

ISSN 0966 2235

LATISSIMUS

NEWSLETTER OF THE
BALFOUR-BROWNE CLUB



Number Two

February 1993

CLUB MEETING, POLAND 28-31 MAY 1993

Andrzej Kordylas has planned a meeting at Jelen Lake for the weekend 28-31 May. Anyone wishing to go should contact him and the secretary by 30 March 1993. The secretary has additional information including useful maps of the area, copies of which will be sent to anyone interested in attending. It makes sense to contact both Andrzej and GNF as Andrzej has to organise accommodation and GNF will try to get people to share transport.

Bytów is a small town in Pomerania, 56 km south of Słupsk. The characteristic features of the local scenery are the lakes, which were formed during the post-glacial period. Most of them are "Lobelian Lakes" with the plants *Lobelia dortmanna*, *Littorella uniflora* and *Isocetes lacustris*. There are also numerous peat bogs, small rivers and ponds. The natural environment has not been degraded too much because there is no harmful industry in the area.

The Club Meeting will be held in a holiday centre on the lobelian lake called Jelen or Deer, 3 km from Bytów. There are bungalows with twin-bedded rooms for about 30-36 people, a conference hall, a canteen and a hiring establishment for water sports equipment. It is also possible to book a hotel in Bytów.

Travel

by train:

from Central Warsaw PKP Station by express "Słupia" to Słupsk;

from Berlin Liechtenberg to Słupsk/terminal Gdynia-Gdańsk;

from Vilnius to Słupsk via Riatyskok;

then from Słupsk to Bytów by bus from PKS Station; from Bytów to the Jelen lake by bus, 30-40 minute frequency. *We'll try to arrange to meet trains, if specified.*

by bus:

from Warsaw PKS Station to Słupsk;

from Gdynia PKS Station to Słupsk;

from Swinoujście PKS Station to Słupsk/terminal Gdańsk Gdynia.

by ferry:

from Copenhagen to Swinoujście (and then by train or bus);

from Stockholm to Gdańsk or from Ystad to Swinoujście (and then by train or bus).

by plane:

via international airports in Gdańsk and Warsaw.

by car:

from Berlin taking the E74 to Szczecin, the E14 to Goleniów and E28 to Słupsk, thence by road No 21 and side-road to Bytów;

from Gdańsk taking the E28 to Lębork, along the road No 214 for 4 km and then by No 212 to Bytów;

consult the detailed map to be supplied.

Costs

The entire cost of accommodation including all meals will be the equivalent of about \$US 40, whereas a hotel might cost \$US 150. The bus trip will be about \$US 8.

Provisional Programme

Friday 28 May: arrivals from 3 p.m. onwards;

Saturday 29 May: morning of talks - the main language will be english but others are permitted so long as figures and tables are self-explanatory; afternoon - local visits; evening - videos, poster session, reprint exchange.

Sunday 30 May: whole day bus trip to Slowinski National Park and the Baltic lakes at Gardno and Lebsko.

Monday 31 May: more talks if required; informal discussion of member activities, departures.

Contact

Andrzej's address is: Andrzej Kordylas, Domaradz 1a, 76-241 Stara Dąbrowa, Poland.

He has no direct telephone link. His fax number (Dammica 46) will probably only work within Poland, connected to Słupsk. A telex number is available (583409 ug pl).

GNF's addresses and telephone number are known to most people but note a new fax number - (0) 292 521040 at the Scottish Agricultural College.

TWO STRATEGIES TO COPE WITH TEMPORARY HABITATS USED BY SOME PYRENEAN HYDRADEPHAGA

by Ignacio RIBERA

The Capmany fens are two medium-sized temporary ponds in the comarca of L'Alt Empordà (province of Girona), associated with which are some artificial habitats. They are very interesting sites, due to their good quality, the scarcity of big temporary habitats in the north of the Iberian Peninsula, and their biogeographic situation (near the natural pass of La Junquera).

The fens and some close artificial habitats have been sampled over one complete cycle lasting two years. The fens were completely dry at the beginning of the 1989 spring. In the 1990 winter they filled again, and remained with water until the summer. The level began to decrease in the first of June, and in September-October they were completely dry again. After the filling of the fens the samples were taken monthly (from February 1990 to January 1991).

Seventy six samples have been taken, with 7,995 specimens of Hydradephaga belonging to 49 species (Table 1). The sampling effort was uniform in all cases, and all the specimens in the net were always collected, so the samples can be assumed to be semiquantitative.

Results

When we observe the development of the populations in the different habitats we realize that there could be characterized two different groups, or two different strategies.

The population development of some species from the first group are represented in Figure 1 (a). To this group belong the two *Noterus*, *Hydrovatus clypealis*, *Laccophilus ponticus*, *Copelatus haemorrhoidalis* and *Graphoderus cinereus*. In all these cases there is a sudden raise in the number of adults short after the filling of the fens, but without any larvae being detected. The density of the populations decreases progressively as the cycle advances and the fens began to dry. The larvae appear sometime after the maximum density is reached (in the cycle studied, in spring or early summer). The larvae of some species have not been collected, because they develop in special habitats or require special sampling methods which have not been used (e.g. *Noterus*), or because they have not been identified.

Because of the great numbers of adults that are collected short after the filling of the fens, and the initial absence of larvae, we can suppose that they are not a colonizing population, but individuals which have survived the fens' dry period as drought-resistant forms (as larvae, pupae or adults). They are all species characteristic of big temporary ponds, like *Graphoderus cinereus* and *Copelatus haemorrhoidalis* (Franciscolo, 1979), that manage to make the most of the pulse of mass production typical of these temporary and immature systems.

The species of this group are found regularly only in the two big fens. There have been collected some adults in the residual pond that is formed after the lower fen dries, but they are isolated specimens, the residuo of the populations of the lower fen. Some isolated specimens also appear in the watering places by the lower fen or in a little reservoir one km away, but without any constancy.

So, group one can be considered as species living exclusively in the fens, and probably require special adaptations to cope with the drought period.

The population development of the species belonging to the second group is different (Figure 1(b)). They began to be collected in the fens well after they filled up, and after those of the first group had appeared. The density of the adult populations is low at the beginning, reaching their maximum when the fen is almost dry, in the remains of the lower fen, the pond, or the artificial habitats near the fens with permanent water. The larvae appear before the increasing of the adult populations.

The lack of data concerning the ecology of these species in the area makes difficult the characterization of this group. According to the data obtained in the Pyrenees and Prepyrenees by Ribera (1991), most of them can be considered as common species, being found in many different habitats, although they prefer well vegetated, stagnant waters (e.g. *Haliphys lineatocollis*, *Graptodytes varius*, *Hygrobia hermanni* or *Hyphydrus auberi*).

Others are more scarce, such as *Stictonectes lepidus*, *Bidessus goudoti* and *Graptodytes flavipes*, although being found here in great numbers (*G. flavipes* is the commonest species in the fens).

TABLE 1. Hydradeephaga recorded from the Capmany fens, Gerona.

1* <i>Peltodytes caesus</i> (Duftschmid, 1805)	26* <i>G. ignotus</i> (Mulsant, 1861)
2* <i>P. rotundatus</i> (Aubé, 1836)	27 <i>G. varius</i> (Aubé, 1836)
3* <i>Haliphus fulvus</i> (Fab., 1801)	28 <i>Stictonectes lepidus</i> (Olivier, 1795)
4** <i>H. variegatus</i> Sturm, 1834	29 <i>Deronectes opatrinus</i> (Germar, 1824)
5 <i>H. lineatocollis</i> (Marsham, 1802)	30* <i>Stictotarsus 12-pustulatus</i> (Fab., 1792)
6 <i>Hygrobia hermanni</i> (Fab., 1775)	31 <i>Laccophilus hyalinus</i> (DeGeer, 1774)
7* <i>Gyrinus dejeani</i> Brullé, 1832	32* <i>L. minutus</i> (L., 1758)
8 <i>G. substriatus</i> Stephens, 1829	33* <i>L. ponticus</i> Sharp, 1882
9 <i>G. urinator</i> Illiger, 1807	34* <i>Copelatus haemorrhoidalis</i> (Fab., 1787)
10* <i>Noterus clavicornis</i> (DeGeer, 1774)	35 <i>Agabus brunneus</i> (Fab., 1798)
11* <i>N. laevis</i> Sturm, 1834	36 <i>A. didymus</i> (Olivier, 1795)
12* <i>Hyphydrus aubei</i> Ganglbauer, 1892	37 <i>A. bipustulatus</i> (L., 1767)
13** <i>Hydrovatus clypealis</i> Sharp, 1876	38* <i>A. conspersus</i> (Marsham, 1802)
14 <i>Yola bicarinata</i> (Latreille, 1804)	39* <i>A. nebulosus</i> (Forster, 1771)
15** <i>Bidessus goudoti</i> (Castelnau, 1834)	40 <i>Colymbetes fuscus</i> (L., 1758)
16 <i>B. minutissimus</i> (Germar, 1824)	41* <i>Meladema coriacea</i> Castelnau, 1834
17* <i>Hydroglyphus pusillus</i> (Fab., 1781)	42 <i>Eretes sticticus</i> (L., 1767)
18 <i>Coel. impressopunctatus</i> (Schal., 1783)	43*** <i>Hydaticus seminiger</i> (DeGeer, 1774)
19* <i>Hygrotus inaequalis</i> (Fab., 1777)	44 <i>Graphoderus cinereus</i> (L., 1758)
20* <i>Hydroporus planus</i> (Fab., 1781)	45* <i>Dytiscus circumflexus</i> Fab., 1801
21* <i>H. pubescens</i> (Gyllenhal, 1808)	46 <i>D. marginalis</i> L. 1758
22* <i>H. tessellatus</i> Drapiez, 1819	47* <i>D. pisanus</i> Castelnau, 1834
23 <i>H. vagepictus</i> Fairm. & Lab., 1854	48* <i>D. semisulcatus</i> Müller, 1776
24 <i>Graptodytes bilineatus</i> (Sturm, 1835)	49* <i>Cybister lateralimarginalis</i> (DeGeer, 1774)
25 <i>G. flavipes</i> (Olivier, 1795)	

***new for the Iberian Peninsula

** new for the subarea Ibérico-Pirenaico-Mediterránea (sensu Millán 1991)

* new for the province of Gerona

TABLE 2. Characteristics of the two strategies, with their respective species.

GROUP 1

"Wait-till-better-times"

1. Present only in the fens
2. Adults limited to the time when the fens are full
3. Maximum density of adults short after the fens fill
4. Larvae present after the maximum adult density
5. Density of adults decreasing as the fens dry out
6. Adverse periods passed as resistant forms in the fens?
7. Narrow niche range?

Noterus laevis, *N. clavicornis*,
Hydrovatus clypealis,
Laccophilus ponticus,
Copelatus haemorrhoidalis,
Graphoderus cinereus

GROUP 2

"Use-what-you-have"

1. Present in all the habitats
2. Adults present all the year around
3. Maximum density of adults well after the fens fill
4. Larvae present before the maximum adult density
5. Density of adults increasing as the fens dry out
6. Adverse periods passed in other "refuges" as adults
7. Broad niche range?

Hygrobia hermanni, *Peltodytes caesus*,
Haliphus lineatocollis, *Hyphydrus aubei*,
Bidessus goudoti, *Coelambus impressopunctatus*,
Hygrotus inaequalis, *Graptodytes flavipes*,
G. varius, *Stictonectes lepidus*

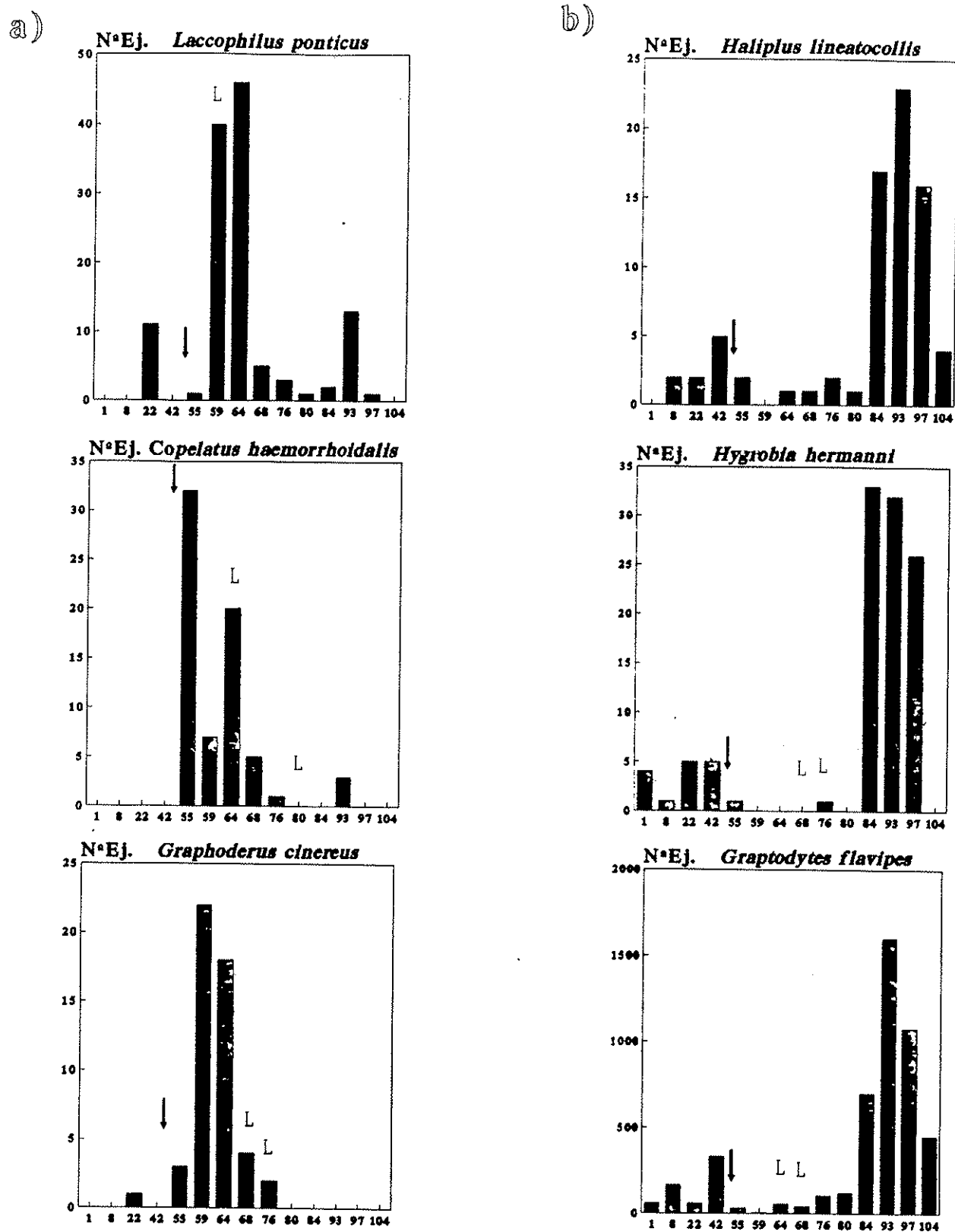


Figure 1. Development of populations of selected species at Capmany, 1989-1991. In the left column (a), species typical of temporary ponds. In the right column (b), species belonging to the opportunistic group. The x axis shows the number of weeks from the start of sampling (21 January 1989) to 12 January 1991 (104th week); the y axis shows the number of specimens ("N°Ej"). L: presence of larvae.

The species of the second group are well established in the area, with a regular presence in the artificial habitats near the fens all the year around (and sometimes in high densities). They colonize the fens when filled, reproduce in great numbers, and disperse or disappear when they become dry. They are more opportunistic species, not characteristic of big temporary ponds or fens, but adapted to use all sort of habitats when available.

The development of population numbers indicates the existence of two cycles. One is the filling cycle of the fens. It can be considered irregular, unpredictable and external, caused by variations in the amount of rain. Superimposed on it there is a regular, predictable and internal cycle, associated with the natural life cycles of the species. When these two cycles are in phase, there is a large increase in the number of individuals, and some increase in the number of species. When they are not in phase, there is a substantial reduction in the density of the populations.

In the cycle of the fens we can see the general asymmetry of the evolution of ecosystems - slow processes of self-organization interrupted by punctual catastrophes: sudden introductions of large amounts of external energy that resets the succession (Margalef 1991). In this case the catastrophe is, paradoxically, the filling of the fens, so the aquatic fauna is characteristic of the first stage of the succession, a very immature - but productive - system. The Hydradeephaga are well adapted for the efficient use of temporary pulses of productivity in relatively small and scattered habitats (Larson, 1985). Some species have a short development time, long-lived adults with high dispersal capacity, and can use a wide range of resources.

Other adaptations to temporary habitats are the frequent lack or interspecific competition in the group (Larson 1985; Nilsson 1986; Carr 1989), and the increase in diversity and the number of specimens and species in habitats with high productivity and seasonality (Soler 1972; Larson 1985; Ribera 1991) - on the contrary to the general tendency to increase diversity with stability.

There are, however, at least two different ways to use these resources, as it has been shown in the results: the "Wait-till-better-times" and the "Use-what-you-have" strategies (summarized in Table 2).

The inclusion of the species in one of these groups could vary in different geographic areas. Svensson (1992) provides the example for three species of northern *Gyrinus*. In the centre of the species distribution area, where they are well established and the general conditions are supposed to be favourable, they can regularly occupy a wider range of habitats (using the opportunistic strategy). On the contrary, in the periphery of their distributions, where the conditions are supposed to be worst, they are confined to the most favourable habitats (using the strategy of the species limited to one type of habitat).

References

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- MILLAN, A. 1991. *Los Coleópteros Hydradeephaga (Haliplidae, Gyrinidae, Noteridae y Dytiscidae) de la cuenca del río Segura, SE de la Península Ibérica*. Unpublished Doctoral Thesis, Universidad de Murcia, pp. 567.
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- SOLER, A.G. 1972. *Los Coleópteros Acuáticos de las Marismas del bajo Guadalquivir*. Doctoral Thesis resumé, Servicio de Publicaciones de la Universidad de Sevilla, pp. 42.
- SVENSSON, B.W. 1992. Changes in occupancy, niche breadth and abundance of three *Gyrinus* species as their respective range limits are approached. *Oikos* 63 147-156.

A REMINISCENCE OF NORWAY 1990

"Dos cafés con leche, por favor". The ship steward unblinkingly provided the coffee, a little strange seeing we had just left Newcastle upon Tyne en route for Norway. The contrast between the Picos d'Europ in northern Spain in June and the Hardanger Fjord in July could not have been more extreme; apparently, Norway had suffered two weeks of continuous rain when we arrived. The innumerable tunnels on the road from Bergen to Voss were only marginally gloomier than the open road. Probably just as well, because, despite living in Scotland, we are not really that used to the view of a fjord immediately below as one delicately manoeuvres the car onto a passing place cantilevered out into space on the cliff face. We installed ourselves into a ski chalet, ominously still surrounded by snow, 300 metres above Voss in Inner Hordaland. According to Lindroth's catalogue this area boasted only 40 species and had no Hydraenidae at all. On a family holiday one does what can and one can always use the family commitment as an excuse for poor collecting performance. After nearly two weeks and only nine Hydrophilidae plus *Hydraena britteni* Joy and *Limnebius truncatellus* (Thunberg), I needed that excuse. I had others - halfway through our holiday I had to go to Copenhagen to give the worst performance of my life in a session on biosafety at a Biotechnology Congress. I stayed with Michael Hansen and had the surprising experience of taking *L. truncatellus* on the Amager Prælled, a short walk from his house, and in my conference suit. The trip set me on the way to a new and unwanted record, first a Heathrow baggage handlers' strike and a Madrid air traffic controllers' strike on the way to Bilbao, and then the traditional SAS pilots' strike, which stranded me in Copenhagen a further day. Denmark seemed to be warmer than Norway but not so! Back again I was met by a roar, not so much from an angry family, as from every little waterfall rumbling with snowmelt.

This rushing water certainly hampered some collecting and explains a lack of river species in my list. My main interest was in any case to get above the treeline in the search for *Oreodytes alpinus* (Paykull), to compare Norwegian habitats with those of Caithness. Despite the snow, the ski-lifts were switched off but Dinglo and Danglo, the two funicular cars, helped us up Hangur Mountain and into *Dytiscus lapponicus* L. and *Gyrinus opacus* Sahlberg territory, also affording a beautiful view of the Voss Vatnet, with its well-used beach, powerboats, water-skiers and the occasional nude bather. We also used our own car to get up high, necessary to escape the intense heat, hotter than Spain, and this gave me an opportunity to stroll about on the tundra of the Mjölfjell, so as to have my first experience of *Hydroporus nigellus* Mannerheim and *Colymbetes dolabratus* Paykull in amongst the melting ice floes. I was relieved to find *Oreodytes alpinus* eventually; it was common in two lakes at about 900 metres, occurring on fixed substrata rather than on the unstable sand of the Caithness lochs. The boreal nature of the area was underlined by burnet moths fluttering around the *Dryas* flowers, stuffed Great Northern Divers for sale at the Lapp camp, and hordes of Lycra-clad German and Italian tourists. Being British we were able to supply our children with a snazzy plastic bag for use as a toboggan.

The other exciting place was an old slate quarry near Moo. It had a beetler trap which I sprang, a small shaded pond with a mass of *Juncus* at one end. One scoop through the shallows produced *Colymbetes paykulli* Erichson; I stepped in so as to have a more substantial sweep and found myself in about 3 metres of water.

On the last day, braving the nude ladies, I also waded into the Voss Vatnet, where, of course, *Oreodytes alpinus* was doing quite nicely at 47 metres above sea level!

The greatest surprise of the holiday was the car's milometer, registering only 500 miles of travel during two weeks, and including our travel to and from Ayr to Newcastle. The best surprise was that Norway is not too costly so long as you bring your own drink and don't go to any restaurants - even the dreaded Burgerking cost £25 for a few burgers, chips and cokes. Sorry about this travelogue but often the most enjoyable holidays are not necessarily marked by great beetle finds. GNF

FOSTER, G.N. 1992. Some aquatic Coleoptera from Inner Hordaland, Norway. *Fauna norv. Ser. B.* 39 63-67.

CORRIGENDUM LATISSIMUS 1

The international number on the front cover is our new ISSN number, not ISBN as stated.

CZECHOSLOVAKIAN STAMP

Lars Hendrich and Manfred Jäch have each drawn attention to a new postage stamp, presumably intended to celebrate the production of the new version of the Club newsletter. Photocopying doesn't do it justice and it is not clear whether it is still on issue given that Czechoslovakia no longer exists.

**CONSERVATION OF HELOPHORUS**

Six comments have been received about the Case 2796, the proposal to conserve the spelling of the name *Helophorus* Fabricius, 1775 with an "H". See *Latissimus* 1 11. All have been in favour of its retention. Watch this space for the voting. David Atty (*in litt.* 16 February 1993) has noted that the argument about whether the name begins with the Greek letter eta, for *hēlos* (= callus) or the letter epsilon for *helos* (= marsh) does not really matter as both should be aspirated, resulting in *Helophorus*.

ICZN 1992. Comments on the proposed conservation of the generic name *Helophorus* Fabricius, 1775 (Insecta, Coleoptera) as the correct original spelling. *Bulletin of Zoological Nomenclature* 49 230-232.

DESIGNATION OF TYPE FOR OCHTHEBIUS

Comparing it with the item above, it jars to see "*Elophorus*" in use by ICZN! Acceptance of earlier designations of types for the genus *Ochthebius* would have resulted in a wholesale revision of the use of generic names. The Commission voted 26 to nothing in favour of setting aside earlier designations, taking d'Orchymont's choice of *Elophorus marinus* Paykull (i.e. *Ochthebius marinus*) as the type.

ICZN 1991. Opinion 1631. *Ochthebius* Leach, 1815 (Insecta, Coleoptera): *Elophorus marinus* Paykull, 1798 designated as the type species. *Bulletin of Zoological Nomenclature* 48 80-81.

EUROPEAN ASSOCIATION OF ZOOLOGICAL NOMENCLATURE & ICZN

This organisation has recently been formed in order to support the activities of the International Commission of Zoological Nomenclature. ICZN was set up in 1895 to provide and maintain a uniform system of zoological nomenclature (Tubbs 1991). ICZN publishes the *International Code of Zoological Nomenclature*, the rules of which govern the application of scientific names to animals. The Code has to provide stability and yet adjust to change, including the shift towards usage as opposed to unquestioning acceptance of the rules of classical grammar. Amendments to the Code can be suggested by anyone, and the Commission will consider these for approval and publication in successive editions of the Code.

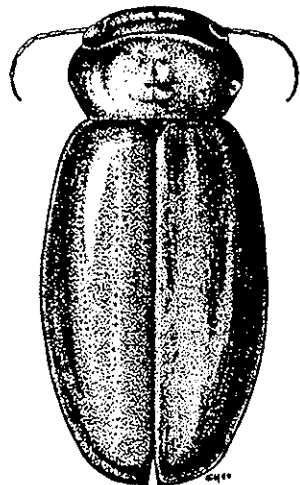
ICZN has had since 1913 the plenary power to waive or modify the application of the Code in instances where strict adherence would cause confusion, thus defeating the purpose of nomenclature. About fifty requests for ICZN to use its plenary powers are received each year, and Club members will note in earlier newsletters that water beetle nomenclature has formed a significant part of these applications.

 Getting the job done properly, with everything properly published in the *Bulletin of Zoological Nomenclature*, costs money. The American Association of Zoological Nomenclature was formed in 1983 to help finance the work of ICZN. EAZN is the sister association, with a main aim of raising 10,000 ECU or more per year. Individual membership costs 30 ECU (or equivalent currency), and you can join by contacting: M.A. Alonso Zarazaga, European Association for Zoological Nomenclature, c/o Museo de Ciencias Naturales, José Gutierrez Abascal 2, 28006 Madrid, Spain. The institutional membership is not yet agreed. In response to a letter asking for more information, Dr Enrique Macpherson has stated that EAZN prefers that Institutions send money directly to ICZN. The Club is hardly an institution in the sense of the word understood by most Europeans. However, unless anyone puts up violent opposition, it is proposed that the Club provides a small annual donation to ICZN, the smallness being agreed by the committee. Despite Professor Balfour-Browne's aversion (Balfour-Browne 1967), we have a strong interest in ensuring the survival of ICZN.

BALFOUR-BROWNE, F. 1967. The history of the International Commission of Animal Nomenclature and its fate. *Entomologist's Record* 79 252-253.

TUBBS, P.K. 1991. The International Commission on Zoological Nomenclature: what it is and how it operates. *Bulletin of Zoological Nomenclature* 48 295-299.

AFROTROPICAL *AGABUS* SUPER SPECIALISTS - IN TROUBLE



This revision of Afrotropical *Agabus* is mainly concerned with providing a natural classification of the group and identifying trends in evolution. Four species groups are recognised, those around *cordatus* LeConte, *ambulator* Régimbart, *raffrayi* Sharp and *ragazzii* Régimbart. Two species are described as new - *perssoni* and *galamensis* from the Ethiopian Highlands, plus *ruwenzoricus* Guignot promoted to specific rank. Recurrent periods of cold and dry climate are considered to be chief force dictating evolution of the high altitude super specialists, the adaptations being a narrow body, specially the pronotum, a broad front to the head, small wings and long and slender hind legs. Four different invasions of Holarctic lineages to East Africa are suggested. For example, the *cordatus* group comprises three Nearctic species and *discicollis* Ancey (left), known only from two specimens collected in the 1880's on Mount Abuna Yosef in Ethiopia.

NILSSON, A.N. 1992. A revision of Afrotropical *Agabus* (Coleoptera, Dytiscidae), and the evolution of tropicoalpine super specialists. *Systematic Entomology* 17 155-179.

PROTOZOA ON WATER BEETLES

Franck Bameul records two species of suctorian Protozoa, "ectosymbionts" found on *Hydraena* in Spain and France. The article indicates how water beetlers can do useful work in related fields. The references are useful in listing the key works of Matthes.

BAMEUL, F. 1991. Note sur deux *Discophyra* phorétiques (Protozoa, Suctoria) trouvés sur les *Hydraena* (Insecta, Coleoptera, Hydraenidae) en Espagne et en France. *Bull. Soc. linn. Bordeaux* 19 97-102.

HYDROVATUS CUSPIDATUS IN GERMANY

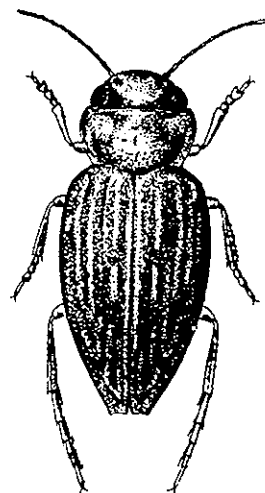
There are thirteen records of *Hydrovatus cuspidatus* in Germany. In northern Germany the species is found in woodland fens and amongst moss in bogs. In Berlin the species peaked in traps in late April with a lesser period of activity centred on November. The species is amongst those illustrated in an account of the Berlin fauna. The same authors have produced a Red List for Berlin which will be reviewed later as part of an update of Red List status of northern European species.

HENDRICH, L. & BALKE, M. 1991. Zur Verbreitung und Bionomie von *Hydrovatus cuspidatus* (Kunze) - einem in der norddeutschen Tiefebene moorgebundenen Schwimmkäfer (Coleoptera: Dytiscidae). *Entomol. Z.* 101 453-468.

HENDRICH, L. & BALKE, M. 1991. Beiträge zur Kenntnis der Tierwelt von Berlin. Teil V: Schwimmkäfer (Coleoptera, Dytiscidae). *Berliner Naturschutzblätter* 35 65-75.

GOODBYE POTAMONECTES FOR EVER?

Some of us are old enough to remember when *Potamonectes* generally became recognised as a genus distinct from *Deronectes*. The latest change means that we must now think of *Nebrioporus* Régimbart instead. Within the *Deronectes* group, Anders Nilsson and Robert Angus recognise the following genera: *Deronectes* Sharp, *Stictotarsus* Zimmermann, *Scarodytes* des Gozis and *Nebrioporus*. Karyotypes of 14 European species are discussed in conjunction with morphological studies to derive a new concept of the phylogeny. *Nebrioporus* is extended to include most species the parameres of which have hook-like, sclerotized apices. These include *kilimandjarensis* (right), originally described by Régimbart as the type of *Nebrioporus*, a new subgenus of *Hydroporus* in 1906. This gives it priority over *Potamonectes* Zimmermann 1921. *Nebrioporus* s. str. and *Zimmermannius* Guignot are recognised as subgenera of *Nebrioporus*. *Scarodytes* survives as a distinct genus on the basis of its ventral sculpture and more



chromosome pairs than in all other genera except *Stictotarsus* with the same number (27). Species with simple parameres are transferred to *Stictotarsus* along with *S. bertrandi* (Legros), previously regarded as a *Deronectes*. The paper ends with a useful checklist, summarized below. The authors admit to uncertainty about the final placing of many species. Apart from use of *Nebrioporus*, the other main change affecting Europe is the move of *griseostriatus* to *Stictotarsus*.

Is this change for ever? The chromosomes of *kilimandjarensis* need to be checked. If there are 49/50, the condition in other *Nebrioporus*, then the name sticks. If this outlying taxon has more chromosomes, i.e. more like *Scarodytes*, then it may be "all change" again. Some people might be relieved to hear that the chances of getting live beetles from Mount Kilimanjaro to Egham are very low!

***Deronectes* Sharp 1882** Metacoxal processes with interlaminary bridge exposed; hind tarsomere 5 twice as long as 4; hind tibia with anterior face covered in spiniferous punctures.

abnormicollis Semenov 1900, Asia
afghanicus Wewalka 1970, Afghanistan
algibensis Fery & Fresneda 1988, Spain
angulipennis (Peyron 1858), Asia Minor
angusi Fery & Brancucci 1991, Spain
aubei (Mulsant 1843), Europe
bicostatus (Schaum 1864), Iberia
bombycinus (Leprieur 1876), North Africa
[brannani] Régimbart 1901, Balearics,
 omitted from checklist
costipennis Brancucci 1983, Iberia
delarouzei (Du Val 1857), Iberia
depressicollis (Rosenhauer 1856), Spain
doriae Sharp 1882, Asia Minor
fairmairei (Leprieur 1876), SW Palearctic
ferrugineus Fery & Brancucci 1987, Portugal
hispanicus (Rosenhauer 1856), S Europe
hakkariensis Wewalka 1989, Asia Minor

jaechi Wewalka 1989, Asia Minor
lareynii (Fairmaire 1858), Corsica
latus (Stephens 1829), Europe
longipes Sharp 1882, Asia
moestus (Fairmaire 1858), S Europe & N Africa
opatrinus (Germar 1824), S Europe
parvicollis (Schaum 1864), SE Europe & Asia Minor
persicus Peschet 1941, Asia
peyerimhoffi (Régimbart 1906), N Africa
platynotus (Germar 1834), Europe
sahlbergi Zimmermann 1932,
 SE Europe & Asia Minor
schuberti Wewalka 1970, Asia Minor
syriacus Wewalka 1970, Asia Minor
theryi (Peyerimhoff 1925) N Africa
vestitus (Gebler 1848), Asia
wewalkai Fery & Fresneda 1988, Spain
wittmeri Wewalka 1970, Asia Minor.

***Stictotarsus* Zimmermann 1919** Mesepisternum punctate; hind femur with ventral face punctate.

The *griseostriatus* group

aequinoctialis (Clark 1862), N & Central America
coelamboides (Fall 1923), N America
dolerosus (Leech 1945), N America
expositus (Fall 1923), N America
funereus (Crotch 1873), N America
griseostriatus (DeGeer 1774), Holarctic

macedonicus (Guéorguiev 1959), S Europe
multilineatus (Falkenström 1922), NW Europe
otini (Guignot 1941), N Africa
panaminti (Fall 1923), N America
spenceri (Leech 1945), N America
striatellus (LeConte 1852), N America

The roffii group (all North American)*corpulentus* (Fall 1923)*corvinus* (Sharp 1887)*decemsignatus* (Clark 1862)*deceptus* (Fall 1923)*eximius* (Motschulsky 1859)**The duodecimpustulatus group***bertrandi* (Legros 1956), Spain*duodecimpustulatus* (Fab. 1792), Europe*grammicus* (Sharp 1882), N America*minipi* (Larson MS), Labrador*interjectus* (Sharp 1882)*minax* (Zimmerman 1982)*opaculus* (Sharp 1882)*roffii* (Clark 1862)*spectabilis* (Zimmerman 1982)*neomexicanus* (Zimmerman & Smith 1975), N America*procerus* (Aubé 1838), Mediterranean*titulus* (Leech 1945), N America**Scarodytes des Gozis** Ventral surface without microsculpture between punctures.*fuscitarsis* (Aubé 1836), Mediterranean*halensis* (Fab. 1787), Europe & N Africa*malickyi* Wewalka 1977, E Mediterranean*margaliti* Wewalka 1977, Israel*nigriventris* (Zimmermann 1919), Corsica*pederzani* Angelini 1973, E Mediterranean*ruffoi* Franciscolo 1961, Mediterranean*savinensis* (Zimmermann 1933), E Mediterranean**Nebrioporus Régimbart** Parameres apically sclerotized and hook-like.**Subgenus Zimmermannius Guignot** Anterior face of hind tibia with an additional row of punctures in most species, or more extensively punctate.*canaliculatus* (Lacordaire 1835), Europe*canariensis* (Bedel 1881), Canaries*cerisyi* (Aubé 1836), Mediterranean & Asia*dubius* (Aubé 1838), Madeira*formaster* (Zaitzev 1907), Asia*kiliani* (Peyerimhoff 1929), N Africa**Subgenus Nebrioporus s. str.** Elytron with subapical spine.**The kilimandjarensis group***kilimandjarensis* (Régimbart 1906), Africa**The abyssinicus group***abyssinicus* (Sharp 1882), E Africa*cooperi* (Omer-Cooper 1931), Ethiopia*scotti* (Omer-Cooper 1931), Ethiopia**The depressus group***anchoralis* (Sharp 1884), Japan*assimilis* (Paykull 1798), Europe*airumilus* (Kolenati 1845), Asia*balli* (Vazirani 1970), Orient*banajai* (Brancucci 1980), Arabia*brownei* (Guignot 1949), China*bucheti* (Régimbart 1898), S Europe*capensis* (Omer-Cooper 1953), S Africa*carinatus* (Aubé 1836), Spain*cazorlensis* (Lagar, Fresneda

& Hernando 1987), Spain

clarki (Wollaston 1862),

Canaries & Mediterranean

depressus (Fab. 1775), Holarctic*fenestratus* (Aubé 1836), S Europe*fabressei* (Régimbart 1901), S Europe*hostilis* (Sharp 1884), Japan*indicus* (Sharp 1882), India*insignis* (Klug 1833), Egypt & Asia*islamiticus* (Sharp 1882), Asia*kashmirensis* (Régimbart 1899), Orient*martinii* (Fairmaire 1858), Mediterranean*nemethi* (Guignot 1949), Africa*solivagus* (Omer-Cooper 1965), S Africa*vagrans* (Omer-Cooper 1953), S Africa*walkeri* (Van den Branden 1885), Arabia*septemvittatus* (Régimbart 1883), Sudan*tellinii* (Régimbart 1904), Ethiopia*lanceolatus* (Walker 1871), Arabia, Iran*laticollis* (Zimmermann 1933), China*laeviventris* (Reiche 1855), E Mediterranean*luctuosus* (Aubé 1836), S Europe*lynesi* (Balfour-Browne 1947), Sudan*macronychus* (Shirt & Angus 1992), N America*manii* (Vazirani 1970), Orient*mascatensis* (Régimbart 1897), Arabia, Asia*millingeni* (Balfour-Browne 1951), Arabia*princeps* (Sharp 1882), Sinai*ressli* (Wewalka 1974), Iran*rotundatus* (LeConte 1863), N America*sansi* (Aubé 1836), S Europe*satie* (Vazirani 1980), India*seriatus* (Sharp 1882), Arabia*simplicipes* (Sharp 1884), Japan*stearinus* (Kolenati 1845), E Mediterranean

& Asia Minor

suavis (Sharp 1882), E Mediterranean*sulphuricola* (Zaitzev 1951), TurkmenistanNILSSON, A.N. & ANGUS, R.B. 1992. A *turca* (Seidlitz 1887), Egypt, Asia.(Coleoptera: Dytiscidae) based on a phylogenetic study. *Ent. scand.* 23 275-288.

AFRICAN NEBRIOPORUS

Nebrioporus abyssinicus (Sharp 1882) is now into its sixth generic name. The group to which it belongs shares with some other *Nebrioporus* the subapical elytral spine, the fluting of the tip of the female elytra and the membranous sac on the paramere, the latter making it instantly recognisable as what we had come to know as *Potamonectes*. However, the body form and markings strongly resemble some *Oreodytes*. *N. abyssinicus* is known to be common in some parts of the Ethiopian mountains and also occurs on Mount Kilimanjaro and Mount Meru in Tanzania, as well as Kenya. *N. cooperi* (Omer-Cooper) is known only from Ethiopia as Guignot's Kilimanjaro specimens were *abyssinicus* var. *atratus* Régimbart. *N. scotti* (Omer-Cooper) and *N. tellinii* (Régimbart) are also restricted to Ethiopia. In addition to full descriptions and illustrations of the adults of this group, larvae referable to this group are described.

NILSSON, A.N. 1992. A revision of the East African *Nebrioporus abyssinicus* group (Coleoptera, Dytiscidae). *Entomologica Fennica* 3 81-93.

NORTH-WEST SPANISH HYDRAENA

Dr Juan Angel Díaz Pazos has kindly supplied copies of his doctoral thesis in bound form and on fiche. The thesis concerns detailed studies of the Hydraenidae of the Río Landro system and the first papers have been published. *Hydraena monstrosipes* is fully described, with its extraordinary hind legs. In the other paper, the aedeagus of *Limnebius ibericus* is shown to have a coiled duct running inside the bulb at its base. Other high power work reveals that the spermatheca and last abdominal tergite of the female have distinctive characters.

DÍAZ PAZOS, J.A. 1991. Estudio taxonómico y ecológico de los Hydraenidae (Coleoptera) de la cuenca del río Landro (Lugo, España). Tesis, Universidad de Santiago de Compostela.

DÍAZ PAZOS, J.A. & OTERO, J.C. 1992. Nuevos datos sobre *Hydraena* (*Haenydra*) *lusitana* Berthelemy & Terra, 1977 y *Limnebius* (*Limnebius*) *ibericus* Balfour-Browne, 1978 (Coleoptera, Hydraenidae), en Galicia. *Boln. Asoc. esp. Ent.* 16 161-169.

DÍAZ PAZOS, J.A. & OTERO, J.C. 1992. Precisiones anatómicas sobre *Hydraena* (*Haenydra*) *monstrosipes* Ferro, 1986 y apreciaciones acerca de su área de distribución (Coleoptera: Hydraenidae). *Elytron* (1991) 5 121-127.

BAGOUS ARDUUS AND RUDIS

A.A. Allen reviews the problems concerned with two poorly known species, the types of which need to be examined in conjunction with other European taxa.

Bagous arduus is apparently based on a unique male in Sharp's collection, other specimens referred to by Sharp having either disappeared or been reidentified as *longitarsis* Thomson. The specimen's aedeagus is distinctive, with a broad, flat and squarely truncate tip. The late Dr. Dieckmann saw a drawing of the aedeagus, but not the specimen itself, and commented that he did not know it among other European material. He had, however, seen plenty of variation in southern European material, making it just possible to regard *arduus* as an extreme form of *collignensis* (Herbst). Such extremes of variation do not occur in Britain, where *arduus* might still be considered distinct.

The type of *rudis*, sex unknown, is also unique, and resides in the Crotch Collection at Cambridge. Allen lists four points indicating the likelihood that this is *robustus* Brisout, a species feeding on *Alisma plantago-aquatica*, not so far recorded from Britain.

ALLEN, A.A. 1992. On *Bagous arduus* Sharp and *B. rudis* Sharp (Col.: Curculionidae). *Entomologist's Record* 104 199-201.

WEEVILS ON ELATINE

Flowers of the six-stamened waterwort (*Elatine hexandra* (Lapierre) DC) have been found to be fed on by larvae of the weevils *Nanophyes sahlbergi* (Sahlberg) and *Pelenomus olssoni* (Israelson). This is a rare water plant scattered across Europe. It occupies similar temporary muddy areas to water purslane on which *olssoni* was originally known. To confuse the issue both the weevil and that plant have changed names, *Phytobius* to *Pelenomus* and *Peplis portula* L. to *Lythrum portula* (L.) Webb.

DAUPHIN, P. 1992. Les Élatinacées, plantes-hôtes méconnues pour *Nanophyes sahlbergi* (Sahl.) et *Pelenomus olssoni* (Isr.) (Col., Curculionidae). *Bull. Soc. ent. Fr.* 97 65-68.

EGYPTIAN BEETLES

Rowyda Saleh has sent two papers about Ismailia. The keys cover Ephemeroptera, Odonata, Hemiptera, Diptera and Coleoptera; it is claimed that *Hygrotus versicolor*, *Enochrus halophilus* and *E. testaceus* are new for Egypt. The other paper concerns an 18 month survey during which the following beetles were recorded:- *Laccophilus umbrinus* Motschulsky, *Hydrovatus clypealis* Sharp, *Bidessus signatellus* Klug, *Coelambus confluens* Fab., *Hyphophorus solieri* Aubé, *Herophydrus guineensis* Aubé, *Hygrotus versicolor* (Schaller), *Potamonectes* (now *Nebrioporus*) *cerisyi* Aubé, *Rhantus suturalis* Macleay (as *pulversosus*), *Eretes sticticus* L., *Hydaticus leander* Rossi, *Paracymus aeneus* Germar, *Enochrus bicolor* Fab., *E. halophilus* Bedel, *E. parvulus* Reiche & Saulcy, *E. testaceus* Fab., *Sternolophus solieri* Lapouge, and *Ochthebius meridionalis* Rey. Rowyda, in her accompanying letter, says that she hopes to come to London soon and that she needs information on the taxonomy, ecology, biology, phylogeny and cytotaxonomy of species likely to occur in Egypt. Members who wish to help should write to her (Mrs Rowyda Salah Saleh, Faculty of Sciences, Zoology Department, Suez Canal University, Ismailia, Egypt).



SALEH, R., ZALAT, S. & ABO-GHALIA, A. 1992. Relative population density and seasonal abundance of some aquatic insects in Ismailia Governorate. *Journal of the Egyptian German Society of Zoology* 9 189-201.

ZALAT, S., SALEH, R. & ABO-GHALIA, A. 1992. Taxonomic and ecological keys of aquatic insects in Ismailia Region. *Journal of the Egyptian German Society of Zoology* 9 259-275.

ADDITION TO GUÉORGUIEV BIBLIOGRAPHY

Hans Fery has drawn attention to an addition to Anders Nilsson's list in *Latissimus* 1:

GUÉORGUIEV, V.B. 1958. Verzeichnis der Wasserkäfer Bulgariens. *Entomologische Blätter* 54 44-51.

This bulgarian checklist includes not only Hydradephaga but also Hydrophilidae s. lat., Scirtidae (as Helodidae), Heteroceridae and Dryopidae.

WATER BEETLE CHANGES ASSOCIATED WITH LIMING & FISH

Loch Fleet, an upland loch on granite in southern Scotland, lost its fish owing to acidification by 1975. The loch became the centre of an intensive programme associated with liming parts of its catchment. Large embayments to catch water from four parts of the catchments, two limed and two unlimed, were created by the use of impermeable plastic curtains. Additional liming was done on a peat bog feeding into the main inflow to the loch. Liming done in 1986 and 1987 achieved a pH exceeding 6.5 at the main inflow, and trout (*Salmo trutta* L.) were successfully introduced into the main body of the loch in 1987 and 1988.

No, this wasn't done as a water beetle experiment, but we were allowed to do a small amount of sampling so long as it didn't interfere with the main work. When first visited in 1985, the loch's edge seethed with *Hydroporus palustris* (L.). Beetles such as *Stictotarsus griseostriatus* (DeGeer) [You first saw this combination in use in *Latissimus*!] and *Agabus arcticus* (Paykull) were also frequent. The annoying thing was it was not possible clearly to separate the effects of the reintroduction of fish and the impact of a sudden change in pH. It appeared that both contributed to the decline in beetle numbers and diversity, but the fish undoubtedly reduced the numbers of *H. palustris*, as evidenced by large differences in numbers between open water (with fish) and impounded embayments (largely without fish). The most interesting feature of the study was that *Nebrioporus depressus elegans* (Panzer) increased in 1987 at the same time as *H. palustris* decreased. This suggested that *N. elegans* was better adapted to survive fish predation. Its decline in 1988 was explained in the paper by a change in the fish's target, but further sampling in 1992 has demonstrated the complete turnover of the beetle population, with *N. elegans* common and *H. palustris* almost absent.

FOSTER, G.N. 1991. Aquatic beetle population changes associated with recreating a trout fishery by liming a lake catchment. *Arch. Hydrobiol.* 122 313-322.

ADDITIONS TO THE BRITISH LIST - *DRYOPS GRISEUS* AND SCIRTIDS

Colin Johnson detected the true *Dryops griseus* in Norfolk some time ago, after Olmi had noted that *griseus* auctt. Brit. was *similaris* Bollow. *D. griseus* s. str. was put into the British Red Data Book in 1987 but its introduction to the British list may now be considered formalized. In passing, Colin notes that the figures of the aedeagophores of *similaris* and *griseus* were transposed in Steffan's treatment in Freude, Harde, Lohse (1979). They are correct in the original paper (Steffan 1961), here reproduced.

One of the many reasons for ignoring Scirtidae is that in Britain we have been waiting for years for someone to update the checklist. Records for the following *Elodes* spp. are given:-

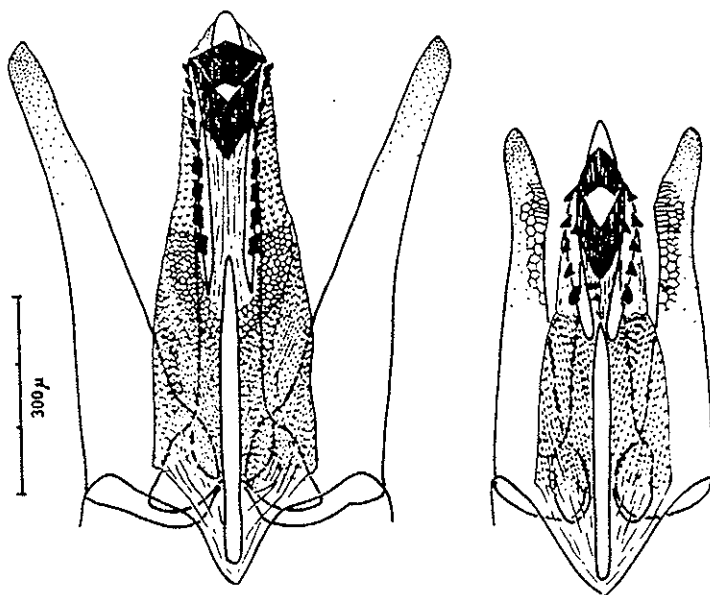
minuta (L.), *pseudominuta* Klausnitzer, *elongata* Tournier, *tricuspis* Nyholm. No aids to identification are given but the formalization of these records is to be welcomed. The reference to Nyholm was accidentally omitted from the paper and Colin has kindly supplied a copy of it, listed below. Another paper well worth getting hold of, by Viggo Mahler and Michael Hansen, keys out and illustrates *Elodes marginata* (Fab.), *pseudominuta*, *elongata* (as *koelleri* Klausnitzer), *tricuspis* Nyholm (as *elongata* Klausnitzer, nec Tournier) and *minuta* (L.), the latter strangely not being found in Denmark.

JOHNSON, C. 1992. Additions and corrections to the British list of Coleoptera. *Entomologist's Rec.* 104 305-310.

MAHLER, V. & HANSEN, M. 1983. De danske arter af *Helodes* Latreille, 1796 (Coleoptera, Helodidae). *Ent. Meddr* 50 49-53.

NYHOLM, T. 1985. The identity of *Elodes elongata* Tournier, 1868 (Coleoptera: Helodidae). *Entomologica scandinavica* 15 435-441.

STEFFAN, A.W. 1961. Vergleichend-mikromorphologische Genitaluntersuchungen zur Klärung der phylogenetischen Verwandtschaftsverhältnisse der mitteleuropäischen Dryopoidea (Coleoptera). *Zoolog. Jb. Syst. Bd.* 88 255-354.



A NEW BRITISH RECORD FOR *HALIPLUS FURCATUS* (SEIDLITZ)

N H Collinson, D Walker, J Biggs, A Corfield, M Whitfield & P Williams

In March 1992, whilst collecting samples for an undergraduate project on temporary ponds at Oxford Polytechnic (now Oxford Brooke University), NHC was fortunate to discover a population of *Haliplus furcatus*, listed as a Red Data Book 1 species in Britain. Fifteen individuals were recorded in a hand-netted sample timed to last three minutes. The specimens were determined by DW.

The temporary pond was located about ten miles north of Oxford in an area of arable farmland. Its immediate surrounds were dominated by dense hawthorn scrub. The pond was quite large for a temporary site in Oxfordshire (820 square metres). It was well vegetated with wetland grasses and water mint occupying most of the pond. It is thought that the site usually dries hard between May and July each year.

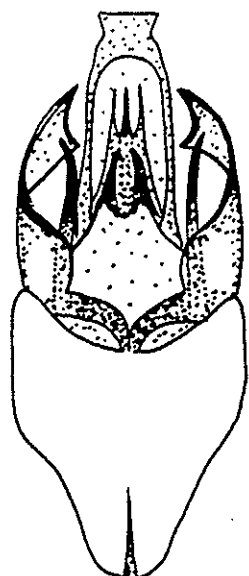
The only other British site for *H. furcatus* known at present is a seasonal pingo on East Walton Common, Norfolk. On the continent the species is also associated with seasonal sites, particularly pingo systems (G.N. Foster, pers. comm.). This new occurrence in Oxfordshire confirms the preference of *H. furcatus* for temporary sites, but suggests that in Britain the species is not entirely restricted to ancient, post-glacial fen systems.

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Received December 1992

CHASMOGENUS REVIEW

This paper must have gone to press before Michael Hansen's review became available. Fortunately, both works agree in reinstating *Chasmogenus* as a genus distinct from



Helochaeres but they disagree in the treatment of *Crephelochaeres* Kuwert. This was synonymized with *Chasmogenus* by d'Orchymont when he downgraded it to subgeneric status. Later he again separated *Chasmogenus* and *Crephelochaeres* as two distinct subgenera of *Helochaeres*, the distinction between them being mainly the number of antennal segments (8 in *Chasmogenus*, 9 in *Crephelochaeres*), and the form of the aedeagus. Hansen retains *Crephelochaeres* as a synonym of *Chasmogenus*, differences between them being regarded as subtle. Hebauer treats *Crephelochaeres* as a subgenus of *Chasmogenus*. Hebauer recognises 24 species, six of them new to science, the three members of *Chasmogenus* s. str. being South American, those of the subgenus *Crephelochaeres* being predominantly African.

The species are 2.5-5.5 mm long, with an elongate oval body form. The long maxillary palps resemble those of *Helochaeres*. Franz Hebauer keys each species and provides each with an account, including an illustration of the aedeagophore. The new species *molinaei*, *molluscus*, *paramollis*, *rubellus*, *rudis* and *szeli* are all from Africa.

European readers should note that we have one species, *Chasmogenus* (*Crephelochaeres*) *livornicus* Kuwert, found in Italy, Yugoslavia, Greece, Israel and Gabon. This species resembles *Cymbiodyta marginella*, from which it may be distinguished by its genitalia, the pentamerous tarsi and the longer maxillary palps.

HEBAUER, F. 1992. The species of the genus *Chasmogenus* Sharp, 1882 (Coleoptera, Hydrophilidae). *Acta Coleopterologica* 8 61-92.

FRENCH ATLAS PART 2 - GYRINIDAE, HYGROBIIDAE, NOTERIDAE

P. LEBLANC, 1991. *Atlas Permanent des Hydrocanthares de France 2 Gyrinidae, Hygrobiidae, Noteridae*. ISSN 1151-1591 - available at 50 FF from AGURNA, Pavillon Saint-Charles, 10220 Piney, France.

■ Pascal Leblanc has now produced the second part of the "Atlas Permanent", the first having been concerned with the Haliplidae. the same style is followed, with an introductory pictorial key, computerised drawings and maps showing distribution by département. It is interesting to see that species usually considered to be common, e.g. *Gyrinus marinus* Gyllenhal, have a real distribution, in that example confined to the east. Equally, as with most maps, there is still a chance for people to make their own impression, some areas, like the Haute-Loire, being almost devoid of records. Perhaps it is more important to contact Pascal at the AGURNA address above to make sure your dytiscid records are included in Part 3.

LATVIAN ADEPHAGA

It is promising that the first paper published in *Acta Hydroentomologica Latvica* concerns water beetles. Dr. Z. Spuris, better known as a dragonfly specialist, has brought together a catalogue of about 108 adaphagan species recorded in Latvia since the first record in 1778, with perhaps the best known records being those of Seidlitz, including the newly described *furcatus* Seidlitz 1887, never found again in Latvia. The paper is in latvian but latin comes to our aid to some extent. Fifteen species of Haliplidae are known, *fulvicollis* Erichson being perhaps the most interesting species, last reported in 1942. So long as one is familiar with the problems, the names are recognisable and reinterpretable in these changed times. The Bern Covention species, *Dytiscus latissimus* and *Graphoderus bilineatus* were last recorded in 1960, in one of Dr. Spuris's earlier publications. Dr. Spuris has volunteered to be an IUCN contact. Members should write to him, sending reprints, at Miera iela 19-6, LV 2169 Salaspils, Latvia.

SPURIS, Z. 1991. Latvijas Kukainu Katalogs. 10. Adefagas Udensvaboles (Haliplidae, Noteridae, Dytiscidae, Gyrinidae). *Acta Hydroentomologica Latvica* 1 5-23.

INVERTEBRATE CONSERVATION HANDBOOK

Peter KIRBY, 1992. *Habitat Management for Invertebrates, a Practical Handbook*.

ISBN 0 903138 55 7 available at £11.50 (including postage and packing) from Conservation Management Advisory Service, RSPB, The Lodge, Sandy, Beds. SG19 2DL, England. Published by the Royal Society for the Protection of Birds and the UK Joint Nature Conservation Committee.

■ This 150 page A4 softback handbook is mainly directed at site managers, but those who are fully converted to the need for invertebrate conservation will find it of value. The choice of RSPB as a joint publisher is a master stroke, making it much more likely to achieve the book's objective than publication by an entomological organisation - a very sad but true comment on the present imbalance in conservation policy. The introduction emphasises the special features and demands of invertebrates, the rest of the book being divided into coverage of woodland, grasslands, lowland heaths, freshwater wetlands and coastlands. Upland invertebrates were deliberately omitted because they and their requirements are poorly understood. The book is very well laid out, with important points emboldened and the text broken up by the author's own illustrations.



Wetland sites get a good airing, with emphasis on the need for great care in managing sites by vegetation cutting and the creation of open water. The importance of keeping temporary pools temporary is also emphasised. What could not have been said is that the wetlands with the lowest invertebrate interest include sites with artificially large populations of wildfowl. In fact, birds themselves receive scant mention in the book. Perhaps there is another world in which an ornithologist has written a book showing how to manage 75,000 hectares of invertebrate reserve to improve the habitat for birds?

AGABUS SYNONYMS

Further research by Javier Fresneda and Hans Fery indicates that the Iberian *parvulus* Fresneda & Hernando 1989 is a synonym of *Agabus heydeni* Wehncke. A lectotype of *heydeni* is designated from the Paris Museum. Gunther Wewalka designates a lectotype for *Agabus faldermanni* Zaitzev, and shows that *palaestinus* (Zimmermann) is a junior synonym; this species occurs in the Caucasus, in Turkey and in Israel.

FRESNEDA, J. & FERY, H. 1992. Designación de Lectotipo de *Agabus heydeni* Wehncke, 1872, y apuntes sobre la identidad de *Agabus parvulus* Fresneda & Hernando, 1989 (Col. Dytiscidae). *Nouv. Revue Ent.* 9 130.

WEWALKA, G. 1991. *Agabus palaestinus* (Zimmermann) - a junior synonym of *Agabus faldermanni* Zaitzev (Coleoptera: Dytiscidae). *Koleopterologische Rundschau* 61 19-20.

MALTESE ADEPHAGA

Saverio Rocchi and Stephen Schembri have assembled records of the following for Malta: *Halipilus lineatocollis* Marsham), *Laccophilus minutus* (L.), *L. hyalinus* (DeGeer), *Coelambus confluens* (Fab.), *Hyphydrus aubei* Ganglbauer, *Herophydrus musicus* (Klug), *H. guineensis* Aubé, *Hydroporus tessellatus* Drapiez, *Graptodytes varius* (Aubé), *Potamonectes* (now *Nebrioporus*) *cerisyi* Aubé, *Agabus nebulosus* Forster, *Rhantus suturalis* Macleay (as *pulverosus*), *Colymbetes fuscus* L., *Meladema coriacea* Castelnau, *Dytiscus circumflexus* Fab. and *Gyrinus dejeani* Brullé.

ROCCHI, S. & SCHEMBRI, S. 1992. I Coleotteri Idrodefagi delle Isole Maltesi (Coleoptera Halipilidae, Gyrinidae e Dytiscidae). *Boll. Soc. ent. ital., Genova* 124 121-126.

THE FOURTH INTERNATIONAL CONFERENCE ON CLASSIFICATION, PHYLOGENY & NATURAL HISTORY OF HYDRADEPHAGA

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There has been an international conference on Hydradephaga every four years since 1982, often in conjunction with the International Congress of Entomology. The most recent Congress was held in Peking, and not many of us were able to attend. Dr. Brancucci and I are interested in maintaining the approximately four year cycle of the Hydradephaga Conference by planning one for 15-20 August 1993.

1. LOCATION & COSTS The Conference will be held at Reinhardt College, located approximately 45 miles north of Atlanta, Georgia. All necessary conference facilities are available at no cost, rooms and dining facilities are inexpensive, and extremely interesting collecting is immediately available.

Three dormitories are available on campus. They vary somewhat in design, the most convenient being Roberts Hall. The total cost for a room and all meals from 15 August to 20 August is \$120 for one person, \$80 for a second person, and \$20 for each additional person. Children six and under can stay at no cost. At Roberts Hall, three people can comfortably stay in one room. Before 15 August and after 20 August costs are \$20/day for one or \$45/day for two persons.

Please let us know your flight plans. We will try to arrange transportation to and from the airport; however, if there are complications, ground transport will be approximately \$70-100 to the college.

2. CONFERENCE ACTIVITIES If enough people are interested, up to two collecting trips (each about three days long) will be arranged. The first will be scheduled from about 13-15 August and the second from 19-21 August. Based on collecting experience in the south-east, the most interesting areas are: 1) the central basin of Tennessee. This region harbours a unique lotic fauna. Approximately 90% of the species of *Heterosternuta* and *Neoporus* occur in central Tennessee. 2) Southern Georgia and western Florida. There are a number of interesting dytiscids in this region. There is a good chance that *Spanglerogyus* can be collected along with *Gyrinus*, *Gyretes* and *Dineutus*. Transport and basic collecting equipment, including nets, are available for six to seven people on each foray. Relatively inexpensive motel accommodation can be obtained along the way. Camping facilities are also available.

3. SCOPE OF PAPERS The scope remains essentially the same as that of its predecessors.

Historical aspects The influence of hydradephegan workers such as Aubé, the Balfour-Brownes, Bertrand, Blunck, Guignot, Régimbart, Sharp and Zimmermann.

Morphology Analysis or re-analysis of structure in mature and immature stages, especially the correlation between structure and function.

Taxonomy, phylogeny and zoogeography Analysis of new species, fossils, subfossils, newly described developmental stages, taxonomic revisions, the relative phylogenetic position of taxa, phylogeny and distribution, and the use of isozymes, karyology, and defensive compounds in hydradephegan systematics. Regional as well as more extensive faunal analyses are also encouraged.

Physiology We are very interested in contributions pertaining to nutrition, digestion, respiration, sense organs, etc.

Natural history Reports emphasizing various aspects of water beetle ecology, behaviour, parasites of water beetles, and diversity will facilitate many other kinds of investigation.

Materials and methods Rearing techniques for immature stages, collecting techniques, preservation and storage, and reports on location and status of important collections, fossil specimens and types.

4. PUBLICATION OF PAPERS We are planning to publish peer-reviewed papers in *Entomologia Basiliensis*. Normal page charges are \$50 per page; however, reduced charges will be allowed for the conference proceedings.

We have done some background work on the potential of this FOURTH INTERNATIONAL CONFERENCE. Listed below are scientists distinctly interested in attending, together with the subject of their paper, if known.

Dr R Beutel (Universität Tübingen); Dr O Bistrom (Finnish Museum of Natural History); Dr M Brancucci; Dr Warren Bringham (Illinois Natural History Survey - *Peltodytes* systematics); Prof. Dr Konrad Dettner (Bayreuth Universität); Dr Hans Fery (Berlin); Dr Bill Hilsenhoff (University of Wisconsin - dytiscid life histories); Dr S Juliano (Illinois State University - community structure and competition in dytiscid communities); Prof. Dave Larson (Memorial University of Newfoundland - faunal analysis of the Dytiscidae of New Guinea); Dr Anders Nilsson (University of Umeå); Dr Sule Oygur (American Museum of Natural History - gyrid systematics); Dr Rob Roughley (University of Manitoba - *Oreodytes* systematics); Dr Paul Spangler (Smithsonian Institution - noterid phylogeny); Dr G William Wolfe; Dr Gunther Wewalka (Vienna).

The Conference will be held so long as about 15-scientists have committed funds for room and board/or have indicated that they will definitely attend by 1 April 1993. You will be advised regarding attendance. ALL FUNDS CAN BE REIMBURSED PRIOR TO 15 AUGUST.

If you are definitely interested, please contact Bill Wolfe by 15 March 1993. In all probability, up to two papers can be presented per person. Please send an abstract of any papers that you will present.

5. TENTATIVE CONFERENCE SCHEDULE

12-15 August: arrivals and collecting trip (Tennessee)

16-18 August: papers and Conference activities

19-21/22 August: departures and collecting trip (South Georgia/Western Florida).

CANADIAN SUBARCTIC DYTISCIDAE

Forty-four species of Dytiscidae are recorded from the Quebec area. The habitats in which they live are classified into rock pools (both upper tidal and inland), paludal bogs, willow pools, mesotrophic ponds and "lotic pools", sandy-bottomed pools with cold and clear moving water. The list includes many names familiar to northern Europeans, 19 species being classed as holarctic. Of particular interest is the habitat segregation between the species pair of *Ilybius picipes* (Kirby) and *I. angustior* (Gyllenhal), the latter being mainly a rock pool species, *picipes* being mainly in paludal bogs (mounds in *Sphagnum* bogs containing ice lenses - not the same as pingos but another distinctive feature of the permafrost zone).

ALARIE, Y. & MAIRE, A. 1991. Dytiscid fauna (Coleoptera: Dytiscidae) of the Québec Subarctic. *The Coleopterists Bulletin* 45 350-357.

THE ANCESTRAL SETATION OF LARVAL HYDROPORINAE

The ancestral distribution of setae and pores is deduced from analysis of the first instars of thirty Hydroporinae and representatives of other dytiscid subfamilies and Hydradephan families.

ALARIE, Y. 1991. Primary setae and pores on the cephalic capsule and head appendages of larval Hydroporinae (Coleoptera: Dytiscidae: Hydroporinae). *Can. J. Zool.* 69 2255-2265.

THE HABITAT AND LIFE-CYCLE OF *DYTISCUS SEMISULCATUS*

In eastern Germany larvae and adults of this species have been found in small, clean, plant-rich, slow moving streams, and even in drainage channels. It is usually thought to be an inhabitant of peaty stagnant waters. Larvae were found between late autumn and May.

BRAASCH, D. & BELLSTEDT, R. 1991. *Dytiscus semisulcatus* Müller, 1776 - ein Bewohner von Meliorationsgräben (Coleoptera: Dytiscidae). *Koleopterologische Rundschau* 61 21-24.

HYDRAENID CHROMOSOMES

A study of 19 species of *Hydraena*, *Ochthebius* and *Limnebius* shows that Hydraenidae, with XX in the female and XO in the male, have different sex chromosomes to Hydrophilidae, with XY or XYp in males. The hydraenid arrangement is relatively unusual in Coleoptera.

The subgenus *Phothydraena*, represented by English *testacea* Curtis, with 12 chromosome pairs, differs from *Hydraena* s.s., with nine. *H. brachymera*, originally described by d'Orchymont as a male form of *riparia* Kugelann but long since considered a true species, is shown to differ slightly from *riparia*, *britteni* Joy being even more distinct.

The next time you catch a *Limnebius nitidus* (Marsham), spare a moment to ponder on how you might count its chromosomes! Robert and Juan managed this from a testis preparation but couldn't quite get down to viewing the karyotype. Perhaps they should have used *aluta* instead.

ANGUS, R.B. & DIAZ PAZOS, J.A. 1991. A chromosomal investigation of some European Hydraenidae. (Coleoptera: Hydraenidae). *Koleopterologische Rundschau* 61 95-103.

HYDROPHILOID CHROMOSOMES

Karyotypes are illustrated for Danish *Georissus crenulatus* (Rossi), Dutch and Russian *Spercheus emarginatus* (Schaller) and English, Greek and German *Hydrochus*. In all cases the male is the heterozygous sex, and with all but *H. elongatus* (Schaller), the Y chromosome is dot-like, all species forming the "parachute association" with X at meiosis. *Georissus* has 9 pairs of chromosomes (+ XX/Y), *Spercheus* 7 + XX/Y and *Hydrochus* 10 + XX/Y. Although the number of species and specimens studied is limited, the results are in accord with the present treatment of each genus from Hydrophilidae s.s. in separate families. The basic Polyphagan karyotype is 9 + XYp but it is argued that this arrangement in *Georissus* could have been acquired secondarily. The highly distinctive karyotype of *Spercheus* provides another character placing Spercheidae well apart from other Hydrophiloidea.

In a separate paper the chromosomes of five European species of *Berosus* have been investigated. The chromosomes are generally longer than in most Hydrophilidae, four species having 16 plus sex chromosomes, *B. signaticollis* Charpentier having 18. The male has the XY "parachute" arrangement. The reprint supplied by Robert Angus contains a correction of the interpretation of *B. affinis* Brullé.

SHAARAWI, F.A. & ANGUS, R.B. 1991. Chromosomal analysis of some European species of the genus *Berosus* Leach (Coleoptera: Hydrophilidae). *Koleopterologische Rundschau* 61 105-110.

SHAARAWI, F.A.I. & ANGUS, R.B. 1992. Chromosomal analysis of some European species of the genus *Georissus* Latreille, *Spercheus* Illiger and *Hydrochus* Leach (Coleoptera: Hydrophiloidea). *Koleopterologische Rundschau* 62 127-135.

GB NETS

Not another free advertisement for Gill Baldwin nets? Why not? The 1993 catalogue is out and includes the usual range of robust gear. The standard water net frame costs £17.40, a circular version costs £18.70, and the standard bag is now £8.00, to which must be added Value Added Tax and carriage costs. Rates may have to be higher for enquiries from abroad to cover the absurd bank charges associated with foreign money transactions. Contact Gill Baldwin, Linden Mill, Hebden Bridge, West Yorks. HX7 7DP - telephone 0422 845365.

PSALITRUS (OMICRINI)

Franck Bameul has described 12 new species of these minute, litter-living sphaeridiines. Included are illustrations of the female genitalia, right down to the sperms adhering to the spermatheca. A brief note describes the way in which the aedeagus may flex in action.

BAMEUL, F. 1990. Observation sur la biomécanique de l'édéage des *Psalitrus* d'Orchymont (Col. Hydrophilidae). *Nouv. Revue Ent.* 3 302.

BAMEUL, F. 1991. On some new or little known *Psalitrus* d'Orchymont from Africa and Asia (Coleoptera, Hydrophilidae, Sphaeridiinae). *Bull. Annls Soc. r. belge Ent.* 127 87-96.

BAMEUL, F. 1992. Description of two new *Psalitrus* d'Orchymont from Nepal (Coleoptera, Hydrophilidae, Sphaeridiinae). *Acta Coleopterologica* 8 103-108.

BAMEUL, F. 1992. Revision of the genus *Psalitrus* d'Orchymont from southern India and Sri Lanka (Coleoptera: Hydrophilidae: Omicrini). *Systematic Entomology* 17 1-20.

SPHAERIDIUM, HYDROCHUS & STORKIA

Arno van Berge Henegouwen begins coediting the new journal, *Storkia*, emanating from The Hague Museon, with the battle cry "Taxonomy should strike back". With the debate continuing about whether the number of species yet to be described is more like one million than 78 million, Arno knocks off four more, *Sphaeridium eximium*, apparently widely distributed in Africa, *S. aschenborni* in southern Africa, *S. weiri* from Zimbabwe and *Hydrochus nooreinus* from southern Spain, sharing honours on the last-named with Carmen Sainz-Cantero. The Australian government has been anxious to establish dung-inhabiting beetles in Australia, not just to stop the outback disappearing under cow manhole covers, but also, in the case of *Sphaeridium*, to act as a biocontrol agents for the bush flies that breed in dung. That seems as good a reason to name species as any. Of wetter interest is the *Hydrochus*, yet another Spanish endemic, occupying permanent headwater streams in the south.



key to 18 *Donacia* spp. and the six (or now four) *Plateumaris*, plus good quality drawings of the aedeagophores and spermathecae. The differences between the lumped species are not convincing but other differences are well worth knowing about.

BORDY, B. 1983. Donaciini (Col. Chrysomelidae) entre Saône et Doubs. *Bulletin de la Société entomologique de Mulhouse* 1983 17-30.

NEW PAPUAN HYDATICUS

Hydaticus okalehubyi is described from the West Papuan Highlands. It belongs to the *pacificus* group.

BALKE, M. & HENDRICH, L. 1992. Ein neuer Schwimmkäfer der Gattung *Hydaticus* Leach (Coleoptera: Dytiscidae) aus dem Hochland von West Papua. *Mitt. schweiz. Ent. Ges.* 65 297-302.

STORKIA



van BERGE HENEGOUWEN, A.L. 1992. Notes on the genus *Sphaeridium* Fabricius in tropical africa with descriptions of three new species (Coleoptera: Hydrophilidae, Sphaeridiinae). *Storkia* 1 14-24.

van BERGE HENEGOUWEN, A.L. & SAINZ-CANTERO, C.E. 1992. *Hydrochus nooreinus*, a new species from Spain (Coleoptera, Hydrochidae). *Storkia* 1 26-28.

FORMER TREASURER IN SICILIAN CAVE MYTH

The photographer apparently took four hours to get this shot of Polyphemus Sinclair, used in *The Observer* newspaper of 27 December 1992. The photographer claimed that Magnus had 10,000 beetles. He must have counted them himself because Magnus hasn't bothered to. Coleopterists should be able to spot the deliberate mistake.

FRENCH DONACIINES

As a result of the lumping of *Plateumaris discolor* with *sericea*, and *affinis* with *rustica*, Philippe Richoux has drawn attention to a 1983 paper by his friend Bernard Bordy. Apart from giving records for several parts of France, this paper also contains a

IRISH WATER BEETLE ASSEMBLAGES

This analysis is based on 289 recent water beetle lists from all over Ireland. These are subjected to multivariate analysis, and, whilst recognising considerable overlap, they can be divided into ten types typically associated with: deep rivers; rivers with riffles; puddles; canals and lakes with rich vegetation; ponds and ditches; turloughs; natural, minerotrophic fens; cutover bogs with base enrichment; peat bogs; montane flushes.

As a new step in evaluating conservation status, the post-1950 records of 165 species of water beetle in Ireland were used to provide species scores. Some of these scores were modified to take into account the greater conservation importance of species largely or entirely confined to natural habitats (doubling the score), as opposed to those that colonise man-made habitats (halving the score). This gave points values from 256 for the rarest species (*Hydrochus brevis* (Herbst) and *Bagous brevis* Gyllenhal) to 1 for the commonest species. The assemblage types generally scoring highly were montane flushes, turloughs and minerotrophic fens, though the highest mean quality scores were for two small, montane loughs. The cutover bogs had the greatest diversity, as measured by species numbers, and the best such bogs were in Down and Antrim.

"Turloughs" are lakes on karst that fill and empty almost without warning. They support a specialist community of "edge moss dwellers" previously identified by David Bilton. Scragh Bog was the first minerotrophic fen discovered to be rich in water beetles, again by David. Cutover bogs occur all over Ireland and provide excellent habitats for the larger dytiscids. The best of these bogs appear to be in Northern Ireland, where some receive base-rich water and achieve an extraordinary diversity of habitat types. The Montiaghs (more or less pronounced "Munchies") on the Lough Neagh floodplain have to be seen to be believed - each hand-cut pond differs from its neighbours, providing a wonderful place for ecological studies.

The listing of species, which was supposed to act as a modern check-list, has already been improved upon. It is possible to discern a few interesting species records in the paper, but that was not its main purpose. Hopefully the author line-up will rearrange itself to get some important discoveries published, specially those in Northern Ireland, where several rare species have been overlooked in the past.

FOSTER, G.N., NELSON, B.H., BILTON, D.T., LOTT, D.A., MERRITT, R., WEYL, R.S. & EYRE, M.D. 1992. A classification and evaluation of Irish water beetle assemblages. *Aquatic Conservation: Marine and Freshwater Ecosystems* 2 185-208.

IRISH PEATLAND CONSERVATION COUNCIL

The Winter 1992 edition of *Peatland News* is not just concerned with Irish bogs as Swiss mires receive special coverage. However, the most alarming item of news concerns Scragh Bog, one of the Westmeath minerotrophic mires, with *Hydroporus scalesianus*, *H. glabriusculus* and other relict species. In April 1992, Ballynagall Farms submitted proposals for a large scale piggery about a kilometre from the bog. The Environmental Impact Statement prepared by the Teagasc, the Agricultural Research Board, did not mention Scragh Bog and apparently included the statement "... slurry is not being spread in any area of scientific interest." However, the yield of slurry from a 500 sow unit is estimated at 7,490 cubic metres per annum and it has to go somewhere. The first attempt to get planning permission was refused but the case is by no means over. If you want to help IPCC in its work, protecting such sites, write to them at their new address (Capel Chambers, 119 Capel Street, Dublin 1, Eire). And remember that it was a Dutchman, Dr. Matthijs Schouten, who engineered the purchase of Scragh Bog in the first place.

A PORTUGUESE RHITHRODYTES

At the risk of *Latissimus* degenerating into "What I did on my holidays", one has to mention a brief description of the female of a new species of *Rhithrodytes* found below a spring beside the Rio Labruja in Alto Minho, Portugal on 5 January 1991. The reason for specifying the date so closely is that, having strained my unaided eyes in the gloom to see that I had two females of something apparently new to science, I revisited the site on 10 January, only to discover that the trees sheltering the spring had been felled and the spring itself buried below the furrows of a new *Eucalyptus* plantation. Hans Fery couldn't find any specimens in July of that year but found more material in the next winter,

 unfortunately just too late for the proofs of the paper. Hans will have the task of describing the males of this species, which appears to be closely related to *bimaculatus* (Dufour), also geographically the nearest of the four other species of this offshoot of *Graptodytes*. Franck Bameul has got me worried by drawing my attention to similar proximities to *numidicus*; the totally obscure markings of the new taxon made me think that I must have a new species, but there remains the embarrassing possibility that we have a colour form of another, more brightly marked taxon.

The new species is named *agnus* (= lamb) in honour of Hans Schaefflein (= lamb), but also happens to be an anagrammatization of another venerable beetle. **GNF**

FOSTER, G.N. 1992. A new species of *Rhithrodytes* Bameul (Coleoptera: Dytiscidae) from Portugal. *Aquatic Insects* 14 249-253.

GENETIC STUDIES ON *HYDROPORUS GLABRIUSCULUS*

Nineteen enzyme systems were originally studied in populations of *Hydroporus glabriusculus* from the Norfolk pingos in England, two Westmeath bogs in Ireland, one of the Scottish Borders Mosses, and Umeå. Nine loci for seven of the enzymes were identified and used for genetic analysis. This is heavy stuff but the gist appears to be that *H. glabriusculus* populations are divided into small demes between which there is limited gene flow. These demes occupy small pockets of wet moss in shallow bogs, the largest sites having the greatest genetic diversity. The Norfolk populations show least variation, indicating that "bottlenecking" of populations took place on the Norfolk Brecklands during the Late Glacial. The Swedish population is not distinct from the relict populations of the British Isles.

One wonders about the bottlenecking that may have occurred in the Brecks more recently as a result of droughts and intensified groundwater extraction in the past couple of years. However, English Nature appear to have no interest in such things, with the termination of the East Anglian fen survey started by their predecessor. *Hydroporus glabriusculus* is only likely to survive in England if it can dust off its corporate image, perhaps by sporting a ludicrous common name and running off some business cards. As regards Ireland and the stronghold on Scragh Bog, see the item below.

BILTON, D.T. 1992. Genetic population structure of the Postglacial relict diving beetle *Hydroporus glabriusculus* Aubé (Coleoptera: Dytiscidae). *Heredity* 69 503-511.

BRITISH RECORDING SCHEME GOES ELECTRONIC - DATA CALL FOR NW ENGLAND

Funding by the Joint Nature Conservation Committee has permitted the acquisition of a DX-486 computer and the software associated with RECORDER, Stuart Ball's recording package. English Nature's administrative region of North-West England is the first target for treatment. About 10,000 records have been put on file, 4109 for Cumberland (vc 70), 1731 for Westmorland (vc 69), 1533 for SW Yorkshire (vc 63), 237 for Mid-Lancashire (vc 60), 955 for South Lancashire (vc 59) and 582 for the Wirral part of Merseyside (within Cheshire, vc 58). Whereas the program contains many desirable features, the present manual, like so many software manuals, leaves a lot to be desired. It goes into some detail about the provisions of the Data Protection Act, without really explaining this ludicrous piece of legislation properly. The most sensible procedure seems to be to record biographical details of recorders only after they have died.

GYRINUS IN NEW GUINEA - SIZE AND A NEW SPECIES

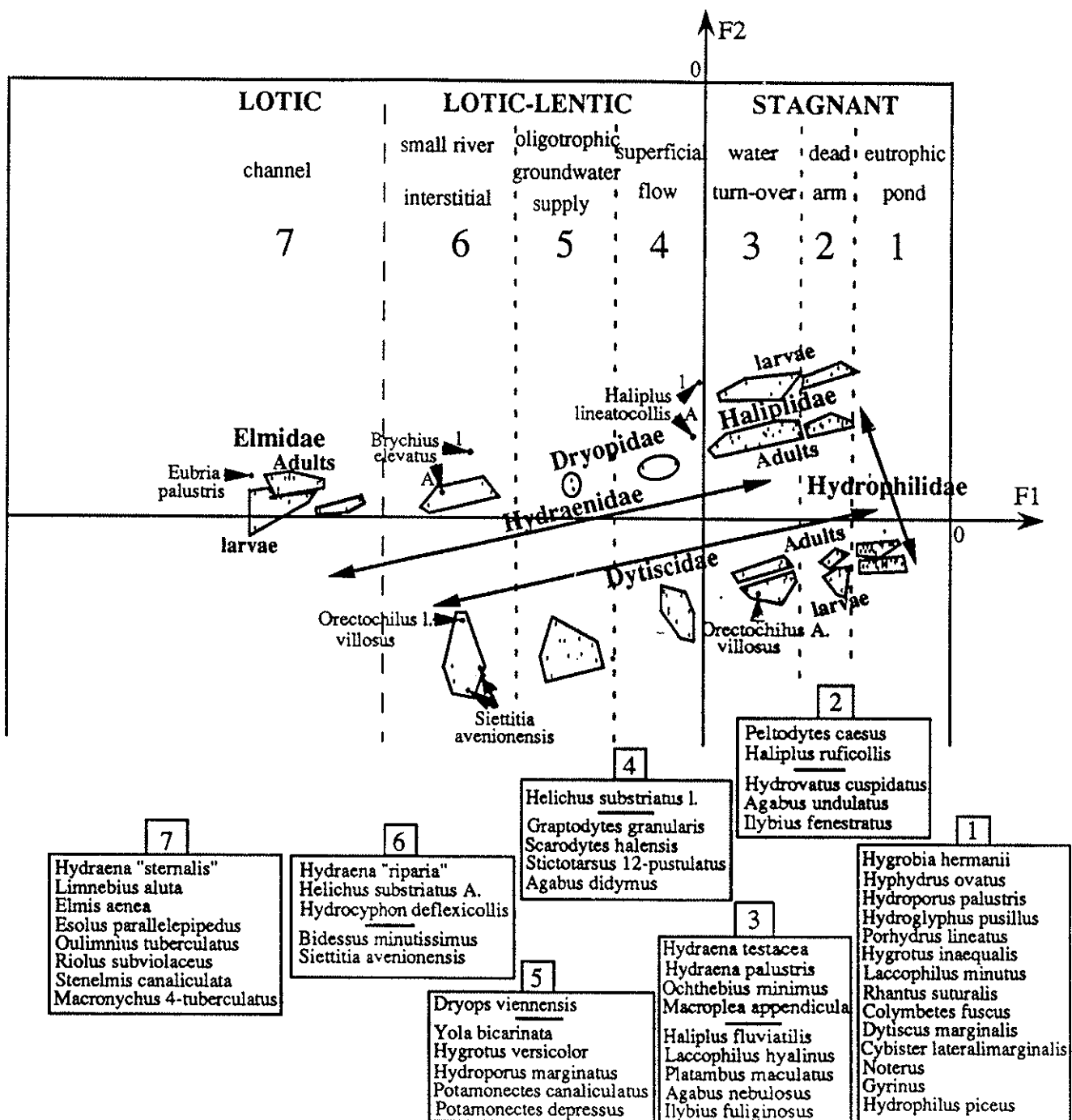
Gyrinus sericeolimbatus Régimbart exists in the absence of other species as a series of relatively isolated populations in New Guinea. Bo Svensson takes advantage of this to study variation in body size in the absence of competition. Much of the variation can be explained in relation to altitude, the populations of the high altitude lakes comprising larger, flatter and less pronouncedly reticulate specimens.

A new species, *brincki*, is described from Western New Guinea.

SVENSSON, B.W. 1991. Morphological variation in *Gyrinus sericeolimbatus* Rég. in New Guinea and description of a new *Gyrinus* species (Coleoptera: Gyrinidae). *Systematic Entomology* 16 499-514.

THE HOLISTIC APPROACH TO STUDYING RIVER SYSTEMS IN FRANCE

Two important papers summarize in english the results of a large project, which Philippe Richoux described at our meeting in Bordeaux in 1992. The 1991 paper examines the relationship between floodplain aquatic macroinvertebrates and sector-scale parameters such as geomorphology and the history of river regulation. The assemblages of molluscs, crustaceans, mayflies, dragonflies, caddis flies and beetles were compared in various types of former channels from two contrasting but adjacent floodplains; part of the Rhône, where successive meanderings have left a range of fluvial forms in area where the main river is now embanked and an unregulated sector of the Ain, where active meandering is only slowing down because of incision. The results demonstrate little difference in faunal composition but a significant difference in faunal structure. The faunal assemblages within the Rhône sector were distinct whereas those of the Ain showed considerable overlap.



In the 1992 paper, the 196 beetle taxa of the Rhône are considered in detail, using species preference descriptions ("ecological profiles") based on an extensive literature survey. Correspondance analysis gives a primary ordination based on a current-substrate gradient, with seven faunal groups ranged along it, the subdivisions being associated with habitat range and niche width. The larger species are confined to the stagnant end of the gradient. Variables such as feeding and vertical distribution separate carnivores from herbivores, and larvae from adults. The whole can be summarized in a single diagram, reproduced from a copy supplied by Philippe Richoux, who has also asked for three further references (Galewski 1971, Hebauer 1980 and Knie 1977) to be added to the published reports listed on page 166 of the 1992 paper. He has also asked to receive other papers describing the ecology of beetles in order to extend the study (address: Université Lyon I, 69622 Villeurbanne Cedex, France).

BOURNAUD, M., RICHOUX, P. & USSEGLIO-POLATERA, P. 1992. An approach to the synthesis of qualitative ecological information from aquatic Coleoptera communities. *Regulated Rivers: Research & Management* 7 165-180.

CASTELLA, E., RICHARDOT-COULET, M., ROUX, C. & RICHOUX, P. 1991. Aquatic macroinvertebrate assemblages of two contrasting floodplains: the Rhône and Ain Rivers, France. *Regulated Rivers: Research & Management* 6 289-300.

GALEWSKI, K. 1971. A study on morphobiontic adaptations of European species of the Dytiscidae (Coleoptera). *Pol. pismo Ent.* 41 487-702.

HEBAUER, F. 1980. Beitrag zur Faunistik und Ökologie der Elminthidae und Hydraenidae in Ostbayern (Coleoptera). *Mitt. Münch. Ent. Ges.* 69 29-80.

KNIE, J. 1977. Ökologische Untersuchung der Käferfauna von ausgewählten Fließgewässern des Rheinischen Schiefergebirges (Insecta: Coleoptera). *Decheniana* 130 151-221.

CATALOGUE OF FRENCH COLEOPTERISTS

Robert CONSTANTIN, 1992. *Memorial des Coléoptéristes Français*. ISSN 0751 0284 available at 100 FF including postage from Dr R Constantin, 103 impasse de la Roquette, 50000 Saint-Lô, France. Published by Association des Coléoptéristes de la région parisienne as a supplement to their bulletin.

■ Fortunately for us some of the best French coleopterists are alive. This book documents some 600 no longer with us. Each entry gives the years of birth and death, if known, a brief description of the interests, and a list of obituaries and biographies. The book finishes with illustrations of 25 famous coleopterists, such as Olivier, De Marseul, Bedel, Abeille de Perrin, Bertrand, Jeannel and Pic. Some of these, including that of Félix Guignot shown here, have been drawn by Robert's daughter, Sylvia. It is interesting to note that the famous philosopher, Pierre Teilhard de Chardin, had a predilection for beetles in his youth. He undertook theological studies at Ore Place, Hastings and it would be interesting to know if he generated any beetle records whilst in Sussex, where he is better known for searching for *Iguanodon* and, unfortunately, for being dragged down into the Piltdown Man fraud. The widow of Gabriel Teilhard de Chardin (presumably Pierre's brother), sold her husband's collection for less than the price of the boxes because she "avait horreur des Coléoptères".



ANNUAL COMPILATIONS

Reprints of the annual compilations of Hydradeephaga papers by Michel Brancucci and Konrad Dettner were sent out to most non-institutional members of the Club along with earlier newsletters. A few copies are left and can be issued to members who didn't receive them the first time on a first come, first served basis.

BRANCUCCI, M. & DETTNER, K. 1988. Annual compilation (1986) of Hydradeephaga (Coleoptera) papers. *Entomologica Basiliensia* 12 147-157.

BRANCUCCI, M. & DETTNER, K. 1989. Annual compilation (1987 and 1988) of Hydradeephaga (Coleoptera) papers. *Entomologica Basiliensia* 13 25-39.

BRANCUCCI, M. & DETTNER, K. 1992. Annual compilation (1989) of Hydradeephaga (Coleoptera) papers. *Entomologica Basiliensia* 14 47-56.

NEW SPANISH *OCHTHEBIUS*

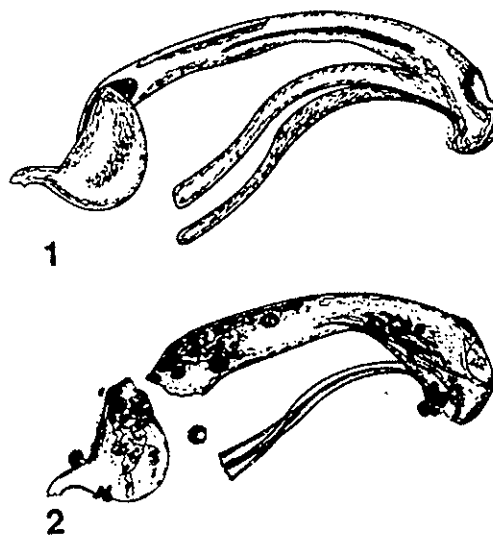
A species closely related to *Ochthebius dilatatus* Stephens is described from Cantabria, at Soto and Reinosa, in headstreams of the Ebro. The paper is illustrated with stereoscanning photographs. The species has been illustrated previously as No. 32 in Jäch's treatment of the subgenus *Asiobates*. Now read on!

GARRIDO, J., VALLADARES DIEZ, L.F. & REGIL, J.A. 1991. *Ochthebius (Asiobates) figueri* n.sp. in the north of Spain (Col., Hydraenidae). *Entomologia Basiliensia* 14 93-99.

JÄCH, M.A., 1990. Revision of the Palearctic species of the genus *Ochthebius* Leach V. The subgenus *Asiobates* (Coleoptera: Hydraenidae). *Koleopterologische Rundschau* 60 37-105.

SPANISH "ENDEMIC" *OCHTHEBIUS* AS A BRITISH PLEISTOCENE FOSSIL by Robert Angus

Life is full of surprises! However, few can equal mine when, on opening a packet of reprints sent recently by Luis Felipe Valladares, I encountered the description of *Ochthebius figueri* Garrido, Valladares & Régil 1991, a species newly described from small streams at the headwaters of the Ebro, and immediately recognised its aedeagophore as one I had dissected from fossils taken from the Tattershall Castle Pit in Lincolnshire many years ago. A drawing of the original stereoscan is shown here as Fig. 1, while Fig. 2 shows the fossil, drawn from a photograph and helped by study of the original, drawn to the same scale. The apical section of the aedeagus, detached in the fossil, is very distinctive, resembling in side view a saddle with a snout at the apical end. It is unlike any of the other *Asiobates* figured by Jäch (1990). The pronotum of *figueri* appears indistinguishable from that of *dilatatus* Stephens, and many such pronota were present among the Tattershall fossils, along with at least two aedeagophores.



The Tattershall site was studied by the late Maureen Girling for her Ph.D., and a preliminary account was published in *Nature* (Girling 1974). This site was a veritable goldmine for fossils of water beetles (and many others!). Much of the pit is floored by a woodland deposit dating from the Last Interglacial, and above this were gravels laid down during the Last Glaciation. These contained two important fossiliferous horizons. The first of these, the "lower cold" bed, gave radiocarbon dates indicating an age in excess of 44,000 years and contained, among other things, *O. kaninensis* Poppius, identified by aedeagophores and highly distinctive pronota. The upper fossiliferous horizon, lying in places directly on the Lower Cold but often separated from it by several inches of gravel, was characterized by large specimens of *Anodonta*, and gave radiocarbon dates indicating an age of about 43,000 years.

This horizon contained a rich and largely thermophilous fauna characteristic of the thermal optimum of the Upton Warren Interstadial Complex, and both the age and fauna were very similar to those obtained at Isleworth, Middlesex (Coope & Angus 1975). This "Anodonta bed" was the source of the *Hydrochus flavipennis* Küster aedeagophores figured by Angus (1977).

O. figueri is not the first Spanish "endemic" to have been found as a fossil in the English Pleistocene - the Isleworth deposit contained *Aphodius bonvouloiri* Har. (Scarabaeidae) and a number of other species with apparently restricted, non-British distributions (Coope & Angus 1975). However, a small *Ochthebius* apparently confined to streams in the Spanish mountains would seem a good candidate for consideration as a true endemic, originating in the general area of its present distribution - but we now know that this is not so!

The rich pageant of beetle faunas which, thanks to the researches of Russell Coope and his colleagues, has been found to have inhabited Britain during the Pleistocene climatic oscillations, must surely rank as one of the major zoogeographical discoveries of this century. The fact that the *Ochthebius* which provoked this article had to wait nearly twenty years before it was found alive and described, illustrates the taxonomic challenge - and reward - offered by this material.

I thank Russell Coope for the opportunity to work with him at Birmingham in the early 70's, and also acknowledge both Russell and Maureen Girling for involving me with the Tattershall fauna. Thanks also to Zygmunt Podchorodecki for preparing the figures.

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GARRIDO, J., VALLADARES DIEZ, L.F. & REGIL, J.A. 1991. *Ochthebius* (*Asiobates*) *figueroi* n.sp. in the north of Spain (Col., Hydraenidae). *Entomologia Basiliensia* 14 93-99.

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Received January 1993

THE WATER WAR

There are plans to spend about 3000 billion pesetas over twenty years on a hydrological system within Spain. *Ochthebius figueroi* might get pumped from the Ebro into places not quite as unexpected as a gravel pit in Lincolnshire, but likely to result in quicker fossilization! Conservationists are aghast at the magnitude of the changes proposed, and may find themselves strangely aligned with Rhesus-negative activists. Before anyone gets too incensed about hydrological schemes, can someone provide evidence of species loss within Iberia because of existing schemes?

QUATERNARY BIBLIOGRAPHY

P.C. BUCKLAND & G.R. COOPE, 1991. *A Bibliography and Literature Review of Quaternary Entomology*. ISBN 0-906090-35-0 - available from J.R. Collis Publications, Department of Archaeology & Prehistory, University of Sheffield, Sheffield S10 2TN, England, price unknown (5.25 inch 1.2 K High Density diskette available at £3.00 including postage, formatted either for Microsoft Word 5 or for RTF).

■ The first 24 pages of this booklet are devoted to a comprehensive review of the methodology associated with studies of Quaternary entomology, followed by evolution (or, rather, the lack of it), the palaeoenvironment, the climate, biogeography, archaeology and the Holocene, and a closing prospect in which the unpredictability of what will next be found in a newly discovered fossil assemblage is seen as the main reason for survival of this fascinating form of research.

The Quaternary is defined as the last 2.4 million years. This period's bibliography, unfortunately classified only by alphabetical arrangement of first authors, occupies 60 pages. Coleoptera dominate, with water beetles very well represented.

SENEGALESE DYTISCIDS

Carles Hernando describes *Laccophilus espanyoli* and, with Angel Lagar, *Copelatus senegalensis*.

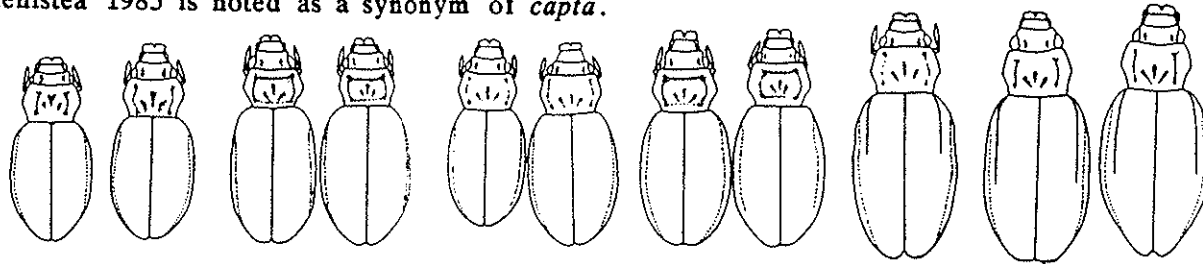
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LAGAR, A. & HERNANDO, C. 1991. Une nueva especie de *Copelatus* Erichson 1832 del Senegal. *Doriana* 6 1-3.

NORTH AFRICAN HYDRAENA

Philippe Richoux is greatly to be credited for bringing to publication the late Claude Berthélemy's last great work, done in conjunction with Abdelhakim Kaddouri. Philippe described the main findings in our meeting in Denmark. And it is in english!

The genus *Hydraena* from Morocco, Algeria and Tunisia was reviewed, revealing 22 species, five of them new to science. Of these one, *Hydraena quadricollis* Wollaston, originally described from Tenerife, is Afro-tropical, and fifteen are endemic to northern Africa, many of them confined to one or two river systems. This biodiversity is reinforced by three European species, two in the subgenus *Phothydraena* (*testacea* Curtis and *atrata* Desbrocher des Loges), and one in the *palustris* group, *cordata* Schauffuss, and three Ibero-Moroccan species (*africana* Kuwert, *bisulcata* Rey and *capta* d'Orchymont). *Hydraena maura* Ienistea 1985 is noted as a synonym of *capta*.



The work is fully illustrated, including some aedeagi seen from some unusual angles, dramatically emphasising the way in which these structures can vary in appearance.

The authors have taken the slightly unusual step nowadays of describing new species by individual authors within the body of the paper. This has got to be applauded as a way of keeping the label small so long as one doesn't feel the need to write "*kroumiriana* KADDOURI in BERTHÉLEMY, KADDOURI & RICHOUX, 1992". The acceptance date is given as 15 December 1991, making a 1991 publication date just about impossible. Philippe Richoux confirms that the descriptions should be referred to 1992.

It will be interesting to see if any of the endemics listed below are eventually found hiding in southern Europe:-

kocheri Berthélemy - Morocco and Algeria *pici* Sainte-Claire Deville - Algeria and Tunisia

rivularis Guillebeau - Algeria and Tunisia

rigua d'Orchymont - Morocco and Algeria

explanata Pic - Algeria

mouzainesis Sainte-Claire Deville - Algeria

bedeli Berthélemy - Algeria

kroumiriana Kaddouri - Tunisia

leprieuri Sainte-Claire Deville - Algeria and Tunisia

chobauti Guillebeau - Algeria

numidica Sainte-Claire Deville - Algeria and Tunisia

scabrosa d'Orchymont - Morocco and Algeria

algerina Kaddouri - Algeria

maroccana Kaddouri - Morocco

***Haenydra* in Africa - a case of dirty nets?** The authors agree with d'Orchymont in his opinion that the sole record of a *Haenydra* in Africa is based on an error, the most likely one being a contaminated net. If we had a set of ethics as water beetlers, presumably Rule 1 would be that you wash your net before moving from one continent to another.

BERTHÉLEMY, C., KADDOURI, A. & RICHOUX, P. 1992. Revision of the genus *Hydraena* Kugelann, 1794 from North Africa (Coleoptera: Hydraenidae). *Elytron* 5(1991) 181-213.

THE FIRST CAVE-DWELLING DRYOPID - ALREADY ENDANGERED

The Edwards Aquifer in the Balcones Fault Zone of Texas is reckoned to be one of the most diverse subterranean aquatic ecosystems in the world in terms of the number of species recorded - 42 species and subspecies of stygobiontic animals including the dytiscid *Haideoporus texanus* Young & Longley. Cheryl Barr and Paul Spangler provide a fascinating account of the discovery of the world's first described stygobiontic dryopid, living under California Boulevard, New Braunfels. Unfortunately increasing use of groundwater threatens the aquatic system, a hydrological model having indicated that the Comal Springs will go dry as early as the year 2020. *Stygoparnus* is distinct from all other dryopids in having 8-segmented antennae, and of course, vestigial eyes.

BARR, C.B. & SPANGLER, P.J. 1992. A new genus and species of stygobiontic dryopid beetle, *Stygoparnus comalensis* (Coleoptera: Dryopidae), from Comal Springs, Texas. *Proc. Biol. Soc. Wash.* 105 40-54.

CENTRAL AMERICAN LARAINES

This splendid production of the Smithsonian Institution is illustrated not only by excellent stereoscans of otherwise unphotogenic animals but also by some evocative photographs of sites with collecting in full swing.

SPANGLER, P.J. & SANTIAGO-FRAGOSO, S. 1992. The aquatic beetle subfamily Larainae (Coleoptera: Elmidae) in México, Central America, and the West Indies. *Smithsonian Contributions to Zoology* 528 i-iv, 1-74, 1 plate.

COEXISTING HYDROPORUS

Hauke Behr studied the population dynamics of adults of 11 species of *Hydroporus* in two bog pools over four years. Most individuals were confined to shallow water, 0-20 cm, and there was an average of 42-100 individuals per square metre. The community structures differed throughout the period, the deeper pool being dominated by *umbrosus*, *erythrocephalus* and *obscurus*, the other by *tristis*, *gyllenhali* (recorded as *piceus*) and *incognitus*. Detailed observations were made on physical and chemical factors, as well as on the statistics of each population.

BEHR, H. 1992. Dispersions-, Abundanz- und Dominanzdaten von koexistierenden *Hydroporus*-Imagines (Coleoptera; Dytiscidae) aus sekundären Moorgewässern. *Int. Revue ges. Hydrobiol.* 77 633-649.

OCHTHEBIUS REVIEW NEARING COMPLETION?

Two further sections have been revised by Manfred Jäch, the species around *marinus* Paykull and the subgenus *Enicocerus* Stephens. Twenty-three species of the *marinus* group are recognised, five of them new, plus the *viridis* Peyron species complex. The twelve species of *Enicocerus* represent a nett loss, with only one new species, one replacement name and seven new synonyms. Whereas the *Enicocerus* species are mostly distinct, the *marinus* group includes some extremely variable and difficult species, *evanescens* Sahlberg and *subpictus* Wollaston, in addition to *viridis*, which probably comprises three species. Whereas the Palaearctic part of the revision may be nearing completion, Manfred Jäch claims to have another 37 papers in preparation!

JÄCH, M.A. 1992. Revision of the Palaearctic species of the genus *Ochthebius* Leach. VII. The subgenus *Enicocerus* Stephens (Coleoptera: Hydraenidae). *Elytron* (1991) 5 139-158.

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NATIONAL BOUNDARIES AND CONSERVATION - THE MARCHFELD CANAL

Manfred Jäch has written in understandably angry mood about his proposal to introduce *Potamophilus acuminatus* and *Macronychus quadrituberculatus* from Slovakia to Austria, where at least one of the, the *Potamophilus*, is believed to be extinct. In 1991 he applied for a grant from the Österreichischer Forschungsfond (Austrian Science Foundation) to carry out entomological studies at the Marchfeld Canal, an irrigation scheme to revitalise the agricultural land around the Danube. The canal system cost about a billion US\$ and has been effective. It seemed like a good idea to recreate the fauna and flora as well as the water table. An international commission, comprising two "experts", decided about the recreation project, and turned down the entomological part. Apparently there were some fears about what *Potamophilus* might do to the native beetles! Against this must be set the risks that *Potamophilus* faces in its home base on the Ukrainian border with Slovakia. Slovakia's development plans would almost certainly cause eutrophication of the Latorica River. It is, of course, possible to introduce the species without funding. If that happened in Britain it would be a violation of the Wildlife & Countryside Act, but Britain is an island, whereas national boundaries in Central Europe have very little zoo-geographical meaning.



NEWSLETTERS 1-50 Anders Nilsson has kindly provided the following summary of the contents of *Newsletters* 1-50.

The Balfour-Browne Club Newsletter

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1:1-11 1976

- 1-3 Angus, R.B. A preliminary note on the British species of *Graphoderus* Sturm, with the additions of *G. bilineatus* DeGeer and *G. zonatus* Hoppe to the British list.
- 3 Owen, J.A. *Graphoderus cinereus* L. in Surrey.
- 3-5 Sinclair, M. A day's collecting in Surrey.
- 5 Holland, D.G. Endangering the species?
- 6-7 More records of *Hydroporus longicornis* Sharp.
- 7-8 *Hydroporus longicornis* Sharp in mid-west Yorkshire.
- 8 Wallace, I.D. Water beetles at Merseyside County Museums, Liverpool.
- 9 Holland, D. Elminthidae - riffle beetles.
- Reviews (9-10)**
- Benham: Swarming of *Helophorus brevipalpis* in North Devon.
- Haslam et al.: British water plants.
- Huggert: On the identity of *Hydroporus levanderi*.
- Kenward: *Helophorus tuberculatus* in the City of York.
- Kenward: Pitfalls in the environmental interpretation of insect death assemblages.
- Last: Swarming of *Helophorus brevipalpis*.
- Murray: Some rare Coleoptera from the New Forest, Hampshire.
- Pearce: *Haliphus fluviatilis* in ponds.
- Powell & Young: Water beetles from northern Scotland and the Shetlands.
- Sinclair: *Hydroporus glabriusculus* new to the British Isles.

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- 1 Baxter, J.D. *Guignotus pusillus* (Fab.) in Warwickshire.
- 1-2 Lawton, J.H. & Webb, N.G. An appeal for records of *Hydroporinae* species assemblages.
- 2 Thomas, J. *Hydrophilus piceus* (L.) - two records from France.
- 3 Richter, R. *Hydrophilus piceus* (L.) and *Dryopoidea*.
- 3-5 Foster, G.N. Interim list of Elminthidae in South-West Scotland.
- 5 Young, M.R. Information required on *Gyrinus opacus* Sahlberg.
- 9-10 Owen, J.A. *Ochthebius metallescens* var. *poweri* Rye at Exmouth in the drought.
- 10 Sinclair, M. Endangering the species?
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- Brancucci: Methode de marquage des coleopteres aquatique.
- Gidman: Biological studies in Ingleborough Cavern.
- Hebauer: *Hydroporus piceus* im Bayerischen Wald; *Agabus striolatus* in Süddeutschland; *Potamonectes canaliculatus* in Bayern.
- Murvosh & Miller: A method for tagging large aquatic beetles.
- Palmer: The ecology of the invertebrate community of Borough Fen Decoy pond; A survey of the animal community of the main pond at Castor Hanglands National Nature Reserve, near Peterborough.

3:1-13 1977

- 1-2 Palmer, M. Water beetles from Woodwalton Fen National Nature Reserve.
- 2-3 Foster, G.N. Woodwalton Fen N.N.R. in 1966.
- 3-4 Nash, D.R. Some water beetle records from Suffolk.
- 4 Palmer, M. Water beetles in the River Wissey, Norfolk.
- 4-8 Sinclair, M. The water beetles of the Malham Tarn area, Yorkshire.
- 8-9 Philp, E. *Hydroporus ferrugineus* & *Ortectocheilus villosus* in Kent.
- Reviews (9-13)**

- Fichtner: Tyrphoxen - tyrrophil - tyrphobiont; *Berosus spinosus*.
- Franciscolo: Hydroadephaga of Yugoslav Adriatic Islands. Part 1.
- Rocchi: Brevi note su reperti di Hydroadephaga Italiani.

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- 1-7 Foster, G.N. The new check list.
- 8-10, 13 Gentili, E. The British species of *Laccobius*.
- 10 Nash, D.R. *Laccobius atratus* (Rottenburg) in Wiltshire.
- 10-11 Goodliffe, F.D. Observations on the eggs of *Rhantus* species (Col., Dytiscidae) with corrections of some previous statements.
- 12-15 Young, M. A preliminary report on the distribution of *Gyrinus opacus*.
- 16 Foster, G.N. The *Bidessus* species in Britain.

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- 1-3, 11 Anderson, P. Some sampling problems in a borders moss.
- 2 Hodge, P.J. Some interesting records from East Sussex.
- 4-5 Holland, D. Elminthid distribution in Britain.
- 6 Nilsson, A.N. *Bidessus grossepunctatus* Vorbringer, a new dytiscid species for Scandinavia.
- 6 Foster, G.N. *Elmis aenea* in a peat bog.
- 7 Owen, J.A. Another site for *Agabus melanarius* in Surrey.
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- 10-11 Foster, G.N. *Agabus biguttatus* - an appeal for records.
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- Holmen: *Deronectes canaliculatus* ny for Denmark; Noter om Bøllemosens vandkalvefauna.
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- 1-2 Angus, R. Water beetles at Moccas Park, Herefordshire.
- 2-3 Sinclair, M. Some elm mid records from South-Central Scotland.
- 3 Nash, D. *Agabus brunneus* (Fabricius) in Wiltshire.
- 4-5 Young, M. Much-stamping-in-the-Sphagnum.
- 6 Hodge, P.J. *Agabus biguttatus* in Derbyshire.
- 6 Hodge, P.J. *Haliphus mucronatus* in East Sussex.
- 6-9 Foster, G.N. Black holes in Norfolk, a journey into the unknown.
- 9-10 Owen, J.A. Water beetles from Skye, Raasay and South Rona.
- Reviews (3-4)**
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- 1-2 Hodge, P. Some additional East Sussex water beetle records.
- 3 Foster, G.N. *Hydraena pulchella* in East Sussex.
- 3 Hodge, P. Two rare water beetles on the Lewes Levels, East Sussex.
- 4-12 Foster, G.N. A key to the species of *Cercyon* (Hydrophilidae, Sphaeridiinae).
- 12-13 Foster, G.N. More on *Agabus biguttatus* and a little on *A. guttatus*.

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- 1-2 Holland, D. A key problem.
 3-14 Driscoll, R.J. A preliminary report on the distribution of water beetles in Broadland dykes.

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- 1-5 Foster, G.N. The British Red Data Book.

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- 1-5 Macan, T.T. A twenty-one year study of the Dytiscidae and Haliplidae in a moorland fishpond.
 5-6 Sinclair, M. Something for beginners.
 7 Foster, G.N. A warning for beginners.
 7-8 Owen, J.A. Ochthebius punctatus in the Outer Hebrides.
 8 Hodge, P. The habitat of Agabus striolatus.
 8-9 Foster, G.N. Sweet, sweet gale.
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 Fahy: A short account of the Elmithidae with a key to the larvae; Observations on the growth and distribution of certain lotic Coleoptera in Ireland; Fauna and flora of a thermal spring at Innfield.
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 Landin: Methods of sampling aquatic beetles in the transitional habitats at water margins; Seasonal patterns in abundance of water-beetles belonging to the Hydrophiloidea.
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- 2 Angus, R.B. European Hydrochus.
 2-15 Angus, R.B. The British species of Helophorus.
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- 1-3 Owen, J.A. Water beetles from Mull.
 4-7 Foster, G.N. Flight & flightlessness.
 10-11 Hodge, P. Some elmids records from Sussex, I.O.W. and Lancashire.
 11 Dytiscus circumflexus active on the Suffolk shore in winter.
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- 2 Brown, C. Larvae of Hydrophilidae.
 2-4 Foster, G.N. Hydraena aedeagophores.
 5-6 Sinclair, M. Practical note II - the net.
 7-8 Foster, G.N. Nets off the peg.
 9 Wallace, I.D. Bidessus minutissimus (Germar) in North Wales.

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- 1-5 Foster, G.N. Water beetle recording scheme - first progress report.
 5-6 Parry, J.A. Cercyon granarius Erichson.

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- Brancucci: Insects of Saudi Arabia; Notes sur Deronectes thoreyi; Zucht von Dytisciden; La faune du marais des Monneaux. II.; Notes zoogéographiques sur quelques Dytiscides; Die Dytisciden und die Oberflächenspannung des Wassers; Variations de coloration chez Hygrotus inaequalis; Méthodes de capture des Coléoptères aquatiques.
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- 1 Balfour-Browne, J. On "subterranean" aquatic Coleoptera.
 2-7 Foster, G.N. Subterranean statistics.
 8 Young, M. Don't have the bath water too hot!
 8-9 Foster, G.N. Two semisubterranean beetles in North Somerset and a new method of finding them - the oil slick.
 11-13 Schaefflein, H. Augenlose, unterirdisch lebende Dytisciden.
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- 1-12 Holland, D. Distribution of Elmidae/Elmthidae.
 13 Welch, C. Water beetles from the Inner Hebrides - a request.

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- 1-4 Palmer, M. Water beetles from the Somerset Levels.
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 Evans: North-east Leicestershire Coalfield - report of a biological survey.
 Gentili: Aggiunte alla revisione dei Laccobius palearctici; Laccobius della Regione Orientale.
 Hansen: De danske arter av slegten Hydrochus.
 Holmen: Gyrinus colymbus fundet i Danmark.
 Lien: The energy budget of the brown trout population of Övre Heimdalsvatn.
 Nieukerken: De verspreiding van Hydrovatus cuspidatus in Nederland.
 Silfverberg: Brychius elevatus och dess raser i Finland.

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- 1-2 Foster, G.N. A major new find by John Parry (Oulimnius major).
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 5-6 Zasada, K.A. & Lee, W.J. An alternative invertebrate preservative.
 6-8 Carr, R. Excursion north.

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1-4 Foster, G.N. Invertebrate site register.

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- 3 Carr, R. On the *Gyrinus natator* L. dilemma.
 4-7 Foster, G.N. Give it a whirl(igig).
 7-8 Foster, A. Some observations on *Gyrinus urinator* Illiger in Cornwall.
 9-10 Carr, R. *Gyrinus urinator* Illiger in Kent.
 11 Foster, G.N. The artist in Britain.
 11 Foster, A. A second record of *Hydroporus obsoletus* Aubé from Dartmoor.
 11-12 Welch, C. *Helophorus flavipes* (Fab.) and *H. dorsalis* (Marsh.) recorded from Monks Wood National Nature Reserve - a correction.

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- Biström: Dytiscidae from Newfoundland and adjacent areas.
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 Dettner: Populationsdynamische Untersuchungen an Wasserkäfern zweier Hochmoore des Nordschwarzwaldes; Zur tiergeographischen Stellung aquatiler Coleopteren des Nordschwarzwaldes.
 Franciscolo: On a new Dytiscidae from a Mexican cave - a preliminary description.
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 Landin: Habitats, life histories, migration and dispersal by flight of two water-beetles *Helophorus brevipalpis* and *H. strigifrons*.
 Madge & Pope: The valid family-group name based on *Elmis*.
 Pankow: Beitrag zur Kenntnis der mitteleuropäischen Arten der Gattung *Elmis*.
 Paul: Observations on aestivating habits of *Agabus bipustulatus*.
 Rasmussen: Livscyklus og habitat præference hos *Helodes marginata* og *Helodes minuta*.
 Riha: Bibliographie der tertiären Haliplidae, Hygrobiidae, Dytiscidae und Gyrinidae der Welt.
 Rutanen: The distribution of *Bidessus unistriatus* and *B. grossepunctatus* in Eastern Fennoscandia.
 Spangler: A new genus of Sphaeridiini from Chile, *Andotypus*.
 Waterston & Lyster: The macrofauna of brackish and fresh waters of the Loch Druidibeg N.N.R., South Uist.
 Young: Predaceous water beetles of the genus *Neobidessus* in the Americas north of Columbia; A new predaceous water beetle from the eastern US (*Hydroporus psammodytes*); New World species of *Notomicrus*; Key to Nearctic *Celina* with descriptions of new species; *Suphisellus* in the Americas north of Colombia.

21:1-14

- 2-6 Shirt, D. *Potamonectes depressus-elegans* in the British Isles.
 6-7 Palmer, M. Water beetles from the north Kent marshes.
 7-8 Foster, G.N. A Kentish legnote.
 8-9 Foster, G.N. Some tips on Potteric Carr.
 9 Flint, J. *Gyrinus urinator*.
 10 Angus, R. British Gyrinidae.
 Reviews (11-14)
 Baker et al.: The River Wensum.
 Biström: Notes on non-African *Derovatellus*.

Cooling: Records of aquatic Coleoptera from rivers in southern England.
 Egglisshaw: Benthic invertebrates of streams on the Alburz Mt. Range near Teheran, Iran.

Ferro: Diagnosi preliminari di una nuova specie di *Hydrobiini*, *Philydrus calabricus*; Diagnosi preliminari di *Hydraenidae* Palearctici; Recherche coleopterologiche sul litorale Ionico della Puglia, Lucania e Calabre, *Palpicornia*.

Foster: An aberration of *Agabus sturmi*.

Mingo: Distribution of aquatic Dryopoidea in Maine.

Parry: *Bledius annae* in Kent.

Prislin & Ferro: *Ochthebius montalbanensis* n. sp.

Pope & Marshall: The British and Fennoscandian check lists of Coleoptera.

Spangler: *Onopelmus* new dryopid genus from Peru; A new *Portelmis* species from Ecuador.

Stubbs: The British Insect Fauna - Check List, Coleoptera.

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Zasada & Smith: Freshwater invertebrates of the Sheffield District.

22:1-18

1-18 Foster, G.N. Atlas of British water beetles preliminary edition - part 1.

23:1-10

- 1-2 Parry, J. The new broom (*Haliplus varius*).
 3 Carr, R. Whirligigs in Denmark.
 4 Phillips, E. *Berosus spinosus* in Sussex.
 4 Carr, R. *Rhantus frontalis* in Kent.
 7 Wallace, I. Water beetles from Hilbre Island, Merseyside.
 Reviews (2-3, 5-6)
 Bilardo & Pederzani: Haliplidae et Dytiscidae dans le Gabon et la Côte d'Ivoire.
 Bilardo & Sanfilippo: *Canthyporus kenyensis*.
 Coope: Late Cenozoic fossil Coleoptera: evolution, biogeography, and ecology.
 De Marzo: Anatomia e funzionamento dell'apparato succhiante cibariofaringeo in alcune forme larvali dell' subff. Dytiscinae, Colymbetinae, Laccophilinae e Hydroporinae.
 Ferro: Due nuovi *Ochthebius* (*Henicocerus*) del Friuli.
 Galewski: Third stage larvae of European *Agabus*.
 Ienistea: European Homalochthebius.
 Illies: Limnofauna Europaea.
 Matta & Wolfe: New species of Nearctic *Hydroporus*.
 Morrison: The effects of rotenone on invertebrate fauna of three hill streams in Scotland.
 Nilsson: Second and third stage larvae of *Agabus serripennis*.
 Nilsson: Utbredning och flygperiodik hos Helodidae.
 Pederzani & Sanfilippo: Dytiscidi delle Isole Seychelles e del Madagascar.
 Perkins: Six new species in the *Epimetopus costatus* complex; New names for two species *Tympanogaster deanei*, *Ochthebius pui*.
 Rasmussen: Invertebratfaunen i et østjysk kildeområde.
 Schaefflein: Beitrag zur Dytiscidenfauna Mitteleuropas.
 Wozniak: *Agabus pseudoclypealis* new to Poland.

24:1-12

1982

- 1-2 Foster, G. Another *Enochrus*.
 3-4 Young, M. Notes from the north.
 5 Carr, R. Preliminary notes on the aquatic Coleoptera of the Kentish weald.
 Reviews (7-12)
 Ali & Lord: Impact of experimental insects growth regulators on some

nontarget aquatic invertebrates.

Detner & Hopstätter: Grünfärbung der Laccophilinae.

Fitter & Smith: A wood in Ascam - a study in wetland conservation - Askham Bog.

Gräf: Ökologische Untersuchungen Käferfauna Gewässern Solingens.

Guse & Honomichl: Digitiformen Sensillen auf Maxillarpalpen von *Agabus bipustulatus* und *Hydrobius fuscipes*.

Hebauer: Zur Kenntnis von *Hydroporus fuscipennis*.

Honomichl: Digitiformen Sensillen auf Maxillarpalpen von Coleoptera.

Ienistea: Asiobates in Europe.

Janssens: Hydraenidae de l'Inde.

Kavanaugh: Type specimens of Amphizoa.

Neveu: La dérivé des invertébrés aquatiques et terrestres dans un petit fleuve côtier de l'ouest des Pyrénées la Nivelle.

Nilsson: The Dytiscidae of Västerbotten.

Parry: Oulimnius major new to Britain.

Richoux: Larves du Sietitia avenionensis.

Smith & Dartnall: Boundary layer control by water pennies.

Spangler: A durable, lightweight net and a manual respirator.

Vinikour: Coal slurry observed as habitat for Heteroceridae.

Wooldridge: Corrinea n. gen. Neotropical Limnichiinae; 3 n. sp. of Throscinus.

25:1-15

1-3 Foster, G. Musical Helochares.

4-5 Angus, R. Second thoughts on Siberia.

5-6 Sinclair, M. Freshwater invertebrates recorders' meeting.

7-10 Carr, R. A Scottish anecdote.

11-13 Foster, G. Bavaria in two days.

13 Sinclair, M. Ochthebius dilatatus and Hydroporus ferrugineus in Aberdeen.

14 Bameul, F. Hydrophilus piceus L. captured by an owl.

14-15 Carr, R. Further notes on aquatic Coleoptera from the Weald of Kent.

Reviews (13)

Hammond: The peatlands of Ireland.

26:1-11

1983

1-2 Carr, R. Gyrinus natator (L.) and G. substriatus Stephens.

2 Nash, D.R. Helophorus alternans Gené in North-East Sussex.

4 Nash, D.R. Observations on the habitat and distribution of Helophorus nubilus F. in Suffolk.

5 Holland, D. An innocent at large.

11 Foster, G. Further notes on Helochares species in Britain and Ireland.

Reviews (3-4, 7-11)

Angus: Separation of two species standing as Helophorus aquaticus by chromosomes.

Bacchus: Beetles, The natural history of Shetland.

Bameul et al.: Distribution of Agabus melanarius.

Biström & Silfverberg: Hydroglyphus senior synonym of Guignotus.

Brancucci: Dytiscidae aus Nepal, Kashmir und Ladakh.

Buckingham & Bennett: Laboratory biology and behavior of Litodactylus leucogaster.

Detner & Schwinger: Defensive substances from pygidial glands of water beetles.

Foster & Angus: Gyrinus distinctus reinstated to the British list.

Gray: Species composition and life histories of aquatic insects in a lowland Sonoran Desert stream.

Heinrich & Vogt: Aggregation and foraging behaviour of Gyrinidae.

Holmen: Status over Danmarks Halipidae.

Klausnitzer & Lehnert: Wasserinsekten aus Springbrunnen der Innenstadt von Leipzig.

Meyer & Detner: Ökologie und Bionomie von Wasserkäfern der Drover Heide.

Nilsson: Aquatic Coleoptera of the northern Swedish Bothnian coast.

Nilsson: Fennoscandian Hydraticus.

Obrtel & Holisova: Diet of hedgehogs.

Parry: Cercyon granarius confirmed as British.

Richoux: Pictorial key.

Spangler: A new species of Ytu from Brazil, Torrindicolidae; Two n. gen. of phreatic Elmidae from Haiti; Trogochara ashmolei from Ecuador, first eyeless Hydrophilidae.

Takahashi et al.: Comparison of area sampler etc for aquatic fauna in rice fields.

27:1-23

1-23 Foster, G. Atlas of British water beetles preliminary edition - part 2.

28:1-14

1 Carr, R. A new Limnebius.

2-4 Hebauer, F. The struggle for existence.

4-7 Foster, A. Water beetles from the Romney Marshes.

5 Carr, R. Some uncommon aquatic Coleoptera in Kent.

8-10 Eyre, M. Plodging in Norfolk.

12 Foster, G. Scottish entomologist's meeting, Loch Lomond.

13-14 Carr, R. Agabus chalconatus & A. melanocornis in Kent.

14 Reid, C. Beetles as the prey of owls.

Reviews (14)

Nieuwerkerken: Handleiding voor het project waterkeevers.

Nilsson: Key to larvae of Fennoscandian Dytiscidae.

29:1-12

1984

1 Carr, R. And another one (Coelambus nigrolineatus).

2 Bilton, D. Water beetles from the Carrick ponds, Kirkcudbrightshire.

3 Owen, J. Another species gains its wings (Oreodytes davisii).

4-5 L'entente cordiale in the Balfour-Browne Club.

5 Foster, G. The Balfour-Browne Club library.

5-6 Balfour-Browne, J. Some thoughts on Joyce Omer-Cooper & Jim Pearce.

7-9 Sinclair, M. Water beetles in Orkney, 1982.

10-12 Cuppen, J.G.M. Dytiscidae from the Lake District.

30:1-27

1-11 Girling, M. Aquatic Coleoptera in the fossil insect assemblages from archaeological sites in the Somerset Levels.

11-23 Foster, A. Modern water beetle records from the Somerset Levels and moors.

24-25 Foster, A. & Foster, G. A check list of the aquatic Coleoptera of Somerset.

26 Murray, D. Winter clustering.

31:1-22

1-22 Foster, G. Atlas of British water beetles - preliminary edition. Part 3.

32:1-15

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1-5 Nilsson, A.N. Towards a European check list of Dytiscidae.

- 6-7 Lott, D. The Balfour-Browne Club in Islay.
 7-8 Carr, R. Aquatic Coleoptera on the Pevensy Levels.
 10 Carr, R. Report of a participant (Hamburg meeting, Salemer Moor).
 11 Foster, G. Urgemütlich - Bavaria revisited.
 12-14 Goldie Smith, E.K. Water beetles at Rye Harbour.
 14 Carr, R. Additional species on the North Kent marshes.
 14 Carr, R. A further occurrence of *Graphoderus cinereus* L.
 15 Montes, C. Notes concerning the identity of several species of the genus *Canthydrus* (Dytiscidae: Noterinae).

33:1-19

- 1-19 Foster, G.N. & Angus, R.B. Key to British species of *Hydroporus*.

34:1-12 + appendix 1-4

- 1-2 Hebauer, F. *Ochthebius* (Hymenodes) *difficilis* Mulsant - another British species?
 3-4 Phillips, E. Water beetles as a middle school project.
 4-8 Eyre, M. Some effects of man on the distribution of Dytiscidae in North-East England.

- 8-10 Foster, G. Studland National Nature Reserve, Dorset.
 10 Foster, G. *Helochares* - a correction.
 11-12 Foster, G. Water beetles on Foulden Common, West Norfolk.

Reviews (12)

- Pirisinu: *Palpicornia*. Guide species acque interne Italiane.
 Shatrovskiy: *Laccobius* of Soviet Union.

Appendix: Bibliography for 1980.

35:1-22

- 1-22 Foster, G.N. Atlas of British water beetles. Preliminary edition - part 4.

36:1-12

1986

- 1-2 Foster, G. & Spirit, M. *Oreodytes alpinus* new to Britain.
 1-2 Foster, A. & Bratton, J. *Oulimnius rivularis* rediscovered.
 4 Nilsson, A.N. Dytiscid nomenclature and a catalogue of Polish Coleoptera.
 4-5 Foster, G.N. ICZN Rules, O.K.? (or - ii, that's your lot).
 6-7 Phillips, E. Water beetles encountered on a trip to Sweden.
 7-9 Foster, A. Square-bashing in Leicestershire.
 9-10 Carr, R. August headlines.
 10-12 Foster, G. Los caballeros.

Reviews (5)

Berry: The Natural History of Orkney.

37:1-19

- 1-12 Foster, G. Rare and endangered water beetles in Europe.
 13-14 Foster, G. Records recieved.
 16-17 Spirit, M. Biological recording in Caithness.
 18 Hernando, C. Two new Dytiscidae from the Iberian Peninsula (*Potamonectes*, *Agabus*).
 19 Foster, G. Nationally notable species in Britain.

38:1-18

- 1-2 Bilton, D. Three Irish trips.
 3-4 Friday, L. Ireland 17-24 September 1986.
 4-5 Foster, G. Ireland in July.
 5 Jones, R.H.K. Water mites and water beetles.

- 7 Sinclair, M. Notes on the *Hydroporus* key.

- 8-9 Foster, G.N. & Robinson, M. Maureen Girling 7 February 1950 - 24 December 1985.

- 9-10 Foster, G. Manoeuvres 8-9 August 1986.

- 10-11 Montes, C. Faunal and bibliographic list of the Dryopoidea of the Iberian Peninsula and the Baleari Islands.

- 13-14 Foster, G. Catchers in [the] Rye 5-7 September 1986.

- 14-15 Foster, G. More about endangered species.

- 16-18 Furse, M. et al. New British records of *Oulimnius major* & *O. troglodytes*.

- 18 Foster, A. *Coelambus nigrolineatus* - a second British locality.

Reviews (6)

Angus: Towards a revision of Palearctic *Helophorus* 1-2.

Hancock: Catalogue of E.C. Rye's type specimens.

Klausnitzer: Käfer im und am Wasser.

Smetana: *Helophorinae* of the Nearctic Region.

Wiezlak: Dryopoidea. Polish Fauna.

39:1-19

1987

- 1-2 Foster, G. Five *Anacaena* species in Europe.

- 3-5 Foster, G. Records recieved.

- 6 Doughty, R. *Oulimnius troglodytes* in Loch Lomond.

- 6-7 Carr, R. Water beetles of the Dartford & Crayford marshes.

- 7 Collier, M. *Hydroporus obsoletus* surfaces in East Anglia.

- 9-10 Balke, M. & Hendrich, L. Trapped!

- 10 Foster, G. Sandoz and the Rhine.

- 11 Eyre, M. Boring Balkan beetles.

- 12-19 Macan, T.T. Professor Balfour-Browne - a biography and a bibliography.

40:1-23

- 1-23 Foster, G.N. Atlas of British water beetles. Preliminary edition - part 5.

41:1-16

- 3 Bratton, J.H. et al. Recent records and a reasoned reassessment of a reckoned red data book rarity.

- 4 Gentili, E. Checklist of *Laccobius* from the British Museum collection.

- 5-7 Foster, G. Records recieved.

- 7-8 Foster, G. Two virgins in Kintyre.

- 8-9 Foster, G. A key to British and Irish *Enochrus*.

- 11 Foster, G. New *Agabus* species in Europe.

- 11 Carr, R. *Agabus melanarius* new to Kent.

- 12 Holmen, M. *Agabus labiatus* flying.

- 13-15 Jeffries, M. Species accumulation data for the water beetles of Yellow Slacks Marsh, Aberlady Bay.

- 16 Welch, R.C. *Dytiscus semisulcatus* - food for otters.

- 16 Sinclair, M. *Helophorus griseus* Herbst in Scotland.

Revue vs (1-2)

Angus: Revision of *Atractelaphorus* in France, Iberia and North Africa.

Berthélemy: Remarks on *Hydraena* and revision of *Phothydraena*.

Dettner: Chemosystematics and evolution of beetle chemical defenses.

Hansen: Hydrophiloidea of Fennoscandia and Denmark.

Nilsson: 3rd-instar larvae of 8 Fennoscandian *Hydroporus*.

Rothmeier & Jäch: *Spercheus* filter-feeding.

Spirit: Freshwater invertebrates of Caithness.

42:1-22

1988

- 1-2 Angus, R. Joys of a wet autumn.
 3 Foster, G. *Graptodytes aequalis* (Zimmermann) new for Europe.
 5 Foster, G. Interesting records from Denmark.
 7-8 Foster, G. & Lott, D. Beyond the pale.
 8-10 Jäch, M. In memoriam - Claude Berthélemy.
 10-11 Colloff, M. Mites (Acari) on water beetles.
 11-12 Carr, R. An Italian engagement.
 14-17 Jeffries, M. Do water beetle communities reflect the wider freshwater community? A trial run.
 18-21 Berge Henegouwen, A. *Hydrochus megaphallus*, a new and widespread European water beetle described from the Netherlands.
 Reviews (3-4)
 Bameul: *Gyrinus* France.
 Cuppen: Western European *Helochares*.
 Drost & Vondel: *Haliplus furcatus*, nieuw voor Nederland.
 Holmen: Gyrinidae, Haliplidae, Hygrobiidae & Noteridae, Fauna ent. scand.
 Jäch: Bemerkenswerte Käferfunde aus Österreich.
 Larson: Revision of Nearctic *Ilybius*.
 Nilsson: Conservation of *Ilybius ater*.

43:1-19

- 1-2 Carr, R. *Acilius canaliculatus* Nicolai breeding in South-East England.
 3-5 Raven, P.J. The effect of a major insecticide pollution on water beetles in an Essex river.
 6 Nilsson, A.N. *Laccophilus obsoletus* is a *Haliplus*.
 6-7 Banks, B. Threats to the survival of *Graphoderus zonatus* in Britain.
 9 Fresneda, J. *Graptodytes aequalis* in the south of Europe.
 10 Foster, G. *Megaphallus* lives (in England).
 13-15 Drake, M. Water beetles from the Gwent levels, Wales.
 16-18 Eyre, M. Sampling and multivariate analyses.
 Reviews (8)
 Angus: Notes on *Helophorus* in Turkey, Iran and neighbouring territories.
 Balke & Hendrich: *Agabus wasastjernai* in Norddeutschland; Zwei seltene *Agabus* aus Berlin.
 Beutler & Weidlich: Wasserkäferfunde Kreis Beeskow.
 Burmeister et al.: *Hydradephaga* Sardiniens.
 Castella et al.: Diagnostic écologique trois anciens méandres.
 Cuppen & Dettner: Larva of *Laccornis oblongus*.
 Deding: Vandbiller syd for Århus.
 EIS Netherlands.
 Fery & Brancucci: Costate *Deronectes*.
 Fery & Hendrich: *Hydroporus vespertinus*.
 Gentili: Verso una revisione del *Laccobius*.
 Hansen & Hebauer: *Helochares lividoides*.
 Kordylas: Unusual penis of *Hydraena riparia*.
 Lancaster & Scudder: Aquatic Coleoptera and Hemiptera in some Canadian saline lakes.
 Larson: Aquatic Coleoptera of peatlands and marshes in Canada.
 Nilsson & Cuppen: Larvae of North European Colymbetes.
 Richoux & Castella: Aquatic Coleoptera of former riverbeds submitted to large hydrological fluctuations.
 Valladares: *Hydrochus angusi*.

44:1-23

1989

- 1-5, 23 Foster, G. The Hague meeting 20-23 May 1988.
 6 Brink & Velde: Catching water beetles using a light trap.
 7-12 Heuss, K. Water beetles as indicators of water quality.

- 13-22 Angus, R. Towards an atlas of *Helophorus* chromosomes.
 13 Berge Henegouwen, A. Characters for *Laccobius bipunctatus* and *L. minutus*.
 14-16 Jäch, M. *Ienistea* 1988. Is this 20th century taxonomy?
 17-18 Vondel, B. van. Water beetling in Wales.
 18-19 Foster, G. Records recieved.
 20-22 Green, D. Water beetles of some Durham ponds.
 Reviews (5)
 Machado: *Ditiscidos* Islas Canarias.

45:1-28

- 1-3 Angus, R.B. A tale of two Baedekers. Öland and Hamburg in the springtime.
 4-6 Briggs, J. & Walmsley, A. Water beetles of the Montgomery Canal.
 7-9 Young, M. & Foster, G. Outer Hebridan water beetles.
 10-11 Brendell, M. Mick Bacchus.
 25-26 Nilsson, A. The *Hydradephaga* of Australia - remarks on a new catalogue.
 Reviews (6, 11-12, 23-27)
 Balke & Hendrich: *Hydaticus ponticus* new for USSR.
 Bameul & Secq: *Dryops sulcipennis* in France.
 Behr: Falle quantitativen Erfassung luftatmender Wasserinsekten.
 Burton & Hodgson: Lowland peat in England and Wales.
 Carr & Nilsson: *Agabus chalconatus* and *melanocornis*.
 Carr & Philp: Aquatic Coleoptera in Kent.
 Deding: Gut content analysis of diving beetles.
 Friday: Key to adults of British water beetles.
 Jäch: *Hydraena riparia* complex.
 Nilsson: *Hydrochidae* and *Hydrophilidae* in northern Sweden;
 Morphometric study of *Agabus congener* and *A. lapponicus*.
 O'Connell: Guide to Irish peatlands.
 Sainz-Cantero et al.: Identification of *Elmis maugetii* and *E. aenea*.
 Smetana: Review of *Hydrophilidae* of Canada and Alaska.

46:1-23

1990

- 1 Foster, G. Guignot nouveau.
 2-6 Nilsson, A.N. An annotated list of the works of Prof. K. Galewski on water beetles 1957-1987.
 7 Foster, G. Museum madness.
 8 Parsons, M. *Coelambus nigrolineatus* at Rye Harbour, East Sussex - a third British record.
 10 Berge Henegouwen, A. van. The fifth abdominal sternite in *Hydrochus* Leach.
 10 Young, M. Topical tips - glass bead manoeuvres.
 11-13 Friday, L. Sixty years of water beetle records at Wicken Fen, Cambridgeshire, England.
 13 Foster, G. *Hydroporus scalesianus* in the British home counties in 1901.
 13 Foster, G. Welsh *Dytiscus lapponicus*.
 15 Foster, G. *Agabus melanarius* in Argyll, Scotland.
 16-21 Kordylas, A. Water beetles in the Pasieka River, north-east Poland.
 Reviews (9, 13-15, 21-23)
 Bameul: *Dégusement actif* de *Georissus crenulatus*.
 Behr: Verbreitungsmuster von *Dytisciden*-Population Oberharzer Hochmooren.
 Biesiadka: *Ochthebius minervus* in Poland.
 Braasch: *Hydroporus glabriusculus* in DDR; Überwinterung Imagines der *Dytiscidae*; *Agabus uliginosus* - eine bivoltine Art?
 Brown: Biology of riffle beetles.
 Eyre & Foster: Comparison of aquatic Heteroptera and Coleoptera

communities for environmental and conservation assessments.

Eyre & Rushton: Quantification of conservation criteria using invertebrates.

Foster et al.: Classification of water beetle assemblages.

Iberian papers.

Nilsson: On the genus *Agabates*.

Schaefflein: Dritter Beitrag zur Dytiscidenfauna Mitteleuropas.

Zeng: Taxonomy of Chinese Dytiscidae.

47:1-20

1-4 Balke, M. Three riding west & snow fields in July: Islas Canarias and La Corse in 1989.

5 Bratton, J. Do *Helophorus* filter-feed?

6 Angus, R. *Cercyon granarius* in Oxfordshire and Surrey.

6 Angus, R. *Laccomis oblongus* new for Wales.

8 Booth, R. Two new water beetles for West Cornwall.

9-10 Friday, L. & Majerus, M. Beetles at light at Wicken Fen.

15 Foster, G. Names and opinions - also De Geer is de rigeure.

Reviews (6-8, 10-19)

Adams et al.: Check-list of freshwater invertebrates of Loch Lomond.

Balke & Hendrich: Dytiscidae of Madeira.

Balke: Identity of *Hydroporus alienus* Sharp.

Balke: *Rhantus rufus*; *Rhantus souzanne* from Costa Rica.

Bameul: *Meropathus*.

Bameul: *Rhithrodytes* new genus.

Berge Hengouwen: *Anacaena lohsei* n sp from Italy and Switzerland;

Sphaeridium marginatum valid species.

Brancucci: Revision of *Platambus*.

Carr: *Agabus conspersus* and *nebulosus*.

Clary et al.: L'école entomologique Lyonnaise.

Cox: Review of *Holmen*.

Cuppen: *Deronectes* of Netherlands.

Drost: *Helophorus croaticus* and *pumilio* in Netherlands.

Fery & Brancucci: New subsp. of *Deronectes costipennis*.

Fery: *Graptodytes pietrii* new to Italy.

Foster & Sinclair: Aquatic Coleoptera on Little Cumbrae Island.

Fresneda & Fer: *Stictonectes occidentalis* from SW Iberia.

Gentili: Alcune novita sul genere *Laccobius*.

Guéorguiev: Fauna Bulgarica.

Hebauer: Drei neue Orientalische *Spercheus*.

Hebauer: Zwei neue *Ochthebius* (*Enicocerus*).

Jäch: Revision of *Ochthebius* (*Bothocius*); Revision of *Ochthebius metallescens*-group.

Lera: Coleoptera of the Far East of the USSR.

Nilsson et al.: Review of genus- and family-group names of Dytiscidae.

Nilsson: Two new Siberian *Hydroporus*; Larvae of northern European *Hydroporus*.

Nilsson: Utbredningen av *Rhantus fennicus*.

Pederzani: *Hydroporus jurjurenensis* on Creta.

Perkins: *Adelphydraena* new genus from Venezuela.

Ponel: Paléontologie du dernier Glaciaire en France.

Ranta & Espo: Predation by *Potamonectes griseostriatus* in rock pools.

Richoux & Forestier: *Esolus parallelepipedus* as an indicator.

Richoux: Inventaire des coléoptères des cours d'eau.

Sinclair: Check-list of aquatic Coleoptera of Selkirk and Roxburgh.

Wewalka: Notes on *Noteridae* and *Dytiscidae* of Near East.

6.

19-20 Foster, G. Records recieved.

21-26 Foster, G. Notes on water beetle recording.

49:1-20

3 Foster, G. IUCN species survival commission.

7 Berge Henegouwen, A. van. *Enochrus quadripunctatus* new for Scotland.

7 Kirk-Spriggs, A. Berge Henegouwen, A. van. *Sphaeridium marginatum* in Britain.

8-9 Kirby, P. & Foster, G.N. *Agabus uliginosus* takes off.

9 Kordylas, A. A new station for *Esolus parallelepipedus* in Poland.

10 Braun, A. New records of *Hydroporus pubescens* (Gyll.) from Baden-Wurtemberg, SW Germany.

11 Sinclair, M. Records from a Scottish moss.

11 Foster, G. Plateau sur plateaux.

15 Biggs, J. et al.: *Hydrochara caraboides* from Cheshire.

16-17 Foster, G. Dorothy Jackson - a publications list.

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Balke et al.: *Colymbetes schildknechti* new for Corse and Libya.

Balke et al.: *Wasserkäfer* von den Islas Canarias.

Bameul: Redescription of *Georissus crenulatus*.

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Braasch: Habitat of *Dytiscus semisulcatus*.

Braun: Charakterisierung verschiedener Gewässertypen anhand von *Wasserkäfer*-Assoziationen; Beitrag zur mittelbadischer *Wasserkäfer*-Fauna.

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Hansen: New genera of *Sphaeridiinae*; *Hydatotrepis*, subgenus of *Enochrus*.

Harris & Harris: Wildlife conservation in managed woodland and forests.

Hendrich: *Hydroporus hebaueri* n sp from Greece.

Holmen & Vazirani: *Neptosternus* and *Copelatus* from Sri Lanka and India.

Ienistea: Vorläufige Beiträge zur Revision *Ochthebius*.

Jäch: Revision of *Ochthebius lobicolis*-group; Revision of *Ochthebius* (*Asiobates*); Types of *Ganglbauer's Hydraena*.

Juliano & Lawton: Morphological patterns among co-occurring dytiscid beetles; Effects of density and food availability on feeding rate of *Hyphydrus ovatus*.

Kordylas: Water beetles of Krzemno Lake.

Larson: Revision of Nearctic *Agabus* - part 1.

Leblanc: Breeding *Spercheus*.

Nel: Fossil *Gyrinidae* of France.

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Latissimus is a publication of the Balfour-Browne Club. Issue No. 2 was published on 25th February 1993. Correspondence should be addressed to the Club Secretary:-
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