Bidessus unistriatus* (Goeze) from there, so we must also be concerned about the survival of *Agabus striolatus* (Gyllenhal) and *Hydrochus megaphallus* van Berge Henegouwen.

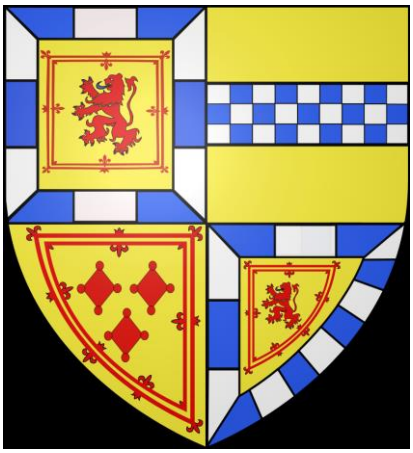
PROFESSOR DR BERNHARD KLAUSNITZER 80TH BIRTHDAY

Congratulations to one of our greatest water beetlers, Bernhard Klausnitzer, on reaching 80 on 21 October 2019 – and still publishing!

MEETINGS IN 2020

Two meetings are planned, in North-east Scotland 22-25 May, and Calabria 19-22 June.

MORAY 22-25 May 2020



Morayshire is well known for the beetles on Speyside – but we are not going there! The Earl of Moray has made his Darnaway Estate open for us, This is near to Forres on the Moray Firth. So far, GNF has recorded 63 species on the Estate. The area around Forres is full of interest and potential. There are extensive coastal marshes with *Ochthebius lenensis*. *Dytiscus lapponicus* occurs almost to sea level and moorland species include *Gyrinus opacus* and *Ochthebius alpinus*. The nearest airport for Forres is at Inverness, 30 km away, with good connections to London and Schiphol. Edinburgh Airport is next nearest (250 km). Right **now** just tell **Garth Foster** latissimus@btinternet.com if you interested and you will be put on the circulation list for more information.

CALABRIA 19-22 June 2020

We will probably be based in the mountain village of Camigliatello. This gives us access to the Calabria National Park, which has two areas, the Sila Grande, in the province of Cozensa, and the Silo Piccola, in the provinces of Catanzaro and Crotone. The Sla is a mountain chain with a series of high plateaux. There are three artificial lakes but there should be plenty of natural wetland habitat available in June. Earlier, we might have had too much snow. “Sila” derives from the Latin silva, and the area is still notable for its beech and larch forests. For Camigliatello the nearest airport is Lamezia Terme (63 km distance), with most links via Milan Airport. The main thing to do **now** is to let **Vincenzo Volpe** (volpeit@gmail.com) know that you are interested. He intends to visit the area this month to check on where it is best to stay. Please keep GNF in the loop too - latissimus@btinternet.com.

Latissimus is the newsletter of the Balfour~Browne Club.

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