AMPHIPOD NEWSLETTER

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AMPHIPOD NEWSLETTER 13

No, the Amphipod Newsletter has not disappeared completely, nor has its editor. But it has become increasingly hard to find the time and energy to prepare the next newsletter, and that is the main reason for this more than two year gap between AN 12 and 13. I have not, however been completely idle; besides vain efforts to get any of my fellow ornithologists to assume the burden of newsletter editor, I have collected references, gossip and reviews as usual, and George Crawford has prepared most of the species part of the Index to AN 1-10. My intention is now to follow up this AN 13 as soon as possible with the species index (AN 14) and the rest of the collected material (AN 15). For AN 15 I should very much like to have a photograph or drawing of the late Eupraxie Gurjanova, who died in January 1981 after long illness, for use on the cover. This time the cover amphipod is the logo of the very successfull Gammarus/Niphargus meeting in Poland in September 1981.

As usual, I have to thank several colleagues for their help, primarily with the bibliography: Jan Stock, John Holsinger, Colin Levings and Jean Mathieu were especially helpful this time, as well as the regional editors.

Tromsø, November 1982.

Wim Vader

MPHIPOD NEWS FROM CONGRESSES, SYMPOSIA etc.

I International Conference on Biology and Evolution of Crustacea, 19-23 May 1980. The Australian Museum, Sydney.

Wim Vader

Although this conference suffered somewhat from the steeply increasing prices of flytickets, leading i.a. to a number of late cancellations among amphipod participants, it was still an undoubted success, and an invigorating experience for this participant from the opposite end of the globe. Only amphipod papers are listed below, but of course the most useful lectures to hear during a meeting like this are those outside one's own special pet-group, as prior knowledge of the lecture's contents and new leads is often so much smaller. A general impression of the conference was a clear trend among the different lectures of the independent and somewhat isolated position of the Amphipoda among the Peracarida.

The Conference was well-organized and the weather most enviable for late autumn. This made the post-Conference excursion to Jarvis Bay also still more delightful; this area has both exposud and semi-protected rocky shore, sandy beaches and mangrove and was thus very suitable as a first impression of an exotic coast.

Jim Lowrey and Des Griffin can be proud of this Conference. Jim tells me that the Proceedings have been hit by the world wide recession, but may be expected somewhere next summer.

Papers with direct amphipod significance at the Sydney Conference.

E.E. BALL. Phronima - a deep-sea crustacean with eyes in the top of its head (poster).

E.L. BOUSFIELD (read by D.LAUBITZ.) Studies on the freshwater amphipod crustaceans of New Zealand and Tasmania.

H.-P. BULNHEIM & A. SCHOLL. Enzyme variation in populations of two Gammarus species from north European coastal and estuarine areas (poster).

E. DAHL. Alternatives in malacostracan evolution.

K.W. DUNCAN. The physiological ecology of terrestrial amphipods and their conquest of the terrestrial environment.

J.A. FRIEND. The nature and history of the Tasmanian terrestrial amphipod fauna.

R.G. HARTNOLL. Strategies of crustacean growth.

R.R. HESSLER. Structural morphology and evolution of walking mechanisms in the Eumalacostraca.

J. JUST. The malacostracan fauna of the abyssal North Polar Basin.

D.R. LAUBITZ. A revision of the family Podoceridae (Amphipoda).

R.J. LINCOLN & D.E. HURLEY. The calceoli of gammaridean amphipods.

J.K. LOWRY. The marine gammaridean Amphipoda of the subantarctic islands of New Zealand and Australia (poster).

J.A. REDFIELD. Ecological genetics of crustaceans.

F.R. SCHRAM. Origin, phylogeny and taxonomy of Eumalacostraca.

M.J. SMITH & W. D. WILLIAMS. Reproductive strategies of some freshwater amphipods in southern Australia.

D.H. STEELE. Remarks on same shallow-water Indo-Pacific lysianassid amphipods.

W. VADER. Associations between amphipods and sea anemones.

I V. International Colloquium on Gammarus and Niphargus, Łodz-Częstochowa, September 1981.

Wim Vader

Many Symposium committees have needed good faith and perseverance in bringing their meeting off successfully, but few can have had a so arduous task as Krzysztof Jażdżewski and Andrzej Skalski, the organizers of the fifth Gammarus and Niphargus meeting in Poland. Their first try in september 1980, had to be aborted at the last possible moment because of the political problems in their country. The decision came so late, in fact, that a number of participants did not hear of it before arriving in Poland (where they were well taken care of), while the Russians were reached at the last moments before starting from Moscow.

In 1981 the uncertain economic situation made the organization of a symposium still more complicated, but Krzysztof and Andrzej persevered and, with good help of their institutions, succeeded. About 30 participants, from Czechoslovakia, Iceland, Lebanon, USA, and 8 further countries met first at Burzenin near Łodz and, after a wonderful 2- days cross-country bus-trip with both cultural and amphipodological highlights, to Kucoby near Częstochowa. The list below gives the amphipod lectures presented (as usual, the meeting was combined with a groundwater symposium), but the Proceedings will additionally contain the lectures sent in for the 1980 meeting.

The organization of the conference was wonderfully smooth and informal, the atmosphere quite special, and the participants learned a lot on amphipods, groundwater and on Poland and the Poles. The wonderful 'Gammaragus'- amphipod on the cover of this Newsletter was especially drawn for this Symposium. The next symposium will probably be om Helgoland, with Hans-Petter Bulnheim as organizer.

(Please keep or put our Polish colleagues on your mailing-lists when sending out reprints and other information. It is hard for them to keep abreast with the literature now)

Amphipod papers at the Gammarus/Niphargus meeting in Poland, September 1981.

N.J. ALOUF. La fécondité des Gammares.Essai de traitement statistique.

E. BOUSFIELD & J.R. HOLSINGER. Hypogean crustaceans of the Canadian Albertean cordilleran region.

H.P. BULNHEIM. Salinity adaptation and resistance capacities of five euryhaline Gammarus species.

H.P. BULNHEIM & A. SCHOLL, Biochemical systematics of gammarids.

J. GIBERT. L'écosystème karstique du Massif de Dorvan IV- Fluctuations observées dans la derive du crustacé amphipode: Niphargus rhenorhodanensis et de mollusques gasteropodes au niveau de l'exutoire principal du massif.

R. GINET. Structure et fonctionnement des ecosystèmes du Haut- Rhone français 24. Les amphipodes des eaux interstitielles du fleuve Rhone en amont de Lyon.

K. JAZDZEWSKI & R. FRONC. Vertical distribution of Gammarus species on the pier in the Gdynia harbour, Baltic Sea.

G.S. KARAMAN. The presence of Niphargus aquilex and N. longicaudatus in Italy.

G.S. KARAMAN & J.L. BARNARD. Revision of some gammaridean amphipods.

V. KULHAVY. Respiration der troglobionten und trogloxenen Krustentiere.

J. MATHIEU. Metabolisme respiratoire de Niphargus rhenorhodanensis (Gammaride hypogé) interstitiel. Influence de la température.

M.P.D. MEYERING & H.G. PIEPER. Gammarus occurrence as an indication for stable conditions in Hessian woodland brooks and rivers.

P. OBRDLIK. Remarks to the thermal tolerance of Gammarus fossarum Koch (Amphipods).

K.W. OPALINSKI. Metabolic compensation to temperature in amphipods.

G. PETRE- STROOBANTS. Analyse comparative de la variabilité de certaines caractères taxonomiques de Gammarus pulex Linnaeus, 1758, G. fossarum Kock, 1836 et G.caparti Stroobants, 1980.

J.L. REYGROBELLET & M.J. DOLE. Structure et fonctionnement des ecosystèmes du Haut Rhone français. 19. Connaissance des milieux interstitiels regionaux: (2) Extension à la Lône du Grand Gravier.

C. ROUX. L' activité locomotrice de Gammarus pulex et de G. fossarum dans différentes conditions expérimentales.

A.W. SKALSKI. Groundwater fauna of the Małopolska gap of the Vistula.

A.W. SKALSKI & T. SYWULA. Contribution to the knowledge of the underground Crangonyctidae (Amphipods) of Poland.

W. VADER. Subchelate pereopods and amphipod taxonomy.

G.P. ZAUKE & F.R.G. OLDENBURG. Monitoring aquatic pollution using Gammaridae (Amphipoda: Crustacea), with emphasis on cadmium.

III Contribution with possible amphipod interests to '17-ème Symposium Europeen de Biologie Marine (EMBS 17) Brest, 27 Septembre-1er Octobre 1982. (contributed by I.B. Falk Petersen, Tromsø)

ATKINS, S.M. Contrasts in benthic community structure and succession off the North Yorkshire coast. (A study of two North Sea sites on one of which Ampelisca spinipes is codominant. The other site was a shallow water sandy habitat).

BATTAGLIA, B. & P.M. BISOL. Genetic variation in Gammarus (Amphipoda) in relation to the environment (A study of Mediterranean brackish-water populations of G. aewuicauda and G. insensibilis The results show a low level of genetic variability).

BONSDORFF, E. Recovery potential of macrobenthic infauna from dredging in shallow, brackish water areas.

ELEFTHERIOU, A. & D.J. BASFORD. Fluctuations in the macrobenthos and fish populations in a sandy bay.

REES, E.I.S. & A.J.M. WALKER. Variation in the Abra community in Liverpool Bay.

IV Workshop on Fjord Oceanography, June 1979, Sidney, Canada

A book was recently published which provides the Proceedings of a Workshop on Fjord Oceanography, held in June 1979 at the Institute of Ocean Sciences, Sidney, British Columbia, Canada. A comprehensive mix of biological, physical and chemical papers were presented. The book

includes 9 invited review papers and 58 extended abstracts resulting from contributed papers or posters. Many of the non-biological papers would be of interest to amphipod specialists working in fjords.

One interesting presentation, which for a number of scheduling reasons did not get published, was that of Dr. J. Littlepage, Dept. of Biology, University of Victoria, Victoria, B.C. His paper presented submersible observations and experimental data on a species of Orchomenella which is found in large numbers in the bottom waters of Saanich Inlet. This is an interesting but atypical B.C. fjord characterized by persistent low dissolved oxygen levels.

This book is available from Plenum Press, 227 West 17th Street, New York, 10011, USA. A complete citation follows:

Freeland, H.J., Farmer, D.M. and C.D. Levings. (Editors) 1980. Fjord Oceanography. Plenum Press, New York. 715 p.

C.D. Levings
Department of Fisheries and Oceans
West Vancouver Laboratory
4160 Marine Drive
West Vancouver, B.C.
Canada V7V 1N6

(prepared at the request of W.Vader)

BRATTEGARD, T. 1980. Why biologists are interested in fjords. p. 53-66 in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

STONE, D.P. The Distribution of Zooplankton Communities in a Glacial Run-off Fjord and Exchanges with the Open Sea. p. 291-298 in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

SANDS, N.J. and H. SVENDSEN. 1980. Zooplankton Variability in Skjomen, Northern Norway and Exchanges with the Outer Fjord. p. 367-370 in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

MATTHEWS, J.B.L. and B.R. HEIMDAL. 1980. Pelagic Productivity and Food Chains in Fjord Systems. 377-389 in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

FOSSHAGEN, A. 1980. How the Zooplankton Community may vary within a Single Fjord System. p. 399-406 in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

GARDNER, G.A. 1980. A Preliminary Examination of Zooplankton Species Groupings and Associated Oceanographically Defined Regions along the British Columbia Mainland Coast. 407-414 in: Freeland, H.J., Farmer, D.M. and C. D. Levings (Editors) Fjord Oceanography, Plenum Press.

BÅMSTEDT, U.U. 1980. Biochemical Components as Indicators of Seasonal Condition of Deep-Water Zooplankton.p. 447-452 in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

ROSENBERG, R. Effect of Oxygen Deficiency on Benthic Macrofauna in Fjords. p. 499-514. in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

LEVINGS, C.D. 1980. Benthic Biology of a Dissolved Oxygen Deficiency Event in Howe Sound, B.C. p. 515-522 in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

MARCOTTE, B.M. 1980. The Meiobenthos of Fjords: A Review and Prospectus. p. 557-568. in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

PEARSON, T.H. 1980. The Macrobenthos of Fjords. p. 569-602. in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

EVANS, R.A., B. GULLIKSEN and O.K. SANDNES. 1980. The Effect of Sedimentation on Rocky Bottom Organisms in Balsfjord, Northern Norway. p. 603-608. in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

BRUNEL, P., R. de LADURANTAYE and C. LACROIX. 1980. Suprabenthic Gammaridean Amphipoda (Crustacea) in the Plankton of the Saguenay Fjord, Quebec. p. 609-614 in: Freeland, H.J., Farmer, D.M. and C.D. Levings (Editors) Fjord Oceanography, Plenum Press.

NEW SUBSCRIBERS, CHANGES OF ADDRESSES etc.

Our list of subscribers is not at all up to date. I know, because I have seen different addresses from the ones I have for several people during my search for amphipod literature. In some cases I have written and asked whether the changed address is permanent, but I do not have the time or money to do this systematically; also, I

feel it is the subscriber's responsibility to keep the editor informed of changes of address. It will help a lot if you can do so.

Since the last list mme Eupraxic Gurjanova has died and Dr. Kazuki Hoshide has terminated his subscription. As usual, there are a number of new members and changes of address, as follows

Changes of address

J.A. (Tony) FRIEND, Western Australian Wildlife Research Centre, PO Box 51, Wanneroo, W.A. 6065, Australia.

G.R. HARBISON, Australian Institute of Marine Sciences, Townsville, Queensland, Australia.

Larry D. McKINNEY, Moody College of Marine Technology, Bldg 311, Fl. Crockett, Galveston, Tx 77550, USA

Yasuhiro MORIOKA, Seikai Regional Fisheries Research Laboratory, Kokubo- cho, Nagasaki 850, Japan

New subscribers

Penny B. BERENTS (♀) Zoology Department
The Australian National University
P.O. Box 4
Canberra, A.C.T. 2000, Australia

Charles K. BIERNBAUM
Grice Marine Biological Laboratory
The College of Charleston
205 Ft. Johnson
Charleston, S.C. 29412 USA

Kenneth O. COYLE
Institute of Marine Science
Univ of Alaska
Fairbanks Al. 99701, USA

Juana Rosa CEJAS PULIDO (♀)
Department de Ciencias Marinas
Facultad de Biologia
Universidad de La Laguna
La Laguna
Tenerife (Islas Canarias)
Espanua

Reiner HARTMANN
II. Zoologisches Institut und Museum der Universität
Abt. Ökologie
Berliner Strasse 28
D- 34 Göttingen
BRD

Shin- ichi ISHIMARU
Dept of Zoology
Faculty of Science
Hokkaido University
Kita 10-Jo, Nishi 8- chome, Kita- len
Sapporo, 060 Japan

Alfonso MUÑOZ- COBO
Museo Nacional de Ciencias Naturales
Laboratoria de Zoologia
Castellana 80, Madrid (60)
Espana

Giuseppe L. PESCE
Istituto de Zoologia
Universita degli Studi di L'Aquila
I- 67100 L'Aquila
Italia

Gary C.B. POORE
Curator of Crustacea
National Museum of Victoria
71 Victoria Crescent
Abbotsford Vict. 3067
Australia

H.Kurt SCHMINKE
Fagbereich IV
Universität Oldenburg
Postfach 2503
D- 2900 Oldenburg
BRD

Arnfinn SKADSHEIM
Avd. for Marin Zoologi
Universitetet i Oslo
Biologibygget
Blindern- Oslo 3
Norge

Jörundur SVAVARSSON

Kristineberg Marinbiologiska Station

S- 450 34 Fiskebackskil

Sverige

Shigeyuki YAMATO

Mukaishima Marine Biological Laboratory

Mukaishima- cho, Hiroshima prefecture

722 Japan

Gerd- Peter ZAUKE

Fachbereich Biologie

Universität Oldenburg

D- 2900 Oldenburg

BRD

REVIEW

BRITISH MARINE AMPHIPODA: GAMMARIDEA
by Roger J. Lincoln.
British Museum (Natural History),
London 1979. 658 pp £ 50.

Wim Vader

Amphipod taxonomy is at present in a state of flux. The classification systems of Sars and Stebbing have remained dominant for several decades, but with increasing knowledge of tropical, antiboreal and deep-sea faunas the gaps between the classical amphipod families have become smaller and smaller, and formerly clear dichotomies have broken down. At the same time amphipod workers became gradually aware of our almost complete ignorance of the phylogenetic relationships between the various amphipod families. For some years we resigned ourselves to putting the families in alphabetic order, even though this makes little evolutionary sense. Due to the gradual and uneven amalgamation of old families into larger blocks and the divergent views of the leading amphipod workers, this artifice did not even solve our indexing problems in a very satisfactory manner.

During the last decade the trend is toward an increasing boldness in amphipod systematics and classification: zoogeographic, phenetic and cladistic methods have been taken into use, new and promising characters of possible importance in unraveling amphipod relationships, such as gill structure, brood-plate morphology, calceoli and surface ultrastructure are being explored, and the boldest among us press ahead with new and revolutionary classifications, received with much criticism of the "too much too soon" type. Altogether the field is in turmoil, but intensively alive and new discoveries are made, or at least announced, every year.

To write a monograph on the amphipod fauna of a restricted geographic area in such a situation must be an extremely difficult task. Roger Lincoln of the British Museum (Natural History), the author of the Handbook of British Gammaridean Amphipoda, which is the subject of this review, had not only these general problems to contend with, but also the peculiar situation in Great Britain. The latest monograph on British amphipods has been the one by Bate and Westwood in 1868, but most of the surrounding countries

have more recent amphipod handbooks (Sars 1890-95, Chevreux & Fage 1925, Stephensen 1923-31, 1929, Schellenberg 1942), so that the amphipod fauna of western Europe seemed to be quite well known.

In his introduction to the monograph Lincoln mentions that the book was originally intended only as a synopsis of intertidal species and slowly expanded into its present form. As it stands the monograph is a handbook encompassing identification and distribution of all British species, based on a thorough revision of the vast amounts of material and literature on British and European amphipods.

As a revision it is clearly a success. Lincoln has steered a very sensible, independent course through the treacherous waters of the many competing higher classifications of amphipods. He has ordered the families according to phylogenetic relationships and accepted a few, but not all, of the more sweeping recent revisions at family level. The result is very consistent and will no doubt be followed by many European authors in their work on regional faunas.

The author has unraveled a number of knotty taxonomic problems (i.a. in the Amphilochidae and Stenothoidae) and his workable keys, large and clear illustrations and concise descriptions will enable most western European amphipods to be identified with much more confidence than has been possible before. The lay-out of the handbook, with the illustrations close to the relevant descriptions, makes the book a pleasure to use in identification. The main problem with the illustrations is that there is no indication whatsoever of the magnifications used for the different parts. This makes it difficult to compare the relative size of certain legs, e.g. the gnathopods of different Stenothoidae. I also should have preferred to know the provenance of the illustrated specimens. This is now only given for some rare species or when the illustrated material was not British (I doubt if the figured Ampelisca eschrichtii really came from Finland, as noted in the caption).

The descriptions are clear and concise,but mostly restricted to the classical characters of diagnostic value. There are very few data in this book on the "new" characters, such as gills, brood plates (not mentioned even in Chaetogammarus stoerensis), pleopods or even calceoli, an area where Lincoln is one of the

foremost authorities. The living colour of most species is described although the eye-colour is curiously enough never given. The data on habitat and biology are somewhat scanty, in spite of the many published data on this field in the British literature. To give examples from my own field of interest, interspecific associations: Normanion is given as a parasite of pelagic fishes (it is usually found on benthic fishes and the nature of its association is unknown), on Opisa Lincoln notes: "Stephensen (1923) suggests that it might be parasitic on fishes, on the evidence of a single specimen taken from a cod" (this genus is now well documented as fish-associated) and for Aristias neglectus the author records its association with ascidians and sponges, but not that with sea anemones, brachiopods and echinoderms. Similarly one of the three known British references to the association of Melita obtusata with sea anemones is cited, but nothing is said of its common occurrence on starfish, and the regular association of Urothoe marina with different burrowing invertebrates, of Metopa solsbergi with sea anemones, and of Euonyx chelatus with echinoderms do not rate any mention.

The British distribution of the amphipods is given by reference to the 40 British Marine Census Areas, listed and mapped on pp 27-28 (area 18 is here called Plymouth but throughout the text West Channel), while a bibliography of the main references for each census area is given on pp 29-31. This makes it easy to read the distribution records. More difficult it is, on the other hand, to know which of these records have been validated by material seen by Lincoln himself, and which have been taken unchecked from the literature.

In the compilation of the European literature the author has made a valiant effort (especially welcome in a British author) to be as complete as possible; this must have entailed wading through a sea of scattered papers in many languages. In this, as in other details, there are quite a number of minor inconsistencies, which suggest that the final editing of the book may have had to be carried out in a hurry. The listed distribution occasionally omits data from papers cited in the bibliography: Talorchestia brito has been found in Denmark and Norway, Bathyporeia pelagica has been found around the entire North Sea and in western France, and Chaetogammarus stoerensis also occurs in the northwestern Atlantic. Similar slips can be seen in the synonymies, where some relevant western European synonyms are missing, such as Gammarus

sarsi Reid and G. ochlos Reid for G. zaddachi, and Talorchestia frisiae Klein for T. deshayesii, while a number of less relevant "exotic" synonyms are included, not always correctly (Lepidactylis dytiscus Say is not a synonym of Haustorius arenarius; Siphonoecetes dellavallei is not a synonym of S. kroyeranus).
A few similar inconsistencies are found in the nomenclatural treatment of certain species. After having established that Dahl in his revision of Acidostoma gave the new name A. neglectum to what was the real A. obesum, and coining the new name A. sarsi for A. obesum auct non B. & W., Lincoln then puts A. nodiferum Stephensen into synonymy with A. sarsi, overlooking the fact that this synonymy makes his new name superfluous.
Myers' 1973-paper on Aora is cited by Lincoln, but his text still accepts Aora as monotypic, while Myers has convincingly shown that there are at least two Aora-species in the North-Atlantic, neither of which is Aora typica, and that the correct name for the British species is Aora gracilis (Bate). Similarly, Stenothoe cattai Stebbing is still used for "Chevreux' species" S. eduardi Krapp-Schickel, although Krapp-Schickels 1976 paper is in the bibliography.

Similar slips occur in the statements of distribution. For Parametopa Lincoln gives the area of distribution as "temperate and subarctic waters of the North-Atlantic", although Parametopa species have been described from both S.Africa and the Bering Sea area. Chaetogammarus is characterized as "A small genus comprising about 7 recognised species restricted to the North East Atlantic area and until recently known by the familiar name Marinogammarus". This was roughly true for Marinogammarus (although M. stoerensis penetrates into the NW Atlantic), but not any longer after the merger with the predominantly Black Sea Chaetogammarus.

Besides the species accounts, the Handbook of British Marine Amphipoda: Gammaridea contains a clear introduction on the external morphology of amphipods, with beautiful SEM-pictures of calceoli, a short chapter on preservation and preparation, a useful and clear glossary, a chapter on geographical ecological distribution with i.a. a list of intertidal British species, and a selected amphipod bibliography indexed under 7 major headings: General, Ecology/Biology, Behaviour, Morphology, Anatomy/Histology, Physiology and Genetics. Although Lincoln is careful to point out the limitations of this bibliography, my guess is that it will be one of the most widely used parts of the book. The final

bibliography is impressive and runs over 38 pages,, so it may seem like carping to point out that Erik Dahl's 1944 and 1948 important monographs on terrestrial and algae-living amphipods in the Sound ought to have been included, or that prof. Kinne's name consistently has been "frenchified" into Kinné.

The Handbook has been well produced and bound, and the lay-out is by far the best of any amphipod handbook I know. Curiously the photographs of entire amphipods in Plate 1 are very poor. The price unfortunately puts the book out of reach for most amphipodologists. Nevertheless, I expect that "Lincoln" will soon take over from "Stephensen", "Schellenberg" and "Chevreux & Fage" as the main amphipod identification handbook in western Europe. And that means the Handbook will get the success it undoubtedly deserves, in a very competitive market.

Just when I write this the latest issue of the J. mar. biol. Ass. U.K. appeared with no less than 4 amphipod papers, a clear sign of the fresh impetus a good Handbook has given to British amphipodology.

As an appendix to this review I give a list of the main taxonomic changes effectuated by Lincoln. The following new taxa are described: Paramphilochoides n.gen. (Amphilochidae) with 2 species Amphilochoides intermedius (type) and A. odontonyx, and Acidostoma sarsi n. nom. (= A. obesum auct., non B.& W. = A. nodiferum, the latter the correct name for the taxon). Further changes: Socarnopsis is synonymized with Socarnes, Scopelocheirus crenatus with S. hopei, Acidostoma neglectum with A. obesum B. &. W (nec auct), Amphilochus brunneus with A. spencebatei, M. abscisa with M. latimana, Metopa sarniensis with Parametopa kervillei, Stenula latipes with S. rubrovittata (transferred from Metopa), Melita reidi with M. obtusata, Liljeborgia brevicornis with L. pallida (not the other way round), Calliopius rathkei and C. crenulatus with C. laeviusculus, Parapleustes monocuspis with P. bicuspis, and Ericthonius hunteri with E. difformis. On the other hand the author considers the following pairs of species to be good species: Amphilochoides boecki and A. serratipes, Peltocoxa marioni and P. damnoniensis, Stenothoe crassicornis and S. antennulariae, Hyale stebbingi and H. nilssoni, and Jassa marmorata and J. falcata. Lincoln considers Cheirocratus to be a melitid, Megaluropus a melphidippid, and Cerapus and Ericthonius to belong to the Ischyroceridae.

I am very grateful to Jean Just (København) for his help with this review.

NEWS FROM COLLEAGUES

Because of the long gestation period of this newsletter, some of the contributions to this topic may be old news by now. I apologize.

Chip BIERNBAUM: I am presently working on two major projects: 1) A study of summer and winter occurrences of planktonic amphipods in samples taken over the continental shelf and slope between Capes Hatteras and Canaveral, and 2) a description of the terrestrial and marine amphipods of Ascension Island. Ascension has three fully terrestrial amphipod species in addition to a not untypical tropical marine fauna. I would appreciate learning of recent or on-going African, South American East Coast, Caribbean, and Atlantic island studies so that the origins of the Ascension fauna can be clearly determined. I would also like to contact those who have worked with Talitriator eastwoodae or have any specimens of this species (complex) in their collection.

Juana Rosa CEJAS PULIDO: I am a graduate student, completing my M.Sc. degree in biology at the Dept of Marine Sciences at the University of La Laguna. I'm working now with a catalogne to the species and subspecies of littoral marine amphipods of Tenerife (Canary Islands) to be fimished early in 1982.

Tony FRIEND: I now have a permanent job with the Dept of Fisheries and Wildlife in Perth. At the moment I am conducting research into the biology and ecology of the numbat, a small marsupial mammal, but I am continuing my involvement with land amphipods.

Rainer HARTMANN: I am working on the cave-dwelling amphipod Niphargus aquilex schellenbergi (KARAMAN) at II. Zoologisches Institut, Dept. Ökologie, University of Göttingen, BRD.

The main intentions of my work are investigaticns in abundance and populations ecology in the seasonal sequence. Researches in the biology of reproduction are made furthermore; and there is also made an attempt to find out, up to which degree drift and upstream-migration of the animals are underlying some rhythm. The investigations are essentially made in a mining system in the Harz Mountains, BRD. Laboratory investigations are intended to ensure field results.

Ken-ichi ISHIMARU: He intends to study the biology of the tube-dwelling Corophium complex.

Jim LOWRY: I just spent a month collecting amphipods off the northern coast of Australia. A lot of good material including quite a few amphipods in association with other invertebrates. The most interesting are maxillipiids and iciliids in association with gorgonaceans. Helen Stoddard and I are putting the finishing touches to our subantarctic lysianassid papers and hope to work on Australian lysianassids next year.

Gary POORE: I am working with Jum Lowry on Australian Ampelisca species.

David WILDISH: The sublittoral, benthic productivity chart for the Bay of Fundy mentioned in AN 11 should be completed by September 1981. Sampling of four amphipods (Haploops, Casco, Photis and Harpinia) in the Bay of Fundy, over a 2-yr period, will be finished in November 1980 with 16 out of 24 months sampled. It is planned to determine wet biomass (B), production (P), and annual turnover ratios (P:B) for each of these species, using conventional cohort analytical methods or if cohorts are not distinguishable by modified Hynes method. This method previously used by fresh-water ecologists was found to be suitable for use with marine/estuarine amphipods (Wildish, D.J. 1980, Measurement of secondary production in marine amphipods by modified Hynes method, ICES C.M. 1980/L:33, 8 pp.).

Incidentally, the dominant species of amphipods on the south-western part of the Bay of Fundy, Haploops sp., will shortly be described as a new species in a collaborative paper with Dr. John Dickenson currently at the National Museum of Natural Sciences, Ottawa. It is a small species (max. length 8 mm) with a very low reproductive potential: an average of 5 (range 2-13) eggs per brood with apparently 1 brood/female (semelparity) and a generation time of 2 years.

I am also working on a review of the evolutionary ecology of reproduction in Gammaridean Amphipoda.

REQUESTS FOR INFORMATION

Juana Rosa CEJAS PULIDO: I will be very grateful to all the colleagues of A.N. who can send me reprints of amphipod work of the area I am working on now: Canary Islands and North West Africa.

MISSING TYPES: PHRONIMA COLLETTI AND OXYCEPHALUS PISCATOR

C.T. SHIH

In August 1980, I visited the following museums to study hyperiidean collections: British Museum (Natural History) in London, Zoologisch Museum in Amsterdam, Rijksmuseum van Natuurlijke Historie in Leiden, Zoologische Institut und Zoologisches Museum in Hamburg, Senckenberg Museum in Frankfurt, Zoologisk Museum in Copenhagen, and Muséum national d'Histoire naturelle in Paris. All identified material of phronimids and some of oxycephalids were checked and errors were corrected when time permitted. I found a large number of misidentified specimens in all museums except the Rijksmuseum van Natuurlijke Historie, where Dr. H.-E. Gruner of the Museum für Naturkunde in Berlin, DDR, visited and studied the hyperiidean collection in 1978. In addition, the types of Phronima colletti Bovallius 1887 and Oxycephalus piscator H. Milne-Edwards 1830 were found to be either lost or misplaced.

The 'types' of Phronima colletti, a mature female and an immature male, are placed in a vial together with other Bovallius' types of hyperiideans in a large jar in the Zoologisk Museum in Copenhagen. Morphologically these two specimens are identical with P. pacifica Streets 1977. The locality on the label is 'Indian Ocean' which is different from Bovallius original, brief description[1], South Atlantic. In a later publication[2], Bovallius gave a detailed description and illustrated mature male and female of P. colletti. This description with illustration has been the reference for identifying this species ever since. Dr. Torben Wolff and I agreed that these two specimens are not the types of P. colletti because they were not collected from the type locality and they differ from Bovallius' description and illustration of the species.

In the Muséum national d'Histoire naturelle in Paris I found in a vial, supposedly containing the type of Oxycephalus piscator, five specimens (four females and one male) of O. clausi Bovallius 1887. The label in the vial indicated that these specimens were determined by Bovallius as Milne-Edwards' type of O. piscator. It was mentioned[3] that Alphonse

Milne-Edwards lent a collection of hyperiideans, including some of H. Milne-Edwards'types, to Bovallius. When returning the material, Bovallius probably replaced the type of O. piscator with some specimen of this O. clausi.

1. Bovallius, C. 1887. Systematic list of Amphipoda Hyperiidea. Bih. K. Svenska Vet.-Akad. Handl. Band. 11, No. 16.
2. Bovallius, C. 1889. Contributions to a monograph of the Amphipoda Hyperiidea. Part I: 2. The families Cyllopodidae, Paraphronimidae, Thaumatopsidae, Minonectidae, Hyperiidae, Phronimidae and Anchylomeridae. Kongl. Svenska Vet.- Akad. Handl. Band 22, No. 7.
3. Bovallius, C. 1887. Contributions to a monograph of the Amphipoda Hyperiidae. Part I: 1. The families Tyronidae, Lanceolidae and Vibiliidae.Kongl. Svenska Vet.-Akad. Handl. Band. 21, No. 5. (p.1, footnote 6)

NEW AMPHIPOD SPECIES IN LARRY McKINNEY'S THESIS

At my request, Larry McKinney has sent me the following list of published names and still unpublished new species from his dissertation on the amphipods of the Gulf of Mexico, abstracted earlier in the Amphipod Newsletter. I am certain this list will be very welcome to many colleagues. (WV).

Amphilochus B	A. delacaya McKinney, 1978
Gitanopsis A	G. laguna McKinney, 1978
Photis A	P. macromanus McKinney et al.,1978
Atylus A	Atylus urocarinatus McKinney,1980
Ampithoe A	as yet unpublished
Gammaropsis A	as yet unpublished
Corophium A	appears to be a synonym of C. baconi Shoemaker,1934 (unconfirmed)
Parametopella A	Parametopella texensis McKinney et al., 1978
Photis B	Photis melanicus McKinney, 1980b
Polycheria A	as yet unpublished
Eusiroides A	Eusiroides yucatanensis McKinney, 1980
Liljeborgia A	Liljeborgia bousfieldi McKinney, 1979

Listriella A----------Listriella quintana McKinney, 1979
Listriella B----------L. bahia McKinney, 1979
Listriella C----------L. carinata McKinney, 1979
Ceradocus A----------as yet unpublished
Eriopisa A----------E. incisa McKinney et al., 1978
Maera A----------as yet unpublished
Netamelita A----------Netamelita barnardi McKinney et al., 1978
Megaluropus A----------M. myersi McKinney, 1980
Platyischnopus A----------as yet unpublished
Seba A----------Seba tropica McKinney, 1980

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ALOUF, N.J., 1979. Sur la présence du genre Gammarus au Liban, avec description de deux nouveaux taxa (Crustacea, Amphipoda). ____ Bull. zool. Mus. Adam 6, 177-186. (G. oronticus n.sp. and G. laticoxalis libanicus n.ssp.).

ALOUF, N.J., 1980. Ecologie, biologie et cycle de reproduction des gammares du 'Assi (= Oronto, Liban) (Crustacés, Amphipodes). ____ Annls Limnol. 16, 119-134 (Gammarus syriacus, G. laticoxalis and G. oronticus)

ARENDSE, M.C., 1980. Non-visual orientation in the sandhopper Talitrus saltator (Mont.). ____ Neth. J. Zool. 30, 535-554.

ARIMOTO, I., 1980. A new caprellid amphipod, Caprella (Caprella) iniqua sp. nov. from the Sargassum region of Oita prefecture, Japan. ____ Proc. Jap. Soc. syst. Zool. 18, 27-29.

ARIMOTO, I., 1980. Supplements to the Japanese caprellid fauna. 1. Caprellids from the Korean Straits and adjacent waters. ____ Publ. Seto mar. biol. Lab. 25, 95-113. (Fourteen species, among which Pretritella divina n.gen. n.sp. (near Proliropus), Paracaprella insolita n.sp. Caprella (Spinicephala) minuscula n.sp. and C. (S) minima n.sp.)

ARIMOTO, I., 1979. Fauna of caprellids (Amphipoda, Caprellidae) from Otomi (Uchiura Bay) and Kodomari (Takahama Bay), Fukui prefecture, Japan. ____ Bull. biogeogr. Soc. Japan 34, 29-32.

ARIMOTO, I., 1979. A new species Caprella (C.) liliata from Uchiura Bay, Fukui prefecture, Japan. ____ Ann. Repts Stud. Bunkyo Univ. Women's Coll. 23, 1-2.

ARIMOTO, I. & A. HIRAYAMA, 1979. A list of Caprellidea (Amphipoda) in Oshiko peninsula, Tohoku district, with description of a new species and some new records to Japan. ____ Bull. biogeograph. Soc. Japan 33, 43-53 (with Caprella (Rostricaprella) scitula n.sp.)

ATTAR, E.N. & E.J. MALY, 1980. A laboratory study of preferential predation by the newt Notophthalmus v. viridescens. ____ Can. J. Zool. 58, 1712-1717 (The newts preferred Hyalella over Daphnia, especially at high densities).

BARNARD, J.L., 1980. Revision of Metharpinia and Microphoxus (marine phoxocephalid Amphipoda from the Americas). ____ Proc. biol. Soc. Wash. 93, 104-135 (Microphoxus (typespecies M. minimus) has Metharpinia cornuta as second species. Metharpinia (type species M. longirostris) has 4 further species: Paraphoxus jonesi, Pontharpinia floridana, M. oripacifica n.sp. from Pacific Costa Rica (= Paraphoxus floridanus s. Barnard 1960) and M. coronadoi n.sp. from southern California).

BARNARD, J.L., 1980. The genus Grandifoxus (Crustacea: Amphipoda: Phoxocephalidae) from the northeastern Pacific Ocean. ____ Proc. biol. Soc. Wash. 93, 490-514 (Grandifoxus (type species Phoxus grandis= Pontharpinia milleri) has in the Americas the following further species: G. sp. J. from California, Pontharpinia longirostris Gurjanova, G sp. R. from Alaska, G. sp. 51 from Alaska and Pontharpinia robusta (with P. robusta lindbergi). The latter, not reexamined here, may be identical with sp. R or sp. 51).

BARNARD, J.L. & C.M. BARNARD, 1980. Two new phoxocephalid genera, Fuegiphoxus and Phoxorgia, from magellanic South America (Amphipoda: Crustacea). ____ Proc. biol. Soc. Wash. 93, 849-874 (Fuegiphoxus n. gen.has as type species Parharpinia fuegiensis from Tierra del Fuego, and as further species F. inutilus n.sp. from South Georgia, F. abjectus n.sp. from Bahia Inutil, S. Georgia, and possibly Pontharpinia uncinata. Phoxorgia n. gen. is monotypic, based on Parharpinia sinuata (= P. villosa s. Schellenberg) from Bahia Inutil.)

BARNARD, J.L. & G.S. KARAMAN, 1980. Classification of gammarid Amphipoda. ____ Crustaceana, Suppl. 6, 5-10 (A critique of Bousfield's 1977 classification of Gammaridae s.l.. "The lack of definable discontiguous clusters prevents nomenclatural recognition of superfamilies, families, and subfamilies". A number of examples for this is given, especially in the hadziid-melitid groups).

BEK, T.A., T.L. BEER, N.M. KALYAKINA & N.L. SEMENOVA, 1980. (Ecology of some mass species of invertebrates in the White Sea). ____ Soviet J. mar. Biol. 6, 12-17 (In Russian. Deals with i.a. Gammarus oceanicus, G. duebeni and Marinogammarus obtusatus.)

BELLAN-SANTINI, D., 1980. Relationship between populations of amphipods and pollution. ____ Mar. Poll. Bull. 11, 224-227 ("Inverse relationship exists between the richness of the population and the degree of pollution").

BIERNBAUM, C.K., 1980. Occurrence of the tramp terrestrial amphipods Talitroides alluaudi and Talitroides topitotum (Amphipoda: Talitridae) in South Carolina, USA. ____ Brimleyana 1980-3, 107-112.

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BLEAKNEY, J.S., S.M. ROBINSON & J.C. WAUGH, 1980. Endolithic fauna of vacated Zirfaea crispata L. burrows in Blomidan shale, Minas Basin, Nova Scotia. ____ Proc. Nov. Scot. Inst. Sci. 30, 55-63 (Amphipods on p. 60; 10 spp of which Ampithoe rubricata, Corophium bonellii, Phoxocephalus holbolli and Pontogeneia inermis are codominants).

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BOROWSKY, B., 1980. Reproductive patterns of three intertidal saltmarsh gammaridean amphipods. ____ Mar. Biol. 55, 327-334 (Gammarus palustris, G. mucronatus and Melita nitida in the New York area).

BOU, C., 1979. Les Crustacés malacostracés liés au milieu aquatique souterrain de la bordure de la Gresigne. ____ Bull. Féd. Tarn spéléo-archéol. 16, 34-42.

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BOU, C. & S. RUFFO, 1979. (Contribution on the knowledge of the Bogidiella's of Greece (Crustacea Amphipoda Gammaridae). ____ Natura, Riv. Sci. nat. 70, 295-309. (In Italian, with English and French summaries. Deals with B. skopljensis, B. longiflagellum and B. cerberus n.sp., the latter found in brackish water in a Peloponnesian cave).

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EDLUND, A.M. & C. MAGNHAGEN, 1981. Food segregation and consumption suppression in two coexisting fishes, Pomatoschistus minutus and P. microps: an experimental demonstration of competition. ____ Oikos 36, 23-27.

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GULLIKSEN, B., 1979. Shallow water benthic fauna from Bear Island. ____ Astarte 12, 5-12.

GULLIKSEN, B., T. HAUG & O.K. SANDNES, 1980. Benthic macrofauna on new and old lava ground at Jan Mayen. ____ Sarsia 65, 137-148.

GURJANOVA, E.F., 1980. (Some new data in taxonomy of family Phoxocephalidae sensu lato (Amphipoda, Gammaridea). Report II) ____ Akad. Nauk SSSR, Issledov. Faun. Mor. 25, 89-97.(In Russian. Treats the Phoxocephalinae, with the genera Joubinella (6 pp), Urophoxus (1), Pontharpinia (with Metharpinia as synonym) (30), and Synphoxus n. gen., type S. novaezealandicus n.sp. from off New Zealand. Urophoxus pinguis (Haswell) is redescribed, and Pontharpinia westi n.sp. from the Kurile Islands newly described. Pontharpinia schellenbergi is proposed as nom. nov. for Metharpinia longirostris Schellenberg 1931 (non P. longirostris Gurjanova 1938, a somewhat

surprising move as Schellenberg's species is the elder of the two).

GURJANOVA, E.F., 1980. (Some new data in taxonomy of family Phoxicephalidae sensu lato (Amphipoda, Gammaridea). Report III). ____ Akad. Nauk SSSR, Issledov. Faun. Mor. 25, 98-100. (In Russian. The monotypic new subfamily Waipirophoxinae is erected, based on Waipirophoxus n. gen., with as type and only species Paraphoxus waipiro Barnard 1972 from Wellington, N.Z.)

HAGER, R.P. & R.A. CROKER, 1980. The sand-burrowing amphipod Amphiporeia virginiana Shoemaker 1933 in the tidal plankton. ____ Can. J. Zool. 58, 860-864.

HAINES, J.L. & D. MAURER, 1980. Quantitative faunal associates of the serpulid polychaete Hydroides dianthus. ____ Mar. Biol. 56, 43-48 (Not seen. Deals with i.a. Unciola serrata, Corophium simile and C. tuberculatum)

HALLBERG, E., H.L. NILSSON & R. ELOFSSON, 1980. Classification of amphipod compound eyes: The fine structure of the ommatidial units (Crustacea, Amphipoda). ____ Zoomorphologie 94, 279-306.

HARRIS, P.R., 1979. The winter feeding of the Turnstone in North Wales. ____ Bird Study 26, 259-266 (Main food Gammarus s.l. spp, Littorina and barnacles)

HARTNOLL, R.G. & S.M. SMITH, 1980. An experimental study of sex discrimination and pair formation in Gammarus duebeni (Amphipoda) ____ Crustaceana 38, 253-264.

HARTOG, C. den & R.P.W.M. JACOBS, 1980. Effects of the "Amoco Cadiz" oil spill on an eelgrass community at Roscoff (France) with special reference to the mobile benthic fauna. ____ Helgol. Meeresunters. 33, 182-191.("The very diverse amphipod fauna had disappeared and had been replaced by a population of Gammarella fucicola and Gammarus locusta; the latter was absent in the year before the oil disaster took place!")

HAUKSSON, E., 1980. (Survey of the littoral fauna of the inner part of Eyafjörður, N-Iceland). ____ Natturugripasafnid á Akureyri 10, 1-24 (In Icelandic)

HENTSCHEL, H., 1979. (Occurrence of Echinorhynchus truttae (Acanthocephala) in the epirhithron of a brook in the Mittelgebirge (West Germany). ____ Ber. naturhist. Ges. Hannover (122), 109-124 (In German, not seen).

HERBST, G.N., 1980. Effect of burial on food value and consumption of leaf detritus by aquatic invertebrates in a lowland forest stream. ____ Oikos 35, 411-424 (i.a. Gammarus pseudolimnaeus)

HIBBITS, J., 1978. Marine Eccrinales (Trichomycetes) found in crustaceans of the San Juan archipelago, Washington. ____ Syesis 11, 213-261 (Not seen).

HICKLIN, P.W. & P.C. SMITH, 1979. The diets of five species of migrant shorebirds in the Bay of Fundy. ____ Proc. Nov. Scotia Inst. Sci. 29, 483-488 (In 4 of the 5 species the diet consisted mainly of Corophium volutator)

HIRAYAMA, A., 1980. Gammaridea Amphipoda of the intertidal reef flat of Ishigaki island, Ryukyu archipelago. Part 1. genus Hyale. ____ Publs Seto mar. biol. Lab. 25, 131-156(Deals with H. didendactyla n.sp., H. corallinacola n.sp., H. ishigakiensis n.sp. and Hyale spp. 1 and 2).

HIRAYAMA, A. & T. KIKUCHI, 1980. A new gammaridean Amphipoda, Colomastix azunai, sp. nov., living in the sponge, Tetilla serica. ____ Publs Amakusa mar. biol. Lab. 5, 133-141.

HIRAYAMA, A. & T. KIKUCHI, 1980. A new gammaridcan (sic) Amphipoda, Waldeckia elephas sp. nov., attaching to the set net in Tomioka Bay, Amakusa, Japan. ____ Publs Amakusa mar. biol. Lab. 5, 143-151.

HIRAYAMA, A. & T. KIKUCHI, 1980. Caprellid fauna associated with subtidal algal beds along the coast of the Oshika peninsula, Tohoku district. ____ Publs Amakusa mar. biol. Lab. 5, 171-188. (With many data about the correlations between exposure and substrate type, and occurrence and body form of the caprellids).

HIROKI, M., 1980. Relation between the two diel phenomena shown by freshwater gammarids __ drift and vertical migration. ____ Crustaceana, Suppl. 6, 182-193. (Observations and experiments on Anisogammarus annandalei and A. jesoensis).

HOLLAND, A.F., N.K. MOUNTFORD, M.H. HIESEL, K.R. KAUMEYER & J.A. MIHURSKY, 1980. Influence of predation on infaunal abundance in Upper Chesapeake Bay, USA. ____ Mar. Biol. 57, 221-235.

HOLSINGER, J.R., 1979. Freshwater amphipod crustaceans (order Amphipoda). ____ Pp 149-180 in D.W. Linzey (ed.) Proceedings Symposium on endangered and threatened plants and animals of Virginia 1978. Blacksburgh, Va (Not seen).

HOLSINGER, J.R., 1980. Stygobromus canadensis, a new subterranean amphipod crustacean (Crangonyctidae) from Canada, with remarks on Wisconsin refugia. ____ Can. J. Zool. 58, 290-297.

HOLSINGER, J.R. & G. LONGLEY, 1980. The subterranean amphipod crustacean fauna of an artesian well in Texas. ____ Smithson. Contr. Zool. 308, 1-62 (New Taxa: Texiweckelia (Hadziidae n. gen., type species Mexiweckelia texensis), T. insolita n. gen., T. samacos n.sp., Allotexiweckelia (Hadziidae n. gen., type species A. hirsuta n. sp.),Parabogidiella (Bogidiellidae n.gen., type species P. americana n. sp.), Artesiidae n. fam. (in Bogidielloidea), Artesia n. gen. (Artesiidae, type species A. subterranea n. sp.) seborgiinae n. subfam. (Sebidae), Seborgia relicta n. sp. All new taxa have been described by Holsinger, and thus should be cited as "Holsinger, in Holsinger & Longley")

HOLSINGER, J.R. & A.W. SKALSKI, 1980. The taxonomy and systematic status of Crangonyx paxi Schellenberg (Crangonyctidae). ____ Crustaceana, Suppl. 6, 17-26 (C. paxi is a valid, somewhat aberrant species of Crangonyx.)

HOLTHUIS, L.B., 1979. "H. Milne Edwards's "Histoire naturelle des Crustacés" (1834-1840) and its dates of publication. ____ Zool. Meded, Leiden 53, 285- 296.

HOPPENHEIT, M., C.N. MURRAY & D.S. WOODHEARD, 1980. Uptake and effects of americium- 241 on a brackish-water amphipod. ____ Helgol. Meeresunters. 33, 138-152. (The amphipod is Gammarus d. duebeni).

HOSSACK, K. & R.A. COSTELLO, 1979. Predation by Anisogammarus confervicolus (Amphipoda: Gammaridea) on Aedes toqoi (Diptera, Culicidae). ____ Entomol. Soc. Brit. Col. 76, 20-21.

HULEBAK, K.L., 1980. Mechanical transmission of larval Trichinella by arctic Crustacea. ____ Can. J. Zool. 58, 1388-1390.(Scavenging amphipods as transmittors of this dangerous nematode).

ICELY, J.D. & J.A. NOTT, 1980. Accumulation of copper within the "hepatopancreatic" caeca of Corophium volutator (Crustacea: Amphipoda). ____ Mar. Biol. 57, 193-199.

JACOBS, R.P.W.M., 1980. Effects of the "Amoco Cadiz" oil spill on the seagrass community at Roscoff with special reference to the benthic infauna. ____ Mar. Ecol. Progr. Ser. 2, 207-212 ("Filter-feeding amphipods were the only group still completely absent after 2 years".)

JAHR, W., M.P.D. MEYERING & W. WÜSTENDÖRFER, 1980. Zur Situation der Gattung Gammarus (Flohkrebse) im Vogelberg. ____ Beitr. Naturk. Osthessen 16, 3-12.

JANNASCH, H.W., R.L. CUHEL, C.O. WIRSEN & C.D. TAYLOR, 1980. An approach for in situ studies of deep-sea amphipods and their microbial gut flora. ____ Deep-Sea Res. 27, 867-872.

JANSSEN, H., M. SCHEEPMAKER, M. van COUWELAAR & S. PINKSTER, 1979. Biology and distribution of Gammarus aequicauda and G. insensibilis (Crustacea, Amphipoda) in the lagoon system of Bages-Sigean (France). ____ Bijdr. Dierk. 49, 42-70.

JARAMILLO, E., W. STOTZ, C. BERTRAN, J. NAVARRO, C. ROMAN & C. VARELA, 1980. (Locomotor activity of Orchestoidea tuberculata (Amphipoda Talitridae) on the surface of a sandy beach of southern Chile (Mehuin, Valdivia province)).____ Stud. neotrop. Fauna Environm. 15, 9-33. (In Spanish)

JAŻDŻEWSKI, K., 1980. Range extensions of some gammaridean species in European inland waters caused by human activity. ____ Crustaceana, Suppl. 6, 84-107.

JENIO, F., 1979. Predation on freshwater gammarids (Crustacea: Amphipoda). ____ Proc. W.Va. Acad. Sci. 51, 67-73 (Not seen).

JENIO, F., 1980. The life cycle and ecology of Gammarus troglophilus Hubricht & Mackin.-Crustaceana, Suppl. 6, 204-215.

JUNÉRA, H. & Y. CROISILLE, 1980. Recherche du lieu de synthèse de la vitellogenine chez le Crustacé Amphipode Orchestia gammarellus (Pallas). Mise en évidence d'une activation de la synthèse protéique dans le tissu adipeux sous-epidermique en liaison avec la production de vitellogenine. ____ CR Acad. Sci. Paris 290 D, 703-706.

JUST, J., 1980. Amphipoda (Crustacea) of the Thule area, Northwest Greenland: Faunistics and Taxonomy. ____ Meddr Grønland, Biosci. 2, 1-61 (A report on 105 spp. New taxa: Aceroides goesi n. sp., Bathymedon antennarius n. sp., Monoculodes vibei n. sp. and Parametopa crassicornis n. sp. all from Bylot Sund. Also fully described, but not formally named, are species complexes near Gitanopsis inermis (as G. spp. A and B), Ischyrocerus anguipes s. l. (as I "spp" T 1, T 2 and T 3) and Paroediceros lynceus (forms A,B and C). Descriptions and illustrations are further provided for Lembos borealis, Ischyroceros latipes, I. megacheir, I. megalops,I. stephenseni (to which all published Greenland records of I. brusilovi in reality belong), Anonyx affinis Ohlin (non A.a. s. Gurjanova), Arrhinopsis longicornis, Monoculodes longirostris, M. intermedius, M. packardi, Oediceros sp. (undescribed), Arctopleustes glabricauda, Pleusymtes glabroides, Stenopleustes olriki,

Metopa bruzelii, M. glacialis, M. longicornis, M. pusilla, M. tenuimana, M. spec. (probably undescribed), Metopella carinata, M. longimana, M. nasuta, Mesometopa neglecta, Stenula nordmanni (transferred from Metopa'";shoemaker's "Proboloides nordmanni"was a different species altogether") and Stenula sp.)

KARAMAN, G.S., 1979. First discovery of genus Mesogammarus Tzv. in Japan, with remarks on some japanese Eogammarus species. Contribution to the knowledge of the Amphipoda 98. ____ Poljoprivreda i Šumarstvo 25, 23-40 (On Mesogammarus melitoides, Eogammarus annandalei and E. jesoensis).

KARAMAN, G.S., 1979. Revision of the genus Paracorophium Stebb. with description of P. chelatum n. sp. and genus Chaetocorophium, n. gen. (fam. Corophiidae)(Contribution to the knowledge of the Amphipoda 100).(Congratulations, Gordan!). ____ Glas. Republ. Zavoda Zašt. Prirode- Prirodnjačkog Muz. Titograd 12, 87-100 (P. chelatum n. sp. from the Palau Islands. Chaetocorophium n. gen.: type and only species Paracorophium lucasi Hurley from Lake Rotoiti, N. Zealand).

KARAMAN, G.S., 1979. Contribution to the knowledge of the Amphipoda 106. Two new Bogidiella species (fam. Gammaridae) from Italy. ____ Glas. Republ. Zavoda Zašt. Prirode- Prirodnjačkog Muz. Titograd 12, 101-115 (B. italica n.sp. and B. paraichnusae n.sp.)

KARAMAN, G.S., 1979. The problems of Salentinella angelieri Del.- Deb. and Ruffo 1952 and its subspecies (Contribution to the knowledge of the Amphipoda 109). ____ Poljoprivreda i Šumarstvo 25, 25-44 (Mainly based on Italian material, the angelieri-group is revised and the following taxa shown to be synonyms of S. angelieri: S. gracillima balcanica, S. a. pisana, S. denticulata and S. franciscoloi)

KARAMAN, G.S. & G.L. PESCE, 1980. Researches in Africa by the zoological institute of l'Aquila, Italy. 5. On three new subterranean amphipods from North Africa (Amphipoda, Gammaridae). ____ Bull. zool. Mus. A'dam 7, 187-207. (Oddly enough, the paper describes only two new taxa, viz. Bogidiella ichnusae africana n.ssp. from Biskra, Algeria, and Metacrangonyx spinicaudata n.sp. from Casablanca, Morocco. The third species is Salentinella angelieri from Morocco.)

KASIMOV, E., 1976. (Crustacea). ____ In Fauna of Azerbaidzhan 4-1. Baku 1976, 251 pp (In Russian, not seen. Amphipoda on pp 198-237, according to Jan Stock).

KHAYRALLAH, N.H. & A.M. JONES, 1980. The ecology of Bathyporeia pilosa (Amphipoda: Haustoriidae) in the Tay estuary. 1. Factors influencing the distribution on Tayport and Tentsmuir beaches. ____ Proc. R. Soc. Edinb. 78 B, 109-119.

KHAYRALLAH, N.H. & A.M. JONES, 1980. The ecology of Bathyporeia pilosa (Amphipoda: Haustoriidae) in the Tay estuary. 2. Factors affecting micro-distribution. ____ Proc. R. Soc. Edinb. 78 B, 121-130.

KOZLOVA, I.V., 1979. (Ecology of abundant crustaceans in the brackish lake Duvankul) ____ Soviet J. Ecol. 10, 358-359 (In Russian, not seen).

KRAPP-SCHICKEL, G. & A. MYERS, 1979. The Mediterranean species of Gammaropsis Liljeborg (Crustacea, Amphipoda). ____ Boll. Mus. Civ. St. Nat. Verona 6, 441-467. (Deals with G. dentata, G. pseudoostroumovi, G. ostroumovi, G. emancipata n. sp. G. maculata (incl. G. erythrophthalmus), G. crenulata n. sp. G. ulrici n.sp., G. togoensis, G. sophiae (incl. G. pusilla) and G. palmata. A key to the Mediterranean species is provided).

KRUSCHWITZ, L.G., 1978. Environmental factors controlling reproduction of the amphipod Hyalella azteca. ____ Proc. Oklahoma Acad. Sci. 58, 16-21.

LAVAL, Ph., 1980. Hyperiid amphipods as crustacean parasitoids associated with gelatinous plankton. ____ Oceanogr. mar. Biol. ann. Rev. 18, 1-56 (A very important review, destined to become a classic).

LEDOYER, M., 1979. Les Gammariens de la pente externe du Grand Recif de Tuléar (Madagascar)(Crustacea, Amphipoda). ____ Mem. Mus. Civ. St. Nat. Verona (2) 2, 1-150. (This important monograph was substantially finished in manuscript as early as 1974; few later papers have been considered, although the author states that the newer literature in no case has invalidated the new taxa in this paper. New taxa: Ampelisca pugetica microdonta n. ssp., Amphithoe plumicornis n.sp., Colomastix armata n.sp., C. cornuta n.sp., C. inaequicornis n. sp., C. plumosa n.sp., C. spinosa n.sp., C. truncatipes n.sp. (a synoptic key to Colomastix is also given), Cheiriphotis durbanensis K.H. Barnard (originally described as forma of C. megacheles), C. madagascarensis n.sp., Gammaropsis atlantica forme A, ? ssp 1 and ? spp 2, G. denticulata n.sp., G.dilatata n.sp., G. latipalma n.sp., G. pseudodenticulata n.sp., Konatopus latipalma n.sp. (Neomegamphopus kunduchii is also removed to Konatopus), Photis cavimana n.sp., Pseudomegamphopus chelatus n.sp., Xenocheira angusticarpa n.sp.,

Atylus brevitarsus n.sp., Dexaminella aegyptiaca ovata n.ssp. (D. rotundicoxa is also delegated to subspecies status under D. aegyptiaca), Guernea tenuipes n.sp., Haustoriopsis latipes n.sp., Paradexamine micronesica n.sp. (= Dexaminoides orientalis s. Barnard 1965), P. mozambica n.sp., Sphaerophthalmus acutipes n.sp. (in the Dexaminidae), Ceradocus crenatipalma n.sp., C. mahafalensis n.sp., Cheirocratus unidentatus n.sp., Elasmopus molakai pilosus n.ssp., Eriopisa (s.l.) melitaformis n.sp. (perhaps a Protohadzia), Maera aequimana n.sp., Mallacoota subinsignis n. sp., Megaluropsis excavatus n.sp., M. sinuatus (was in Tulearogammarus, a genus which the author now suppresses, as it was in part based on erroneous observations), ? Melita excavata n.sp., ? Ericthonius latimanus n.sp., Ischyrocerus oaku armatus n.ssp., Parajassa bidentata n.sp., P. spinipalma n.sp., Ventojassa crenulata n.sp., Metaphoxoides angustimanus n.sp., Laetmatophilis intermedius n.sp., Stenothoe inermis n.sp. (=? S. spec. B. Barnard 1970 from Hawaii), Metatiron caecus n.sp., Hyale inermis n.sp., Tulearidae n. family (near Thaumatelsonidae) with Tulearus thomassini n.gen. n.sp. More or less complete illustrations are also furnished of the following species: Ampelisca natalensis, Gitanopsis pusilla, Amphithoe cavimana, A.kaneohe, Paranamixis? indicus, Colomastix lunalilo, Cheiriphotis durbanensis, Concholestes dentalii, Ledoyerella isochelata, Microdeutopus tridens, Photis kapapa, Photis longicaudata, Unciolella spinosa, Atylus granulosus, Paradexamine cf. marlie, P. orientalis, Ceradocus serratus, C. spiniferus, Elasmopus dubius, E. hooheno, Maera mastersi, M. octodens, Maerella ? tenuimana, Melita appendiculata, Nuuanu amikai, Platyischnopus herdmani, Cerapus tubularis, Parajassa chilkoa, Ventojassa ventosa, Leucothoe ctenochir, L. hyhelia, L. lihue, L. micronesiae, L. richiardii, L. spinicarpa, Leucothoella bannwarthi, Leucothoides pottsi, Listriella cf. dahli, Kerguelenia nov. spec. (in the text as Acontiostoma sp., erratum slip provided), Amaryllis macrophthalma, Aristias symbioticus, Lysianassa variegata, Socarnes ? obesa, Stomacintion prionoplax, ? Melphisana sp., Kanaloa manoa, Periocculodes serra, Pereionotus cf. alaniphlias, P. testudo (Medit. material), Metaphoxoides picardi, Laetmatophilus hala, Podocerus cf. mangarevae, P. cf. palinuri, P. walkeri, Seba ekepuu, Wallametopa cabon (Parametopa grandimana may be a synonym), Metatiron brevidactylus, Synopia scheeleana, S. variabilis and Hyale nigra).

LEE, K.S. & H.S. KIM, 1980. On the geographical distribution and variation of freshwater Gammarus in Korea, including descriptions of four new species. ____ Crustaceana, Suppl. 6, 44-67 (Five species, of which G. sobaegensis was originally described as a subspecies of G. pulex and the other four are new species: G. odaensis n.sp., G. soyoensis n.sp., G. zeongogensis n.sp. and G. galgosensis n.sp.)

LEE, W.Y., A. MORRIS & D. BOATWRIGHT, 1980. Mexican oil spill: a toxicity study of oil accomodated in seawater on marine invertebrates. ____ Mar. Poll. Bull. 11, 231-234 (Oil in seawater was not particularly toxic to Parhyale hawaiensis, during 1 week's exposure at 0-50% OAS).

LEVINGS, C.D., 1980. The biology and energetics of Eogammarus confervicolus (Stimpson) (Amphipoda, Anisogammaridae) at the Squamish River estuary, B.C. ____ Can. J. Zool. 58, 1652-1663.

LINCOLN, R.J. & D.E. HURLEY, 1980. Scutocyamus antipodensis n. sp. (Amphipoda: Cyamidae) on Hector's dolphin (Cephalorhynchus hectori) from New Zealand. ____ N.Z. J. mar. Freshw. Res. 14, 295-301.

LINDSTRÖM, M. & A. LINDSTRÖM, 1980. Swimming activity of Pontoporeia affinis (Crustacea, Amphipoda). Seasonal variations and usefulness for environmental studies. ____ Ann. zool. fenn. 17, 213-220.

LINDSTRÖM, M. & A. LINDSTRÖM, 1980. Changes in the swimming activity of Pontoporeia affinis (Crustacea, Amphipoda) after exposure to sublethal concentrations of phenol, 4- chlorophenol and styrene. ____ Ann. zool fenn. 17, 221-231.

LIPA, J. & S. RAKUSA-SUSZCZEWSKI, 1980. An amphipod Paramoera walkerii Stebbing (Crustacea, Amphipoda) as a new host of eugregarine Rotundula gammari (Diesing). ____ Pol. Arch. Hydrobiol. 27, 313-315.

LOGACHEV, V.S. & Yu. E. MORDVINOV, 1979. (The swimming speed and the activity of larval round goby and of some predatory crustaceans from the Black Sea). ____ Biol. Morya (Vladivostok) 131, 77-80 (In Russian, not seen. Deals i.a. with "Gammarus")

LOGAN, A., 1979. The recent Brachiopoda of the Mediterranean Sea. ____ Bull. Inst. océanogr. 72, 1-112 (Aristias neglectus in Terebratulina reversa, see p. 40).

LOOYENGA, P.J. & J.C. DIELEMAN, 1980. Effect of tidal simulations and entraiment of an endogenous tidal rhythm in a non-tidal population of Gammarus zaddachi. ____ Bijdr. Dierk. 50, 35-51.

LOWRY, J.K., 1981. The amphipod genus Cerapus in New Zealand and subantarctic waters (Corophioidea, Ischyroceridae) ____ J. nat. Hist. 15, 183-211 (Realizing that speciation in N.Z. Cerapus showed many analogies to that among Tolkien's hobbits, Jim called his new taxa Cerapus harfootus n.sp., C. stoorus n.sp. and C. fallohideus n.sp. (all from Kaikoura). The other N.Z. species are C. oppositus and C. sismithi).

MACDONALD, A.G. & I. GILCHRIST, 1980. Effects of hydraulic decompression and compression on deep sea amphipods. ____ Comp. Biochem. Physiol. 67 A, 149-154.

McKINNEY, L.D., 1980. Four new and unusual amphipods from the Gulf of Mexico and Caribbean Sea. ____ Proc. biol. Soc. Wash. 93, 83-103 (Atylus urocarinatus n.sp. (Texas), Eusiroides yucatanensis n.sp. (Yucatan), Megaluropus myersi n.sp. (Yucatan) and Seba tropica n.sp. (Texas).

McKINNEY, L.D., 1980. The genus Photis (Crustacea: Amphipoda) from the Texas coast with the description of a new species. ____ Contr. mar. Sci. 23, 57-62 (With Photis melanicus n.sp.)

MACPHERSON, B.R. & V.J. STEELE, 1980. Microanatomy of the central nervous system of Gammarus setosus Dementieva: the suboesophageal ganglion and ventral ganglion chain. ____ Crustaceana, Suppl. 6, 108-111.

MACPHERSON, B.R. & V.J. STEELE, 1980. Microanatomy of the central nervous system of Gammarus setosus Dementieva (Amphipoda). The supraoesophageal ganglion. ____ Crustaceana 38, 113-120, Pls 1-2.

MACQUART-MOULIN, C. Effects de la temperature sur les rythmes d'emergence des Peracaridés fouisseurs. Urothoe elegans (Amphipoda) et Eurydice inermis (Isopoda). ____ Mar. Behav. Physiol. 7, 65-83.

MAKKAVEEVA, E.B., 1979. (Invertebrates in seaweed beds of the Black Sea). ____ Naukova Dumka. Kiev, 227 pp (In Russian, not seen. Further data on this book will be much appreciated).

MALLEY, D.F. & J.B. REYNOLDS, 1979. Sampling strategies and life history of non-insectan freshwater invertebrates. ____ J.Fish. Res. Bd Can. 36, 311-318.

MARCHANT, R.B. & H.B.N. HYNES, 1981. Field estimates of feeding rates for Gammarus pseudolimnaeus (Crustacea: Amphipoda) in the Credit River, Ontario. ____ Freshw. Biol. 11, 27-36.

MAREN, M.J. van, 1980. The autecology of some gammaridean Amphipoda and their role as intermediate parasite hosts. ____ Diss., Univ. Amsterdam, 11 pp.

MATHIEU, J., 1980. Activité locomotrice et metabolisme respiratoire à 11°C de 1' amphipode troglobie Niphargus rhenorhodanensis Schellenberg, 1937. ____ Crustaceana, Suppl. 6, 160-169.

MATHIEU, J. & J. GIBERT, 1980. Evolution des teneurs en protéines, glucides et lipides de Niphargus rhenorhodanensis Schellenberg comparée entre 1'élevage en milieu naturel reconstitué et le jeûne experimental. ____ Crustaceana, Suppl. 6, 126-136.

MATHIEU- CAPDEROU, C., 1980. Relation entre la maturation ovocytaire et 1' exuviation chez le Crustacé Amphipode Orchestia gammarellus (Pallas). ____ C.R. Acad. Sci. Paris 290 D, 1495-1498.

MEADOWS, P.S. & A.A. RUAGH, 1981. Temperature preferences and activity of Corophium volutator (Pallas) in a new choice apparatus. ____ Sarsia 66, 67-72.

MEYER-ROCHOW, V.B. & K.M. TIANG, 1979. The effects of light and temperature on the structural organization of the eye of the antarctic amphipod Orchomene plebs (Crustacea). ____ Proc. R. Soc. Lond. B 206, 353-368.

MARSDEN, I.D., 1980. Effects of constant and cyclic temperatures on the salinity tolerance of the estuarine sandhopper Orchestia chiliensis. ____ Mar. Biol. 59, 211-218.

MEYERING, M.P.D., 1980. Die Werra-Lebensraum für Meerestiere? ____ Die Weser 54 (no pagination).

MEYERING, M.P.D., 1980. Drift, upstream-migration, and population dynamics of Gammarus fossarum Koch. ____ Crustaceana, Suppl. 6, 194-203.

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MILLS, A. & J.D. FISH, 1980. Effects of salinity and temperature on Corophium volutator and C. arenarium (Crustacea: Amphipoda), with particular reference to distribution. ____ Mar. Biol. 58, 153-161.

MILLS, B.J., P.S. LAKE & R.SWAIN, 1980? Two freshwater crustaceans suitable for toxicity tests in Australian water. ____ Tech. Rep. Water Stud. Cent. Canfield Inst. Technol. (10), 1-19 (Not seen. One of the species recommended is Austrochiltonia australis. Can anyone get me a copy of this paper? WV)

MOORE, J.W., I.A. MOORE & P. N. CLARIDGE, 1979. Seasonal changes in density, composition and reproductive biology of crustacean populations in the Severn estuary, England, U.K., ____ Crustaceana 36, 113-122 (i.a. Gammarus salinus)

MOORE, P.G., 1980. Corophium sextonae in Scottish waters. ____ J. mar. biol. Ass. U.K. 60, 1075.

MOORE, P.G., 1980. The life histories of the amphipods Lembos websteri Bate and Corophium bonnellii Milne Edwards in kelp holdfasts. ____ J. exp. mar. Biol. Ecol. 49,1-50.

MORDUKHAY-BOLTOVSKOJ, F.D., 1978. (The composition and range of the Caspian fauna based on recent data). ____ Pp 100-139 in G.G. VINBERG (ed.). Ehlementy vodnykh ehkosistem. Nauka, Moscow. (In Russian, not seen)

MORRISON, S.J. & D.C. WHITE, 1980. Effects of grazing by estuarine gammaridean amphipods on the microbiota of allochthonous detritus. ____ Appl. environm. Microbiol. 40, 659-671. (Not seen).

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MOULDER, S.M., 1980. Combined effect of the chlorides of mercury and copper in sea water on the euryhaline amphipod Gammarus duebeni, ____ Mar. Biol. 59, 193-200.

MYERS, A.A., 1979. Studies on the genus Lembos Bate VIII Atlantic species 5. L. tigrinus sp. nov., L. tempus sp. nov., L. spinicarpus (Pearse) comb. nov. with ssp. inermis nov., L. ovalipes sp. nov., L. unifasciatus Myers ssp. reductus nov. ____ Boll. Mus. Civ. St. Nat. Verona 6, 221-248 (Lembopsis is synomymized with Lembos)

MYERS, A.A., 1979. Studies on the genus Lembos Bate IX. Atlantic species 6: L. longipes (Liljeborg), L. websteri Bate, L. longidigitans (Bonnier), L. (Arctolembos sub-gen. nov.) arcticus (Hansen). ____ Boll. Mus. Civ. St. Nat. Verona 6, 249-275.

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NAIR, K.K.C., 1973. On the occurrence of Dairella latissima and Dairella californica (Amphipoda) in the Indian Ocean. ____ I.O.B.C. Handb. 5, 55-59.

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NAIR, K.K.C., J. GEORGE & T.S.S. RAO, 1973. Distribution of certain planktonic crustaceans & insect Halobates in the Indian Ocean. ____ Indian J. Sci. 2, 116-121.

NELSON, W.G., 1980. The biology of eelgrass (Zostera marina L.) amphipods. ____ Crustaceana 39, 59-89. (Ampithoe longimana, Cymadusa compta, Elasmopus levis and Melita appendiculata. Also data on the mainly infaunal species Ampelisca abdita, Trichophoxus epistomus, Corophium acherusicum and Lembos websteri).

NELSON, W.G., 1980. Reproductive patterns of gammaridean amphipods. ____ Sarsia 65, 61-72.

NICOTRI, M.E., 1980. Factors involved in herbivore food preference. ____ J. exp. mar. Biol. Ecol. 42, 13-26 (A most interesting paper, which deals i.a. with Ampithoe valida and isopods).

OLERÖD, R., 1980. A taxonomic study of the lysianassid genus Centromedon G.O.Sars (Crustacea, Amphipoda). ____ Zool. Scripta 9, 35-52 (Centromedon affinis and Tryphosa rusanovi are considered synonyms of C. productus).

OLIVER, J.S., P.N. SLATTERY, L.W. HULBERG & J.W. NYBAKKEN, 1980. Relationships between wave disturbance and zonation of benthic invertebrate communities along a subtidal high-energy beach in Monterey Bay, California. ____ Fish. Bull. 78, 437-454.

OPALINSKI, K.W., 1980. Oxygen consumption in tropical amphipods. ____ Pol. Arch. Hydrobiol. 27, 513-522 (Data on Vibilia propinqua, sp. and Synopia sp. "The mean value of the oxygen consumption rate for tropical Amphipoda is much higher than for temperate zone amphipods").

ORTIZ, M., 1979. (A contribution to the study of the amphipods (Gammaridae) of the American Mediterranean Sea). ____ Invest. mar. cienc. (8) 45, 1-16. (In Spanish. List of amphipods collected during several cruises).

ORTIZ TOUZET, M., 1979. (List of species and bibliography of the amphipods (Crustacea: Amphipoda) of the American Mediterranean Sea). ____ Invest. mar. cienc. (8) 43, 1-40 (In Spanish).

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PHILLIPS, N.W., 1980. A comment on energy maximization by deposit feeders. ____ Limnol. Oceanogr. 25, 1143-1145. (A comment on a papers by Doyle who used Corophium volutator to test a prediction of energy-optimation theory. Doyle's reply: "On the logic of using individual animals" is on pp 1145-1147).

PINKSTER, S. & N.W. BROODBAKKER, 1980. The influence of environmental factors on distribution and reproductive success of Eulimnogammarus obtusatus (Dahl, 1938) and other estuarine gammarids. ____ Crustaceana, Suppl. 6, 225-241.

PINKSTER, S., J.DIELEMAN & D. PLATVOET, 1980. The present position of Gammarus tigrinus Sexton, 1939, in the Netherlands, with the description of a newly discovered amphipod species, Crangonyx pseudogracilis Bousfield, 1958 (Crustacea, Amphipoda). ____ Bull. zool. Mus. Univ.A'dam 7, 33-45.

PINKSTER, S. & G.S. KARAMAN, 1978. A new blind Gammarus species from Asia Minor, Gammarus vignai n.sp. (Crustacea, Amphipoda). ____ Quad. Speleol., Circ. speleol. romano 3, 27-36.

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POMEROY, W.M. & C.D. LEVINGS, 1980. Association and feeding relationships between Eogammarus confervicolus (Amphipoda, Gammaridae) and benthic algae on Sturgeon and Robert Bank, Fraser River Estuary. ____ Can. J. Fish. aq. Sci. 37, 1-10.

POST, A. & A. SVOBODA, 1980. Strandfunde mesopelagischer Fische aus dem Golfe von Akaba. ____ Arch. Fischereiwiss. 30, 137-143. (Millions of Anchylomera blossevillii washed ashore near Aqaba)

PRUNUS, G., M.S. DRIDI & N. SAVOURÉ, 1978. Les peuplements littoraux et leur intérêt ecologique dans les milieux lagunaires du nord de la Tunisie. ____ Bull. Off. natn. Pêch. Tunisie 2, 227-234.

RACHOR, E., 1980. The inner German Bight-an ecologically sensitive area as indicated by the bottom fauna. ____ Helgol. Meeresunters. 33, 522-530.

RETALLACK, J.T. & H.F. CLIFFORD, 1980. Periodicity of crustaceans in a saline prairie stream of Alberta, Canada. ____ Am. Midl. Nat. 103, 123-132 (i.a. Gammarus lacustris and Hyalella azteca)

RICHARDSON, A.M.M., 1980. Notes on the occurrence of Talitrus dorrieni Hunt (Crustacea Amphipoda: Talitridae) in south-west England. ____ J. nat. Hist. 14, 741-757.

RITZ, D.A., 1980. Tolerance of intertidal amphipods to fluctuating conditions of salinity, oxygen and copper. ____ J. mar. biol. Ass. U.K. 60, 489-498 (Gammarus duebeni and Marinogammarus marinus)

ROBERTSON, A.I. & K.H. MANN, 1980. The role of isopods and amphipods in the initial fragmentation of eelgrass detritus in Nova Scotia, Canada. ____ Mar. Biol. 59, 63-69 (observations and experiments on Idotea spp and Gammarus oceanicus. The latter spent 30% of its active time feeding on dead, intact eelgrass leaves, which had been recently been released from plants, against 50% filter-feeding.)

ROBERTSON, P.B. & C.R. SHELTON, 1980. Lepidactylus triarticulatus n. sp., a new haustoriid amphipod from the northern Gult of Mexico. ____ Gulf Res. Repts 6, 415-420 (With a key to the genus, including two further new species, under description elsewhere).

ROUX, C., A.L. ROUX & Y. OPDAM, 1980. Repartition écologique et metabolisme respiratoire de Gammarus roeselii Gervais, 1835. ____ Crustaceana, Suppl. 6, 148-159.

RUFFO, S., 1979. (Studies on Crustacea Amphipoda 90. Description of two new blind amphipods from Iran and Madagascar (Phreatomelita paceae n. gen. n. sp., Dussartiella madegassa n. gen. n. sp.). ____ Bull. Mus. Civ. St. Nat. Verona 6, 419-440 (In Italian, English summary. P. paceae from Iran is close to Psammoniphargus, Paraniphargus and Galapsiellus "in the hadziid group". Dussartiella is related to Protocrangonyx and Paracrangonyx, somewhat less to Austroniphargus. The author considers any proposal concerning a new systematic arrangement of the Gammaridae s.l. at this time to be premature).

SAGAR, P.M., 1980. Life cycle and growth of the antarctic gammarid amphipod Paramoera walkeri (Stebbing, 1906). ____ J. roy.Soc. N.Z. 10, 259-270.

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SANDERS, H.O., 1980. Sublethal effects of toxaphene on daphnids, scuds and midges. ____ Ecol. Res. Ser. US environm. Protect. Agency (EPA- 600/3-80- 006), 25 pp. (The scud is Gammarus pseudo-limnaeus)

SANDLUND, O., 1980. (New findings of Gammarus lacustris in southeastern Norway). ____ Fauna, Oslo 33, 161. (Norwegian with English summary).

SANTOS, S.L. & J.L. SIMON, 1980. Response of soft-bottom benthos to annual catastrophic disturbance in a South Florida estuary. ____ Mar. Ecol. Progr. Ser. 3, 347-355 (Amph. on p. 354: Ampelisca abdita and Grandideriella bonnieroides were among the numerically dominant species).

SARVIRO, V.S., 1980. (Temperature aspects of ecology of Gammarus lacustris) ____ Ekologiya 1980 (1), 57-64 (In Russian, not seen).

SCAPINI, F. & L. PARDI, 1979. (New data on the innate directional tendency in the solar orientation of littoral amphipods). ____ Atti Accad. naz. d. Lincei (8) 66, 592-597 (In Italian. New experiments confirm the existence of an innate directional tendency in solar orientation, which varies according to the disposition of the home beach. Correct orientation persists even in the offspring of parents, reared in captivity).

SCHIECKE, U., 1978. Neue Amphipoda (Crustacea) vom Golf von Neapel (Italia). ____ Boll. Mus. Civ. St. Nat. Verona 5, 355-368. (Bogidiella tyrrhenica n. sp., Corophium minimum n.sp., Siphonoecetes neapolitanus n. sp.)

SEMENCHENKO, V.P., 1979. (Adaptive change of metabolism in the relict amphipod Pontoporeia affinis) ____ Zh. Obshch. Biol. 40, 740-745 (In Russian, not seen).

SHERIDAN, P.F., 1979. Three new species of Melita (Crustacea: Amphipoda), with notes on the amphipod fauna of the Apalachicola estuary of northwest Florida, USA. ____ Northeast Gulf Sci. 3, 60-73. (Melita elongata n. sp., M. longisetosa n. sp. and M. intermedia n. sp., all in the M. nitida-complex)

SHIH, Ch-T., 1979. "East-West diversity". ____ Pp. 87-102 in Van der SPOEL & PIERROT- BULTS (eds.). Zoogeography and diversity in plankton. Bunge scient. Publishers, Utrecht.

SHIN, P.K., 1980. Parvipalpus capillaceus (Chevreux)(Amphipoda, Caprellidae) in Galway Bay, West coast of Ireland. ____ Ir. Nat. J. 20, 107.

SHULENBERGER, E., 1980. Factor analyses of a hyperiid amphipod assemblage from the North Pacific central gyre. ____ Mar. Ecol. Progr. Ser. 2, 109-120. (Not seen)

SIMENSTAD, C.A., W.J. KINNEY & B.S. MILLER, 1980. Epibenthic zooplankton assemblages at selected sites along the Strait of Juan de Fuca. ____ NOAA techn. Memo., 79 pp (Citation probably incomplete. Not seen, unfortunately).

SKALSKI, A.W., 1980. (Niphargus leopoliensis Jaworowski, 1893 (Amphipoda) in Poland. ____ Przeglad zool. 24, 97-101.(A new locality and a correction: The N. tatrensis of Skalski 1978 (Przegl. zool. 22) was in reality also N. leopoliensis.

SKALSKI, A.W., 1980. The variability and systematic position of three species of Niphargus from the Caucasus. ____ Crustaceana, Suppl. 6, 38-43. (Descriptions of Niphargus ablaskiri and N. borutzkyi. N. abricossovi is considered to be specifically distinct from N. tatrensis).

SKALSKI, A.W., 1980. Niphargus casimiriensis sp. n., a new species of hypogeous amphipod from Poland (Crustacea: Niphargidae). ____ Acta hydrobiol. 22, 217-227. (From Kazimierz Dolny on the Vistula).

SKET, B., 1979. (The cave fauna in the triangle Cerknica- Postojna-Planina (Slovenia, Yugoslavia), its conservational importance. ____ Varstvo Narave, Ljubljana 12, 45-59 (In Serbokroatian with English summary. Amph. on p. 50).

SKET, B. & T.M. ILIFFE, 1980. Cave fauna of Bermuda. ____ Int. Rev. ges. Hydrobiol. 65, 871-882 (New amphipod taxa found will be described by Karaman and by Sket).

SMOLYAR, R.I., 1979. (Survival and feeding rate of some animals of the Cystoseira biocoenosis under conditions of acute and chronic oil intoxication). ____ Biol. Morya (Kiev) 50, 52-57. (In Russian, not seen. Apherusa bispinosa is apparently most sensitive).

SMOLYAR, R.I. & V. Eh. NOVIKOV, 1979. (Statistical analysis of experimental data on the survival and feeding rate of Gammarus (Marinogammarus)olivii M- Edwards in industrial waste containing oil products). ____ Biol. Morya (Kiev) 50, 58-61. (In Russian, not seen).

SOARES, C.M.A., 1979. (Ecological study of the region of Itamaraca, Pernambuco, Brazil: 3. Amphipoda of the Talitridae and Ampithoidae). ____ Trab. oceanogr. Univ. fed. Pernambuco 14, 94-104 (In Portuguese, not seen).

STAUDE, C. (ed.), 1980. Questions on amphipod taxonomy. A synopsis of the amphipod taxonomy workshop. ____ Mimeogr. Rept, Friday Harbor, 22 pp.

STOCK, J.H., 1980. Découverte, dans le nord-ouest de l'Espagne, d'une deuxième espèce d'Haploginglymus, genre de crustacés amphipodes hypogés endémique de la peninsule ibérique ____ Bull. zool. Mus. A'dam 7, 141-147 (H. lobatus from the province of Santander).

STOCK, J.H., 1980. Regression model evolution as exemplified by the genus Pseudoniphargus (Amphipoda). ____ Bijdr. Dierk. 50, 105-144 (A monographic revision of Pseudoniphargus, with an important general discussion of the idea of "regression model evolution". Besides P. africanus and P. adriaticus, Stock recognizes 11 taxa within the genus, of which seven are named: P. macrotelsonis n.sp. from Algeria, P. unisexualis n.sp. from prov. Guipuzcoa, Spain, P. longispinum n.sp. from prov. Beira Littoral, Portugal, P. mateusorum n.sp. from the Setubal Bight, Portugal, P. brevipedunculatus n.sp. from the Azores, P. longatus n.sp. from prov. Santander, Spain, and P. branchiatus n. sp. from prov. Valencia, Spain.)

STOCK, J.H., 1980. Un Metaniphargus (Amphipoda) nouveau de l'ile Marie-Galante (Antilles). ____ Bull. Mus. natn Hist. nat. Paris (4) 2, 413-419. (M. bullipes n. sp. Marie-Galante is S. of Guadeloupe in the Windward chain of the Antilles).

STOCK, J.H., 1980. A new cave amphipod (Crustacea) from Curacao: Psammogammarus caesicolus n.sp. ____ Bijdr. Dierk. 50, 375-386 (With a discussion of the "Eriopisa-Eriopisella groups", the former consisting of Eriopisa, Psammogammarus, Tunisopisa n.gen. (monotypic, for Eriopisa seurati) and Victoriopisa. The Eriopisella group consists of Eriopisella (type Eriopisa sechellensis, further spp E. capensis, Eriopisella upolu and E. epimera), Madapisella n.gen.(monotypic, for Eriopisella madagascarensis) and Nippopisella n. gen. (monotypic, for Eriopisella nagatai). Eriopisa laakona is transferred to Metaniphargus and E. melitaformis to Dulzura. Stock considers the eriopisids closely related to the hadziids).

STONER, A.W., 1980. Abundance, reproductive seasonality and habitat preferences of amphipod crustaceans in seagrass meadows of Apalachee Bay, Florida. ____ Contr. mar. Sci. 23, 63-77.

STONER, A.W., 1980. The role of seagrass biomass in the organization of benthic macrofaunal assemblages. ____ Bull. mar. Sci. 30, 537-551.

STONER, A.W., 1980. Perception and choice of substratum by epifaunal amphipods associated with seagrasses. ____ Mar. Ecol. Progr. Ser. 3, 105-111.

STONER, A.W. & R.J. LIVINGSTON, 1980. Distributional ecology and food habitats of the banded blenny Paraclinus fasciatus (Clinidae): A resident in a mobile habitat. ____ Mar. Biol. 56, 239-246 (" A highly specialized carnivore, which consumes only a few spp of amphipods and shrimps").

STUCK, K.C., H.M. PERRY & A.G. FISH, 1980. New records of Hyperiidea (Crustacea: Amphipoda) from the North Central Gulf of Mexico, ____ Gulf Res. Repts 6, 359-370 (54 spp. of which 47 are recorded from the Gulf for the first time).

SWANBERG, N.R. & G.R. HARBISON, 1980. The ecology of Collozoum longiforme, sp. nov., a new colonial radiolarian from the equatorial Atlantic Ocean.____ Deep-Sea Res. 27 A, 715-732. (Amphipod symbionts on Table 4 (727), Fig. 6 and pp 728-729. Hyperietta spp. juv. are obligate parasites as juveniles).

TOMILOV, A.A. et al., 1978 (Organisms endemic to Lake Baikal found in the zoobenthos of the reservoirs of the Angara River Cascade) ____ Hydrobiol. Zh. 14 (5), 14-19 (In Russian, not seen).

TSVETKOV, L. & M. MIKHAJLOVA- NAJKOVA, 1979. (Oligomerization of homologous organs and evolution of phreatobiotic crustaceans) ____ God. Sofii Univ. Biol. Fak. 69 (1975-76), 121-136 (In Bulgarian, not seen).

TURK, T.R., M.J. RISK, R.W.M. HIRTLE & R.K. YEO, 1980. Sedimentological and biological changes in the Windsor mud flat, an area of induced siltation. ____ Can. J.Fish. aq. Sci. 37, 1387-1397. (With a.o. data on Corophium volutator).

TZVETKOVA, N.L., 1978. (Seasonal dynamics of the bioenergetic indices of amphipods in the biocoenosis of Sargassum pallidum (Sea of Japan). ____

Naukova Dumka, Kiev, 99-101 (In Russian. Main species treated are Amphithoe shimizuensis, Paradexamine fraudatrix and Palinnotus japonicus)

TZVETKOVA, N.L., 1980. (New species of Photis (Amphipoda, Corophioidea) from the Bering Sea). _____ Akad. Nauk SSSR, Issledov. Fauna. Mor. 25, 101-104 (In Russian. Photis beringiensis n.sp. from the Komandorski islands).

UZNANSKI, R.L. & B.B. NICKOL, 1980. Parasite population regulation: lethal and sublethal effects of Leptorhynchoides thecatus (Acanthocephala: Rhadinorthynchidae) on Hyalella azteca (Amphipoda). ____ J. Parasitol. 66, 115-120. (Very few effects of infection on mortality or growth)

VAN DOLAH, R.F. & E. BIRD, 1980. A comparison of reproductive patterns in epifaunal and infaunal gammaridean amphipods. ____ Est. coast. mar. Sci. 11, 593-604 (Epifaunal species have significantly more, smaller eggs than infaunal species of the same size and geographic region).

VASSALO, L. & D.H. STEELE, 1980. Survival and growth of young Gammarus lawrencianus Bousfield, 1956, on different diets. ____ Crustaceana, Suppl. 6, 118-125.

WARERS, T.F. & J.C. HOKENSTROM, 1980. Annual production and drift of the stream amphipod Gammarus pseudolimnaeus in Valley Creek, Minnesota. ____ Limnol. Oceanogr. 25, 700-710.

WATLING, L. & H. HOLMAN, 1980. New Amphipoda from the Southern Ocean, with partial revisions of the Acanthonotozomatidae and Paramphithoidae. ____ Proc. biol. Soc. Wash. 93, 609-654. (In the Acanthonotozomatidae, Paracanthonotozoma is synonymized with Acanthonotozomella, the new genus Acanthonotozomopsis is erected for Acanthonotozomella pushkini Bushueva, 1978, Panoploea and Cypsiphimedia are synonymized with Iphimedia, and Pariphimediella with Pseudiphimediella (the type species) or Iphimediella (other species). New species: Acanthonotozomella barnardi, Iphimedia magellanica, I. imparilabia, Iphimediella georgei, I.acuticoxa and I.discoveryi (= I. bransfieldi Barnard 1932, in part). Iphimediella intermedia is synonymized with I. cyclogena. In the Paramphithoidae, Pseudepimeria and Subepimeria are synonymized with Epimeria, and Parepimeriella with Parepimeria. New species: Epimeria rimicarinata, Parepimeria minor. A further new species is Parandaniexis dewitti in the Stegocephalidae.

WELTON, J.S., 1979. Life-history and production of the amphipod Gammarus pulex in a Dorset chalk stream. ____ Freshw. Biol. 9, 263-275.

WELTON, J.S. & R.T. CLARKE, 1980. Laboratory studies on the reproduction and growth of the amphipod, Gammarus pulex (L.). ____ J. Anim. Ecol. 49, 581-592.

WILDISH, D.J., 1980. Reproductive bionomics of two sublittoral amphipods in a Bay of Fundy estuary. ____ Int. J. Invert. Repr. 2, 311-320 (Casco bigelowi and Leptocheirus pinguis).

WILLIAMS, J.A., 1979. A semi-lunar rhythm of locomotor activity and moult synchrony in the sand-beach amphipod Talitrus saltator. _____ Pp. 407-414 in E. NAYLOR & R.G. HARTNOLL (Eds.). Cyclic phenomena in marine plants and animals. Pergamon Press, Oxford and N.York.

WILLIAMS, J.A.,1980. The effect of dusk and dawn on the locomotor activity rhythm of Talitrus saltator (Montagu)(Crustacea: Amphipoda). ____ J. exp. mar. Biol. Ecol. 42, 285-297.

WILLIAMS, J.A.,1980. The light-response rhythm and seasonal entrainment of the endogenous circadian locomotor rhythm of Talitrus saltator (Crustacea: Amphipoda). ____ J. mar. biol. Ass. U.K. 60, 773-785.

WILLIAMS, J.A.,1980. Environmental influence on the locomotor activity rhythm of Talitrus saltator(Crustacea: Amphipoda). ____ Mar. Biol. 57, 7-16.

WILLIAMS, R. & D. ROBINS, 1979. Calorific, ash, carbon and nitrogen content in relation to length and dry weight of Parathemisto gaudichaudi (Amphipoda: Hyperiidea) in the north east Atlantic Ocean. ____ Mar. Biol. 52, 247-252.

WRIGHT, D.A., 1979. Calcium regulation in intermolt Gammarus pulex. ____ J. exp. Biol. 83, 131-144.

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WRIGHT, D.A., 1980. Calcium balance in premoult and post-moult Gammarus pulex (Amphipoda).____ Freshw. Biol. 10, 511-580.

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Announcement

J.L. Barnard's handbook, 'The Families and Genera of Marine Gammaridean Amphipoda,' originally issued as U.S. Mational Museum Bulletin 271 in 1969 and out of print for some years, will be reprinted by the Smithsonian Institution, under the auspices of the Waldo L. Schmitt Memorial Fund. Orders for this volume should include payment of $ 15 in U.S. currency (checks or money orders only, please), and should be sent to:

Barnard Reprint
NHB Stop 163
Smithsonian Institution
Washington, DC 20560 U.S.A.

Translation of Japanese abstract

Hiroshi Morino kindly has sent the following translation of the abstract of a Japonese paper.

HARADA, M. & K.S. IWATA, 1980. (Photokinetic response of the eyeless cavernicolous amphipod, Pseudocrangonyx shikokunis) ____ Bull. Akiyoshi- dai Mus. nat. Hist. 15, 63-68 ('The Photokinetic response of the cavernicolous amphipod, Pseudocrangonyx shikokunis Akatsuka et Komai, has been examined experimentally and it is proved that in spite of the lack of eyes the animals respond to light. After adaption to dim light, the locomotory speed was accelerated significantly by bright visible light, but not by infrared rays. The photoreceptive region of this species could not be determined.)