

October 1973

This third issue of the Amphipod Newsletter is the first to appear in off-set. This has become possible through the most welcome help of Zoo-Tax, a "Service Center of Taxonomic Zoology" in Lund, Sweden, and Zoo-Tax is also responsible for the distribution of this issue. Technical problems in connection with these changes have caused some delay in the completion of this issue, but I hope this will be counteracted by increased quality and lowered cost: Zoo-Tax is incredibly cheap.

I promised to suggest a subscription fee in this issue. I now propose a fee of 4. German Mark (BRD) annually (or rather; for 2 issues), preferably to be paid by International Money Order to my address in Tromsø. As far as I can see, this will be sufficient and it will even enable us to send the Newsletter cheaper (or even free) to a few colleagues with very limited budgets. The first subscription will cover Newsletter 2 and 3, and it would be an advantage if many of you could at the same time pay the next subscription, so that I'll have some credit. I am most grateful to those colleagues who have sent me money earlier, and they are of course not expected to pay now. In the next issue I shall give further details of the financial situation; meanwhile I shall be glad to have your comments.

Apart from the usual items I have solicited three other types of contribution for this issue. The first is an essay about methods, in this case in scanning electron microscopy. The second gives a survey of the activities of a group of colleagues, working on Amphipoda; a similar paper on work being done in Lyon has been promised by Dr. Ginet for next issue. The third is a short report from a meeting, and gives some idea of who came together to talk about what. Again, I shall be very glad to hear if you want more contributions of this type, or if not, what else you propose. Unfortunately, I have not got anything yet from physiologists, geneticists or parasitologists, to help balance the Newsletter.

The deadline for contributions to the next Newsletter is 1 May 1974.

Tromsø, October 1973



Wim Vader

Amphipods are, on the whole, good objects for scanning electron microscopy. Sclerotization is in most sufficiently strong to prevent serious distortion in drying. Therefore unsophisticated dehydration and drying methods give good results. Slender appendages such as antennae and posterior pereopods, however, break easily in the course of the coating procedure and in whole mounts they have a tendency to charging if they are not attached to the specimen holder along most of their length. This should be taken into account when mounting specimens. For detailed studies of individual appendages they should preferably be mounted separately.

The greatest difficulty, however, is to obtain clean preparations, permitting detailed studies of integument features. Amphipods are richly provided with integumental glands, the secretions of which are denaturated by alcoholic fixatives and tend to form films covering the integument. These films are very difficult to remove (cf. below). Alcoholic fixatives should therefore be avoided, and sea-water Bouin has also given bad results. As a rule glutaraldehyde, 2 - 5%, or (preferably) formaldehyde 4-10%, give cleaner preparations, but disappointments are frequent, and it is obvious that the mechanisms underlying surface film formation are not properly understood. Specimens preserved in formaldehyde should not be transferred to alcohol afterwards but kept in formaldehyde. In order to prevent loss of calcareous matter from the integument the solution should be kept neutral, so that formation of formic acid cannot take place.

Several methods can be used for cleaning specimens, but it should be understood that they are very far from perfect. It is often useful to wash specimens before and/or after fixation in a tensid solution. This will help to remove extraneous particles from the body surface but it has no or little effect on surface films. Washing in a low-frequency ultrasonic cleaning apparatus is sometimes favourable, but care must be taken so that delicate structures are not damaged. The washing should be carried out in water or in 20% acetone. The effect is very variable but sometimes quite good.

Some recent experiments with potassium hydroxyde solutions have given promising results with respect to removing secreted films. They are, however, too preliminary to be formulated as recommendations for a standard procedure. It is obvious that the strong solutions (10 - 15% hot KOH), often used by entomologists, although effectively removing

films also cause damage to integumental structures. It appears as if 3 - 5% KOH applied at room temperature for some hours may give good results. It is, however, still impossible to give this as a general recommendation, and it appears as if concentrations and immersion times may have to be varied with respect to species and fixation. Thus the method although promising should not be used unless a good supply of material for experiments is available. A perfected potassium hydroxyde cleaning method may bring great advantages because it ought to be applicable also to specimens fixed and stored in alcohol.

With respect to coating a gold-palladium mixture 60/40 has given very satisfactory results.

As a standard method for preparing amphipods for scanning microscopy the following procedure is recommended. Steps given in brackets are optional.

1. (Wash specimens in tensid solution)
2. Fix in 4 - 10% formaldehyde
3. (= 1)
4. (Store in neutralized 2 - 4% formaldehyde)
5. Transfer to water
6. (Clean with potassium hydroxyde solution)
7. Transfer to 20 % acetone
8. (Clean in low-frequency ultrasonic device)
9. Take specimens through a series of acetone solutions 40 - 60 - 80% to pure acetone, 2 - 4 hours in each solution.
10. Dry and mount on specimen holder, or
11. (Take specimens from pure acetone to acetone-amy1 acetate 50/50 for 12 hours and then to pure amy1 acetate for 12-24 hours. Recommended for specimens with thin cuticle)
12. (= 10)
13. Coat with gold - palladium 60/40.

DEUXIÈME COLLOQUE INTERNATIONAL SUR GAMMARUS ET NIPHARGUS.
LYON JUILLET 1973.

A.L.ROUX

Du 9 au 12 juillet 1973 s'est tenu à Lyon-Villeurbanne, dans les locaux de Département de Biologie Animale et Zoologie de l'Université Claude Bernard, le "Deuxième Colloque International sur Gammarus et Niphargus". Ce Colloque fait suite à des réunions séparées des spécialistes de ces deux genres d'Amphipodes, VERONE (Italie) en 1969 pour Niphargus, KARLSRUHE (Allemagne) en 1971 pour Gammarus.

Une trentaine de chercheurs appartenant à 11 nations participèrent au Colloque de Lyon. Toutes les séances furent communes aux spécialistes des deux genres de Gammaridae, à l'exception d'une seule réunion réservée aux problèmes très spécialisés de la systématique de Niphargus (fin de la séance du mercredi matin 11 juillet). Les communications et les discussions correspondantes furent groupés selon les grands thèmes suivants:

- systématique au niveau générique,
- systématique au niveau spécifique et problèmes de la variabilité,
- biogéographie et écologie,
- éthologie.

On trouvera ci-dessous la liste des participants et celle des communications.

A l'issue de ce Colloque, le Dr. M.P.D.MEIJERING proposa que le 3ème Colloque International ait lieu au Laboratoire de Limnologie de l'Institut Max-Planck a SCHLITZ/HESSE (Allemagne). Par suite de l'absence regrettée de spécialistes européens qui n'ont pas eu la possibilité de se rendre à Lyon, il fut également proposé que la réunion de SCHLITZ se tienne en 1975.

LISTE DES PARTICIPANTS

<u>Nom</u>	<u>Ville</u>	<u>Pays</u>
N. ALOUF	Beyrouth	Liban
Cl. BOU	Albi	France
B. BRUN	Marseille	France
Cl. DE BROYER	Bruxelles	Belgique
H.G. DENNERT	Amsterdam	Pays-Bas
J. DUCRUET	Lyon	France
D. DUMAY	Marseille	France
J. GIBERT	Lyon	France
R. GINET	Lyon	France
A.M. GOEDMAKERS	Amsterdam	Pays-Bas
K. JAŹDŹEWSKI	Łódź	Pologne
G.S. KARAMAN	Titograd	Yougoslavie
M. VAN MAREN	Amsterdam	Pays-Bas
J. MATHIEU	Lyon	France
M.P.D. MEIJERING	Schlitz	Allemagne
C. MORAND	Lyon	France
S. PINKSTER	Amsterdam	Pays-Bas
J.L. REYGROBELLET	Lyon	France
C. ROUX	Lyon	France
A.L. ROUX	Lyon	France
G. RYDQVIST	Lund	Suède
E. SELLEM	Dijon	France
A. SKALSKI	Ratusz	Pologne
D.H. STEELE	St. Johns, Nfld	Canada
J.H. STOCK	Amsterdam	Pays-Bas
M.J. TURQUIN	Lyon	France
W. VADER	Tromsø	Norvège
A. VIGNA TAGLIANTI	Rome	Italie

LISTE DES COMMUNICATIONS

- N. ALOUF - "Les Gammarus du Liban".
- N. ALOUF - "Relation entre la paléogéographie et la répartition géographique de Niphargus au Liban".
- Cl. BOU - "Technique de récolte des amphipodes dans les sous-écoulements des rivières".
- B. BRUN - "La différenciation des populations de G. insensibilis le long de la côte française de la Méditerranée".
- H.G. DENNERT - "Competitive exclusion between G. pulex and G. duebeni".
- J. DUCRUET - Film "La reconnaissance sexuelle chez les Gammarus du groupe pulex".
- J. DUCRUET - "Action de l'ecdystérone sur la mue des Crustacés Amphipodes femelles Gammarus pulex et G. fossarum. Premiers résultats.
- D. DUMAY - "Régime alimentaire de Gammarus crinicornis et G. subtypicus. Résultats préliminaires.
- J. GIBERT - "Essai de systématique biochimique chez Niphargus".
- A.M. GOEDMAKERS - "Hybridization between G. gauthieri and G. wautieri".
- W. HAMMOUD/J. DUCRUET - "Recherche d'une substance attractive chez les Gammarus du groupe pulex".
- K. JAŹDŹEWSKI - "Gammarus and Chaetogammarus in Polish waters".
- G.S. KARAMAN - "Echinogammarus en Italie et en Yougoslavie".
- M.P.D. MEIJERING - "Neue Anlagen für experimentelle Untersuchungen an Fließwasser-Tieren".
- G. MORAND - "Comparaison biométrique de deux populations de Niphargus longicaudatus".
- S. PINKSTER - "Migration of two sympatric species of Gammarus in a French estuary".
- G. RYDQVIST/E. DAHL - "Chemosensory hairs of Talitrid amphipods".
- A. SKALSKI - "La variabilité de Niphargus leopoliensis en Pologne".
- D.H. STEELE - "Size and cycles of some Canadian gammarids".
- J.H. STOCK - "Les unités de niveau générique dans la taxonomie des Gammaridés".
- M.J. TURQUIN - Film "Niphargus, un animal cavernicole".
- A. VIGNA - TAGLIANTI " Les Amphipodes souterrains de Turquie".
- Réunion du groupe de Vérone (Niphargus).

WORK ON AMPHIPODS CARRIED OUT AT THE INSTITUTE OF ANIMAL TAXONOMY,
AMSTERDAM

Systematics: SJOUK PINKSTER

1. Revision of the Ponto Caspian genera of fresh and brackish water gammarids. This revision is mainly based on the study of rich Museum collections, including type material. Prof. Dr. J.H. Stock
2. Revision of the Gammarus pulex-group based on material from circummediterranean countries. Part of this material is collected during systematic sampling in these areas. Furthermore rich collections could be obtained from other Musea in western Europe. The only countries from which material is lacking at the moment are Egypt and Lybia. Dr. S. Pinkster & Drs. A.M.C. Goedmakers.
3. Hybridization experiments between various morphologically different populations belonging to the Gammarus pulex-group. In 1971 and 1972 cross-breed experiments have been done between many populations, all called G. pulex from southern France. This resulted in the description of a new species, G. monspeliensis. Other experiments pointed out that many morphologically very different populations from many localities in Europe all belonged to Gammarus fossarum Koch. In a series of experiments which were done in cooperation with Dr. A.L. Roux it was proved that G. wautieri Roux from France and G. gauthieri from Spain indeed are good species. Hybridization experiments have been planned between populations from Poland, The Netherlands and many parts of France.

Ecology:

4. Upstream and downstream migration patterns of estuarine gammarids with special accent on the relation to physico-chemical factors and competition between sympatric species. During some years fieldwork has been done in an estuary in Brittany (Bretagne), France. Special attention has been given to the relation between temperature, salinity and light upon migration patterns of a mixed population of Gammarus zaddachi and Gammarus chevreuxi. At the moment laboratory experiments are carried out in an attempt to explain the data obtained in the field. Models have been developed to simulate the situation found in estuaries. The project is carried out by B.Sc. students working for their doctoral degree under supervision of Prof. Dr. J.H. Stock, Dr. S. Pinkster and Drs. H.G. Dennert.

5. Distribution and ecology of Gammarus duebeni and Gammarus duebeni celticus in West and North-west Europe and experimental approach of the physico-chemical factors influencing this distribution. In various experiments the adaptation of both subspecies of Gammarus duebeni to different environmental factors is investigated. The competition between both subspecies and Gammarus pulex is studied. The project is mainly worked out by Drs. H.G. Dennert, assisted in smaller details by B.Sc. students.
6. Range extension of the alien amphipod Gammarus tigrinus in the Netherlands and its competition to local amphipod species. Every year extensive sampling is done in the whole country. In the laboratory many experiments are carried out under many different conditions to find out what made this species so strong in competition with local inhabitants. Dr. S. Pinkster, Prof. Dr. J.H. Stock and a varying number of students are working on the subject.
7. Migration of gammarids in the limnic parts of the river la Slack in Northern France. In the upper parts of this river three species coexist: Gammarus fossarum, Gammarus pulex and Echinogammarus berilloni. During a period of three years the yearly migration pattern and the influence of many factors like light-intensity, streamvelocity, and temperature will be studied. Drs. A.M.C. Goedmakers.
8. Distribution and ecology of Chaetogammarus marinus and Eulimnogammarus obtusatus. The biology of both species will be studied in relation to geographical position, time of the year, tidal changes, salinity and other factors. Investigations will be executed to find some explanation for the difference in vertical distribution of the two species observed in the field. Special attention will be paid to substrate-preference and other competitive factors. Depending from the results obtained in the field, laboratory experiments will be carried out concerning S-tolerance, substrate choice, influence of periodical desiccation and immersion in seawater. Drs. M.J. van Maren.

THE AMPHIPOD COLLECTION OF THE ZOOLOGICAL MUSEUM, COPENHAGEN

Everyone working taxonomically with amphipods knows the name of Knud Stephensen, who was the head of the Crustacea Department of the Copenhagen Museum from 1910 to 1947 and published 130 papers on crustaceans, more than half of which were on amphipods (Vidsk. Meddr dansk naturh. Foren. 110, 1948: VIII-XV).

It is probably less well known that throughout his 37 years of service in the museum he devoted much time and effort to building up a reference collection of amphipods which certainly still exceeds any other in number of species represented. This was done partly by obtaining permission to retain specimens from the often large collections of amphipods he was asked to work up, and partly through an extensive exchange with a great many of the contemporary amphipod specialists.

Apart from a few minor studies, Stephensen never got to work on the rich material of tropical amphipods brought back by Dr. Th. Mortensen from many parts of the Pacific and South African waters. However, practically all of these vast collections, and other material of unidentified amphipods in the museum, were sorted into families or even genera.

The need for systematic revisions of many genera and families of amphipods is obvious, but fortunately several specialists are engaged in this useful work. Some revisors mainly base their work on literature, while others include a study of relevant species and/or genera.

The intention of this note is to direct the attention of the latter type of revisor to the availability in the Copenhagen Museum of a large and useful material of identified and unidentified (but sorted) amphipods. In my opinion, a major- if not the primary- objective of museum collections is to have them utilized for scientific purpose, and I shall be very happy to respond to any application for loans of amphipods.

Torben Wolff

Dept. of Crustacea

LAST MINUTE ADDITIONS

NEWS FROM COLLEAGUES

K. SHYAMASUNDARI: I am at present mainly working on the anatomy and histochemistry of talitrid amphipods with special reference to the digestive, nervous and reproductive systems. Further research interests are correlative on neuroendocrine system and reproductive system.

BIBLIOGRAPHY

JANKOWSKII, A.V. & S.V. VASSILENKO, 1972. (Commensological sketches. 5. Caprella astericola sp. n. (Amphipoda, Caprellidea) from Asterias amurensis. _____ Zool. Zh. 52:947-951 (In Russian with English summary).

VASSILENKO, S.V., 1972. (Caprellidae (Amphipoda) from the Antarctic and Subantarctic.) _____ Issled. Faun. Morei 11 (19): 345-357. (In Russian. Redescriptions and figures of Dodecas elongata,

(Dr. Vassilenko kindly sent me a further 1972 paper, a monograph on Caprogammarus gurjanovae by Kudrjaschov and Vassilenko. I have, however not yet had the time to unravel the Russian. Titles of the paper and the periodical. W.V.)

NEWS FROM COLLEAGUES

H.G. ANDRES: I work about littoral amphipods from the cold water streams of South America and South Africa.

E.L. BOUSFIELD: During January, my wife and I spent a delightful 15-day holiday period in the Hawaiian islands. We were taken on an I.B.P. collecting tour on four of the larger islands (Kauai, Oahu, Maui, and Hawaii) by officers of the Bishop Museum (especially by entomologist Frank Howarth), and managed to increase the number of known species of terrestrial amphipods (Talitridae) from five to twenty-five, of which 17 are apparently new to science. Some species of orchestiids have apparently invaded fresh-water streams (in absence of Hyaellidae, etc.), others live only in tree moss, leaf axils, and one blind white species is apparently restricted to lava tubes on the "ancient" island of Kauai. The common leaf litter species on all islands of the chain is the ubiquitous, introduced Talitroides topitotum Burt which has fortunately not entirely replaced the native species in that habitat, especially at higher elevations. The oldest islands have welldeveloped endemic faunas whereas the most recent island (Hawaii) apparently has no endemic terrestrial amphipods. It was a novel experience for a marine biologist to be collecting amphipods by means of a drop-sheet and aspirator, but nonetheless it is a very effective and salutary means of sampling this very rich Hawaiian fauna that still offers major systematic challenges despite 100 years of environmental and ecological alteration by mankind.

BERNARD BRUN: J'ai entamé avec Messieurs GUY BRUN et ANTOINE CHAMPEAU un programme commun de recherches sur la génétique et la dynamique des populations de Gammarus insensibilis et G. aequicauda; nous nous intéressons également aux problèmes de morphogénèse soulevés par l'étude des variations biométriques.

Parallelement, Mlle DANIELE DUMAY a entamé des recherches relatives aux problèmes de la spéciations chez G. crinicornis et G. subtypicus (étude comparative de la variabilité et écologie comparée).

J.R. CHESS: I have not followed up my earlier observations of commensal amphipods, but I do hope to have an opportunity in the near future. I have data on the occurrence of a new species of Najna which burrows into and inhabits chambers in the brown alga Lessoniopsis littoralis.

BOB COOPER: As I mentioned earlier the next section I will be tackling is the Lysianassidae followed by the Oedicerotidae. I would be pleased to hear from anyone working on oedicerotid problems. In the paper I mentioned earlier containing Amphipoda from Stewart Island a new genus and species is described, allied to Methalimedon, but with a very short peduncle to the third uropod.

DAVID CULVER: My research interests that are connected with amphipods center around analysis of species interactions and community structure of Appalachian cave stream communities. Together, amphipods and isopods form the bulk of these communities. My research up to very recently has concentrated on competitive interactions between the isopods and amphipods (see Ecology 54: 102-110). At present I am working on the impact of predation by the salamander Gyrinophilus porphyriticus on the amphipod and isopod populations.

ANAMARIA ESCOFET: I am mainly interested in littoral marine amphipods; I am working hard on Talitroidea from the Atlantic coast between 34° and 42° S, in order to get the Ph. D. I have also in preparation a key to identify the common amphipods in the Mar del Plata area, and a paper about amphipods of sandy beaches between 34° and 42° S.

TONY FINCHAM: My work at the moment is mainly concerned with the rhythmic swimming behaviour of intertidal amphipods and isopods. For this I am using photo-electric equipment which gives a continuous printout of activity. Together with Bob Cooper I am preparing a joint paper on new species of amphipods. I am also plotting the distribution of amphipods from sandy shores around the coasts of New Zealand.

I. GLEDHILL: My amphipod work is centered around subterranean species, especially Niphargus and Crangonyx in Britain.

CHARLES GRIFFITHS: The first of my series of papers on the Amphipoda of southern Africa is out. The second and third parts are already in press and should appear about the end of the year, while a more extensive fourth paper, which includes descriptions of some 13 new species, is being typed at present. After this I hope to work on a fully illustrated key to the Amphipoda of Africa South of 20° S, in which I hope to illustrate many of K.H. Barnard's species for which illustrations were never published.

JOHN R. HOLSINGER: My recent amphipod research projects include: 1. Completion of a paper with Dr. Milan Straskraba on a new genus and two new species of subterranean Gammaridae from South Africa. 2. Completion of a lengthy manuscript on the systematics of the subterranean amphipod genus Stygobromus (Gammaridae). This is I of a part series designed to complete the revision of the genus in North America. 3. Completion of a paper describing two new species of Mexiweckelia (Gammaridae, Hadzia-group) from Mexico and Texas. 4. Routine identification and curatorial work on the freshwater amphipod collections on the U.S. National Museum (Smithsonian Institution); primarily collections of Gammarus and Crangonyx. Please note that I will be returning to my permanent job at Old Dominion University in early July 1973 (Address see Amph. Newsl. 2.)

JEAN JUST: I am primarily working with arctic and subarctic gammaridean amphipods (taxonomy, biogeography, evolution, biology). My own collecting activities have so far been confined to Greenland. I have just completed a manuscript on Menigratopsis Dahl and I am presently working on a revision of Acanthonotozoma Boeck (see elsewhere in this Newsletter). I am further working on a manuscript dealing with the amphipod fauna of the Thule area, NW Greenland. This will be followed by a similar work on a very large epifauna material from Kap Farvel, S. Greenland. Finally I have

recently completed a manuscript on the amberfossilized genus Palaeogammarus Zaddach.

KENNETH A. KIMBALL: I am a graduate student working on the hyperiid and pelagic gammarid fauna of the Caribbean Sea for my Master's degree. I have obtained my specimens from some of Dr. H.B. Owre's zooplankton samples, which were collected from many areas in the Caribbean. The samples were taken with openingclosing nets at all depths; some samples were taken at a dept of several thousand metres (see Owre & Foyo, 1972, Bull. mar. Sci. 22: 483-521). My work is mainly concerned with which species are present and their horizontal and vertical distribution.

COLIN LEVINGS: At present I am involved in an ecological study of Anisogammarus confervicolus at a disturbed estuary at the end of a fjord here in British Columbia. Industry and shifting sediment created by river diversion are related to differences in biomass and life history. Since the amphipod has been shown to be of importance in the diet of young salmon, there is a great deal of interest in the effects of industry on the amphipod.

JAMES LOWRY: Later this year I have a paper coming out in the Trans. am. micr. Soc. on a new species of Biancolina from the Sargasso Sea.

JACQUES MATHIEU: Acclimatation thermique et métabolisme respiratoire de Niphargus.

ALAN MYERS: I am interested, in the main, in the biology, particularly taxonomy but also behaviour and ecology of amphipods of the families Aoridae, Isaeidae, Ischyroceridae and Corophiidae of world-wide origin. In addition to a study of the above families in relation to the handbook of Mediterranean Amphipoda, I am presently working on a revision of the genus Lembos of the Mediterranean, and of the Lembos species of East Africa. I am also studying the biology of Amphitholina cuniculus in the West of Ireland.

J.L. REYGROBELLET: Cycles sexuels, histologie des gonades, caryotypes de Niphargus.

HERMAN O. SANDERS: My interest are in invertebrate toxicology and amphipod culture.

HIROSHI TAMURA: I am presently engaged in the population dynamics and life histories of the family Talitridae, with special reference to the genus Orchestia.

NINA TZVETKOVA: My monograph on Gammarus and Anisogammarus species from the North and Far-Eastern Seas of the USSR (including the Baltic Sea) is now in press and may be published in 1974. The MS contains keys, descriptions and illustrations of all Russian marine and brackish-water species, with the redescription of some species from type material, together with data on ecology and geographical distribution.

ADRIAN M. WENNER: My present interest in amphipods is a study of the natural history of Orchestia traskiana from a population biology approach. It appears as if there is some adaptive radiation on one of our offshore islands even though there seems to be little or no morphological differences in the different populations. Some of the populations live in fresh water, some are terrestrial, and others live in the marine habitat.

LIST OF AMPHIPOD WORKERS (FIRST SUPPLEMENT)

When I made up the first list of addresses (in A.N. 2) I accepted all addresses of amphipod workers sent to me, but asked everybody to write and tell whether they were interested in receiving further issues and willing to pay for them. Drs. Dick (36), Gras (57) and Schornikow (158) wrote to tell that they are not at present working with amphipods, and many of you registered their interest. Unfortunately, though perhaps predictably, many of you (The numbers 2,6,8,9,18,19,20,21,24,25, 32,34,41,51,54,60,61,64,65,66,69,70,81,85,92,96,107,116,120,126,128, 129,131,133,138,139,140,142,143,166,167,168,176,169,182,184,187,188, 195,197, and 198 of the list in A.N.2) did not respond at all, and these colleagues will not receive further issues of the Newsletter, unless I do hear of their positive interest.

For the same reason, I must ask you not to give me names of colleagues who might be interested in receiving the Newsletter, but to contact these colleagues directly and ask them to write to me if they want the Newsletter.

A number of mistakes has crept into the first list, while some of us also have changed address.

Wim Veder

Correction and Changes of address

10. B. Bou; New address: La Forestole 1 Cambon
81000 Albi
France
14. B. Brun; Correct address: Laboratoire de Biologie Animale
Université de Provence
Centre de Saint-Jérôme
13013 Marseille
France
22. N. Coineau; Correct address: Laboratoire Arago
66650 Banyuls-sur-Mer (P.-O)
France
50. Richard, not Robert Fox
67. J.R. Holsinger returned to his permanent address.
86. J. Just; New postal address: Universitetets Zoologiske Museet
Universitetsparken 15,
DK-2100 København Ø
Danmark
93. K.A. Kimball, not A.K.
111. J.A. Mathias, new address: Universiti Sains Malaysia
School of Biological Sciences
Penang,
Malaysia
153. B. Rygg, new address: N.I.V.A.
Gaustadalleen 25,
Blindern, Oslo 3.
162. Chang-Tai Shih, not Chi Tai Shih
163. correct name: Miss K. Shyamasundari
Additional addresses.
199. N.J. Alouf
Faculte des Sciences
Université libanaise
Hadath- Beyrouth 6160

208. S.D. Levings
Fisheries Research Board of Canada
Pacific Environment Institute
4160 Marine Drive
West Vancouver B.C.
Canada
209. J. Mathieu
and
210. J.L. Reygrobellet
both:
Université Claude Bernard
Département de Biologie Animale et Zoologie
Biologie Souterraine
43, Bd. du 11 November 1918
F. 69 Villeurbanne
France
211. H. Tamura
Department of Biology
Ibaraki University
Mito 310
Japan
212. A.M. Wenner
University of California, Santa Barbara
Department of Biological Sciences
Santa Barbara, Cal. 93106
U.S.A.
213. P. Lambert
Marine Biology Division Library
British Columbia Provincial Museum
Victoria, B.C.
Canada
214. Hisao Inoue
Yasato Senior High School
Yasato-machi, Niihari-gun
Ibaraki-ken, Japan
- 215/216 John Chapman
School of Natural Science
California State University, San Francisco
1600 Holloway Avenue
San Francisco Cal. 94132
U.S.A.

on how to collect, conserve and dissect them, approximately 200 species are dealt with in the keys, which for many genera cover the whole Atlantic coast of North America; 125 of these are then fully described and illustrated. The plates have been brought together in the back of the book, and arrows point out features of special importance for identification. Especially valuable is also the quite specific information about biotope, ecology and life cycle of the treated species. Altogether, this is a most valuable monograph and it will indispensable for all amphipodologists working in the northern Atlantic.

Seven new species are described in the Handbook: Amphiporeia gigantea, Bathyporeia parkeri, Colomastix halichondriae, Proboloides holmesi, Rudilemboides naglei, and Synchelidium americanum, and two new genera: Psammonyx (for Anonyx nobilis), and Pseudunciola (for Unciola obliquua). In the reviewer's opinion, it would have been an advantage if a formal description of these taxa had been published separately in advance: no space could apparently be found now for comparison with extralimital congeneric species, more complete illustrations, and designation of type specimens and type localities. All these things are admittedly of little or no interest for most users of this handbook, but they are most important to amphipod specialists.

Likewise, Dr. Bousfield has used this opportunity to introduce some major changes at the family level, notable a division of the Gammaridae into three families, and a substantial emendation of the Aoridae, Photidae and Corophiidae. Again, space did not permit an extensive argumentation of these changes.

The book is nicely produced, with very few misprints, but there is an unexpectedly high number of minor factual errors in the spelling of scientific names and author's names, European distribution data, and inclusion of European taxa in the keys. An amusing example on p. 188 is Microprotopus longimanus (du Croisic), not the first time the locality indications on the figures in Chevreux & Fage (1925) have led to this type of misunderstanding. All three Marinogammarus-species (pp. 58-59) were in fact published in 1938 and in the genus Gammarus, and the genus Idunella is not of Chevreux, but of Sars. The key to "North Atlantic species of Melita" mentions M. palmata as "European", but omits M. gladiosa, M. obtusata, M. pellucida and M. reidi, and neither the "key to American Atlantic species of Metopa", nor the otherwise very useful list of "Gammaridean amphipods recorded or probably occurring in the New England shelf region" on pp. 283-290, make any mention of Metopa hirsutimana Blake, 1929, from Maine (or of M. groenlandica, with which Gurjanova in 1951 has synonymized this species),

COLOMASTIX

I am currently describing a new species of Colomastix, which is closely related to C. pusilla. In reviewing the literature I have come across at last three descriptions of C. pusilla from European waters which differ greatly from one another. Barnard also has reported what he believed to be C. pusilla from the Pacific Ocean. If you happen to have specimens of Colomastix pusilla, would it be possible for me to borrow them for comparison with my material, which comes from sponges in the Florida Keys (U.S.A.)?

RICHARD W. HEARD

EFFECTS OF SUSPENDED SEDIMENTS

Mr. R. Shillaker of this laboratory is starting research work for his Ph.D. at Millport on the effect of suspended sediment on Corophium bonelli and Lembos websteri. He would appreciate any information pertinent to this topic or any more general information on distribution, zonation and ecology of these species.

P.G. MOORE

LAST MINUTE ADDITIONS

NEWS FROM COLLEAGUES

JOHN CHAPMAN: I am at present working on introduced estuarine amphipods of the Pacific coast of the U.S. and would be very interested in any information you might have.

HISAO INOUE: I have recently started work on the geographical distribution of the Talitridae in the Tohoku district (northern part of mainland), and on the morphology of terrestrial forms, especially Orchestia, in Ibaraki prefecture.

L.R. McCLOSKEY: Presently I have a student interested in pursuing a project of mine, namely the association of amphipods with marine sponges. In the Puget Sound area there seem to be a number of amphipods which may be obligate associates of certain sponges. The amphipods most often live in the galleries and exhalant canals of the host sponge (Note change of address.) p. 32

BIBLIOGRAPHY I

The bibliography has this time been split up in three parts, as this enabled me to divide the work more evenly over the period; I do not hope this will be a serious drawback. I am very much indebted to Claude de Broyer (Bruxelles) and Jan Stock (Amsterdam) for their efforts to get this bibliography as up-to-date as possible. Of the books announced in Newsletter 2, that of Dr. Bousfield is reviewed in this issue; Dr. Holsinger's book has not yet been available in Europe, while I do not know if Dr. Jankowski's work has been published.

Many people have expressed interest in learning about the existence and whereabouts of translations of amphipod papers in foreign languages (especially Russian) into English, and the possibility and cost of procuring partial or complete copies from these works. I shall of course be glad to be able to give such information in the Newsletter, but am dependent upon your help.

During the Symposium in Lyon it was proposed to include "papers in press" in this bibliography, and this has been done to a limited extent in this issue. Comments appreciated.

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of animals in Korea. Seoul 1972 (In Korean with English summary.
13 species of Hyperiidæ from pelagic samples, with figs of
Vibilia viatrix, Hyperia latissima, Parathemisto japonica, Hyperio-
oides latipes, Parascelus typhoides, and Simorhynchotes antennarius

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_____ Cah. ORSTOM, Ser. Hydrobiol. 6: 247-260. (Italian
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Paracalliope novaecaledoniae and Orchestia starmuehlneri, and
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LAST MINUTE NEWS

Lawrence R. McCloskey (nr. 115) has moved to:
Department of Biology
Walla Walla College, Washington 99324,
College Place
U.S.A.

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reporting on 80 species, of which 29 were described as new. To
day the collection holds 59 species, among which the types of
9 valid species described by Heller, and of a new genus and
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The paper contains further a thorough revision of some Mediterra-
nean Hyale and Parhyale species).
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- _____, 1972. (A new family, new genus and species of caprellids (Amphipoda, Caprellidea) from the North Pacific). _____ *Ibit.* 52: 237-250. (In Russian, .. Paracercopidae n. fam. Further new taxa: *Cercops dentatus*, *C. draconi*, *Pseudocercops*, *P. kussakini*, *Paracercops*, *P. setifer.*)
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- BALCESCU, D., 1972. Sur deux nouvelles espèces de Grégarines parasites chez l'Amphipode Synurella ambulans (Fr. Müller) de Roumanie. _____ Rev. roum. Biol. (Zool.) 17: 289-295 (Cephaloidophora synurellae and C. margaretae n. spp.)
- BARNARD, J.L., 1972. A review of the family Synopiidae (= Tironidae), mainly distributed in the deep sea. _____ Smithson. Contr. Zool. 124: 1-94. (An important paper. Keys to all genera and species are provided, and relationships within the family explore by different methods. Three new genera are diagnosed: Ileraustroe (type species: Austrosyrrhoe ilergetes, one further species: Syrrhoites torpens), Latacunga (for L. latacunga n.sp. (type) and L. comanita n.sp.), and Priscosyrrhoe (for Austrosyrrhoe priscis).
- BARNARD, J.L., 1972. The marine fauna of New Zealand: algae-living littoral Gammaridea (Crustacea Amphipoda). _____ N.Z. oceanogr. Inst. Mem. 62: 1-216. (One of the author's rapidly growing list of major regional monographs. In it 31 new species are described and many others redescribed and figured. Many family concepts are revised. In the Talitroidea Barnard now recognizes the following families: Talitridae, with the subfamilies Talitrinae, Hyalinae and Hyaellinae; Ceinidae with the subfamilies Ceininae (Ceina, Taihape n.g. and Waitomo n.g.) and Chiltoniinae, Dogielinotidae (Dogielinotus, Haustorioides), Eophliantidae (Eophliantis, Bircenna, Ceinina, Cylindryllioides, Lignophliantis and Wandelia), Kuriidae (Kuria), Najnidae (Najna), and Phliantidae (Phlias, Heterophlias, Iphinotus, Iphiplateia, Palinnotus, Pariphinotus, Pereionotus, Plioplateia and Quasimodia, possibly also Temnophlias). The Prophliantinae (Prophlias and Haustoriopsis) become a subfamily of the Dexaminidae, Biancolina is made the type of the monotypic Biancolinidae, while Amphitholina is returned to the Ampithoidae. The Calliopiidae and Pontogeneiidae are amalgamated with the Eusiridae and both Aoridae and Photidae with the Isaeidae, while the Thaumatelsoninae are subordinated to the Stenothoidae, subsequent to the discovery of the intermediate genus, Raumahara. A new family, Nihotungidae, is based on the peculiar new genus, Nihotunga.
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- BOUSFIELD, E.L., 1973. Shallow-water gammaridean Amphipoda of New England. _____ Cornell University Press, Ithaca and London, XII + 312 pp.
- CAZAUX, C. & P.J. LABOURG, 1973. Contribution à l'étude de la faune marine de la région d'Arcachon. _____ Bull. Soc. linn. Bordeaux 3: 133-143 . Notes . . the presence of Corophium multisetosum in S.W. France.
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- TZVETKOVA, N.L., 1973. Gammarus setosus Dementieva, 1931 (Crustacea: Amphipoda): proposed validation under the plenary powers. _____ Bull. zool. Nomencl. 30: 47-48 (Published July 1973. The proposal also requests the suppression of the name spetsbergensis Vosseler, 1889 (Arch. Naturg. 55: 158), as published in the binomen Gammarus spetsbergensis, a senior synonym of G. setosus.)
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OPINION 992, 1973. Gammarus aequicauda

(Martynov, 1931)(Crustacea, Amphipoda) validated under the plenary powers. _____ Bull. zool. Nomencl. 30: 15-16 (Gammarus aequicauda is placed on the Official List, while Gammarus plumicornis Costa, 1853, and G. tunetanus Simon, 1885. are suppressed).

ADDENDA

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