This issue of the Amphipod Newsletter is built along the same lines as A.N. 3, and is again printed and distributed by Zoo-Tax in Lund. As promised, Dr. Ginet gives a survey of the activities of the "biologie- souterraine" group at the University of Lyon; this is only one of 2 groups working there and I hope Dr. Roux will follow up in the next Newsletter. For A.N. 5 we have also been promised a paper on investigation carried out in Paris and Gif-sur-Yvette by Dr. Charniaux-Cotton and her group. Dr. Meyering has kindly contributed a preview of the next Gammarus and Niphargus-symposium, in 1975 in Schlitz, BRD, and Dr. Gruner has followed up Torben Wolff's good example with a note on the amphipod collections in the Berlin museum. The"essay about methods" has been spontaneously contributed by Jerry Barnard, and will, I hope, give rise to lively discussions, both in A.N. and elsewhere, about the most efficient way to provide a complete Gammaridean Index and bibliography, about ways and means of streamlining our taxonomic efforts and output, and on how to deal most efficiently with the flood of amphipods to be identified that flows our way.

Judging from your reactions, the Amphipod Newsletter clearly fills a need and I get many letters asking for assistance in several ways (Copies of reprints, references to original descriptions, help in specific taxonomic or biological problems); in fact I get considerably more of this type than I get unsolicited letters assisting the production of the Newsletter with references, reprints or other information. I try to respond to these letters as constructively as I can, often by referring to colleagues, but I must once more urge you to help me by providing information as well as asking for it. This would make production of the Newsletter much less time-consuming and much more rewarding.

The financial situation is somewhat ambivalent. This is in part my own fault, as I failed, in A.N. 3, to write "the equivalent of D.M. 4", and "International Postal Money Order". This had the consequences that many colleagues have paid with cheques, and deduced the considerable bank provision from the subscription fee. Here in Tromsø I then had to pay a further provision. A possible solution for this problem may be to channel all contributions from the U.S.A. and Canada, and maybe also those from Japan, and from Australia- New Zealand, via regional "collectors", who then sent the money to me. In this way, we may be able to save some money, which now goes to provisions. Still more complicated is the situation in the USSR and other eastern European countries, as our subscribers there have no possibility to pay for the Newsletter in western valuta. We are trying to work a way out of the

problem, and your comments will be greatly appreciated. In the meantime, the Newsletter will be sent free to all colleagues concerned.

Another problem is that less than 50 of the subscribers hitherto have paid and this is much less than I calculated with in my optimism. Fortunately several of you have paid much more than asked for, and this has saved the situation for the time being, but I have still a too large personal financial interest in the Newsletter, and we have no way yet to relieve Tromsø Museum from much of the typing etc. involved, as ultimately of course we must.

The deadline for the next Newsletter is 1. december 1974.

Tromsø june 1974

Wim Vader

Wim Vader

Coming Symposium

The 3d International Colloquium on Gammarus and Niphargus will take place in the autumn of 1975 in the Limnologische Fluszstation des Max-Planck-Instituts für Limnologie in Schlitz (Federal Republic of Germany) and I extend a warm invitation to all interested colleagues. Schlitz lies near Fulda (NE of Frankfurt) in a central position for all European participants.

In April 1974 the first circular letter about this conference was sent to all those who were known to be interested. If you did not receive this circular but wish to be placed on the mailing list, please let me know this as soon as possible. In one of the next editions of the Amphipod Newsletter there will be details of the data of the colloquium and an outline programme.

I should like to draw the attention of all those who are interested in Niphargus to the Meeting of Groundwater Ecologists in Schlitz, which will be organized by Dr. S. Husmann. This meeting will party be in conjunction with and partly follow the 3d International Colloquium on Gammarus and Niphargus.

Meertinus MEYERING

AMPHIPOD COLLECTIONS

The note by Torben Wolff in A.N. 3 has met with general and enthousiastic approval, and several colleagues have asked for further such "policy statements" by the curators of the great amphipod collections. Some information about the Royal Scottish Museum has already been furnished by Sanderson in the column "News from Colleagues" in A.N. 2, and in this issue Dr. Gruner has given us a survey of the amphipod collections in Berlin. I hope his example will be followed by many, especially by those in sharge of the classical amphipod collections.

In this connection I should like to quote from a letter of Diana Laubitz: "I feel that Torben Wolff should be praised for his attitude regarding loans.I would like to suggest that similar policy statements for other Museums and similar institutions would be useful to all of us. Can we solicit such information through the pages of the Newsletter ? I suggest that those responsible for major museums, or for institutions housing major or particularly interesting crustacean collections, could be requested to give information on their loan policy, particularly regarding type material, and on any especially important collections." I hope you take up the challenge.

Wim Vader

The Amphipod collection of the Zoological Museum, Berlin

The intention of this note is to continue the information about the major amphipod collections. (cf. Torben Wolff, Amphipod Newsletter 3: 8-9).

It is probably well known that the late Adolf Schellenberg was the curator of the Crustacean Department of the Berlin Museum from 1918 to 1952. During this period he published more than 80 papers on amphipods, including some important reports on various expeditions (see bibliography in Mitt. zool. Mus. Berlin 31: 5-10). The type material of the species described by Schellenberg is generally in the Berlin Museum. Schellenberg was also an excellent administrator of the collections. The amphipods stored in this museum are almost all determined to species and perfectly registered.

The collection contains samples from all over the world. The most important parts are: European freshwater species, especially Niphargus and its allies, big collections of amphipod from Lake Baikal collected by Dybowski, the material of the Deutsche Tiefsee-Expedition ("Valdivia") and of the Deutsche Südpolar-Expedition ("Gauss").

Hans-Eckhard GRUNER

Department of Crustacea

TRAVAUX de RECHERCHE concernant les AMPHIPODES (troglobies du genre Niphargus) conduits par le LABORATOIRE de BIOLOGIE SOUTERRAINE

(Université Claude-Bernard LYON-I,
43, boulevard du Onze-Novembre-1918
F 69621 VILLEURBANNE - France)

On trouvera dans les listes bibliographiques des "Amphipods Newsletter" les titres des publications sur ce sujet, faites par les membres de cette Equipe (5 enseignants-chercheurs de l'Université travaillent à temps partiel sur les Amphipodes cavernicoles).

On peut regrouper ces travaux par sujets principaux de la manière suivante; ils concernent essentiellement le genre Niphargus, considéré comme type biologique des cavernicoles aquatiques.

A - TRAVAUX de TERRAIN:
Biogéographie régionale (Sud-Est français, Liban) et écologie générale (milieu souterrain karstique et phreatique; sources).

B - TRAVAUX de LABORATOIRE:
- Biochimie; hémolymphe, pigmentation;
- Nutrition artificielle, controlée en composition, quantité et sur le plan chronologique;
- Métabolisme respiratoire; acclimatation thermique;
- Anatomie générale;
- Cytologie et histologie sexuelle; fonctionnement des gonades;
- Systématique spécifique et sous-spécifique; formes régionales.

C - Le "deuxième colloque international sur les genres Niphargus et Gammarus" a été organisé a Lyon, conjointement avec le Dr. A.L. ROUX, du 9 au 12 juillet 1973; il a réuni 28 participants appartenant à 11 nations différentes.
On en trouvera par ailleurs dans ce même fascicule un compte-rendu succinct.

Les grandes lignes des recherches énumérées ci-dessus peuvent etre ainsi résumées (résumés écrits par les chercheurs, énumérés en ordre alphabétique):

N.J. ALOUF, Maitre-Assistant (Université de Beyrouth, Liban):
Biogéographie, systématique et écologie générale des Amphipodes épigés (Gammarus) et hypogés (Niphargus)du Liban.

Mme Janine GIBERT, Assistante:

Biochimie et physiologie de Niphargus virei:

Mes travaux concernant les Amphipodes souterrains se subdivisent actuellement en deux rubriques:

- Etudes biochimique de l'hémolymphe; intérêt plus particulier pour l'hémocyanine et étude des cellules sanguines;
- Etude de la nutrition, d'une part en rapport avec l'"absence" de pigmentation chez N. virei (importance des pigments caroténoides dans la nourriture proposée aux animaux) et d'autre part en rapport avec le milieu où vivent les animaux et leur physiologie (comparaison avec les Amphipodes épigés).

M. René GINET, Professeur:

Systématique et biogéographie:

Détermination, répartition biogéographique et écologique des Niphargus français, et plus particulièrement ceux du Sud-Est (Jura, Alpes, Ardèche): N. virei, foreli, aquilex, kochianus, rhenorhodanensis, etc. Problèmes de la croissance et de la longévité; variabilité morphologique des populations locales.

M. Jacques MATHIEU, Assistant:

Metabolisme respiratoire chez Niphargus rhenorhodanensis:

Cette étude fait l'objet, en premier lieu, d'observations sur des individus considerés comme témoins. La grande variabilité individuelle observée peut être réduite si l'on considère les facteurs suivants: durée de l'élevage, durée de la mesure, masse des individus, activité motrice des individus expérimentés.

Il est alors possible d'étudier l'acclimatation thermique à partir de températures supérieures à celles rencontrées dans les milieux naturels, et d'essayer de mettre en évidence les facteurs qui entrent en jeu dans cette régulation.

M. Jean-Louis REYGROBELLET, Assistant:

Cytologie et histologie fonctionnelle chez Niphargus

1) Cytologie: recherche d'un moyen susceptible de clarifier la systématique de ce genre hypogé par l'intermédiaire de la caryologie. Les garnitures chromosomiques haploides, diploides, et les caryogrammes comparés obtenus jusqu'à présent semblent dégager une grande homogénéité dans l'ensemble du genre lui-même.

2) Histologie fonctionnelle: elle consiste d'abord à déterminer, par support histologique, le"fonctionnement" de la gonade de Niphargus; il s'apparente à celui des autres Gammaridés qui ont été étudiés par

d'autres auteurs. Mais une question se pose quant à la durée d'un cycle spermatogénétique complet, pour cet animal troglobie; cette durée est donc recherchée au laboratoire, dans des conditions d'environnement se rapprochant le plus possible de celles du milieu souterrain naturel.

Melle Marie-José TURQUIN, Assistante:

Ecologie et éthologie en milieu naturel; alimentation; cycles de reproduction

Mes observations dans le Jura français montrent que les populations cavernicoles de Niphargus ont un rythme sexuel saisonnier; en l'absence de tout stimulus thermique ou lumineux, les individus mâles semblent présenter un synchronisme saisonnier, à périodicité annuelle, des diverses phases de leur gamétogenèse. Les femelles subissent la vitellogenèse plusieurs mois avant la ponte. L'étude expérimentale conduit à annuler ce rythme. Divers stimulus naturels sont actuellement étudiés sur le plan quantitatif.

La nutrition de Niphargus en milieu naturel est envisagée du point de vue qualitatif, et aussi sur le plan comportemental; il importe en effet de savoir comment et quand les Amphipodes peuvent se nourrir en fonction des conditions hydrologiques particulières au domaine karstique.

13. mai 1974

R. GINET.

TRANSLATIONS OF AMPHIPOD PAPERS

Perhaps starting a separate column under this heading will entice you to give more information of this type, which is of great interest, both scientifically and economically, for many of us. Again, I can start by refering to Sanderson's note in A.N. 2 (p.6) and by quoting from a letter by Diana LAUBITZ: "I have unedited translations, from Russian, of the following:

KUDRJASCHOV, V.A. & S.V. VASSILENKO, 1972. On the problems of the systematics, distribution and ecology of the amphipod Caprogammarus gurjanovae (Crustacea, Amphipoda, Caprogammaridae). Vladivostok, Uchenye zapiski DVGU 60: 134-147.

VASSILENKO, S.V. 1972. A new family and new genera and species of caprellids (Amphipoda, Caprellidea) from the North Pacific. Akad. Nauk SSSR, Trudy zool. Inst. 52: 237-250.

I also have a portion of the Podoceridae from GURJANOVA 1951: genus Dulichia (diagnosis and key) + species bispina, unispina and cyclops, genus Paradulichia (diagnosis and key) + species typica and spinifera".

In my opinion information such as this is exceedingly, useful, and I hope this column will become a regular feature of the Newsletter. With regard to translations into Russian. I musk ask my colleagues there to furnish such information ready for off-set printing, as we have no possibility here of typing in Cyrillian characters.

REQUESTS FOR INFORMATION etc.

This column is very meagre this time. Could some of those who have made use of it in earlier Newsletters, give me some idea as to whether such requests for information get any response? For my own case, I got a few positive reactions to my request concerning Mediterranean amphipods in A.N. 2, but none about Ellobiopsids or Podasconids. They can't be that rare.

The item contributed by Diana Laubits under"News from colleagues" in this Newsletter (p.) contains a plea for discussions about the status of the Caprogammaridae by gammaridologists. Furthermore, a colleague of mine in Norway (Dr. J.B.L. Matthews, Biological Station, N 5065 Blomsterdalen) has asked me about published information about the biology of the Scinidae,in connection with the preparation of a paper about Scina borealis in Korsfjorden, western Norway, where Matthews conducts a team study on energy flow in a deepwater zooplankton community.

Genus Eohaustorius on the Eastern Pacitic Coast

In order to better define phyletic and ecological relationships of the fossorial sand-dwelling genus Eohaustorius on the Pacific coast of the U.S.A. and Canada, E.L. Bousfield and W.S. Bosworth are soliciting collections from scientists working in these areas. Representatives of this genus have been found in sand intertidally and subtidally (to depths of 30 meters) on the open and protected coast and in estuaries. Please send collections with detailed sampling information (location, height on beach, approximate salinity and temperature of water, etc.) to W.S. Bosworth, Normandeau Associates, Inc., 686 Mast Road, Manchester, New Hampshire 03102. Thank you.

Weldon S. BOSWORTH, Jr.

SOME THOUGHTS ABOUT THE FUTURE FOR AMPHIPOD TAXONOMY

Jerry BARNARD

New Index of marine Gammaridea with Bibliography

I should like to announce plans to issue a new index to the marine Gammaridea of the world, an expanded and hopefully more useful index to the species than my 1958 Index. The 1958 index simply listed names, citations to Zoological Record or to a few master references. The new index, to be coauthored with my wife, Charline M. Barnard, will cite original descriptions, one or more modern references, all synonymies (but not all references, simply those most useful taxonomically for the user to find a modern reference and from there to trace other references), and a brief synopsis of the distribution of the species. As before transferrals of species from genera to genera or sinkings into synonymy will be indicated but a terminal alphabetical index to all names also will be included. We plan to publish the index in Smithsonian Contributions to Zoology in offset printed form, the pages being composed in the form of computer outprints directly photographed..This does not have the "nice" appearance of letterpress but will reduce printing coasts. A full "Literature Cited" will be included. Unfortunately a modern full bibliography to Gammaridea has not been published by anyone ;if one were available we would utilize that as a basic groundwork and our citations could be coded to that work. Since such a work is not available we must go to the added expense of publishing a full Literature Cited. We anticipate citing all original descriptions and not relying on the user to have Stebbing 1906 or 1888 at hand, although our final decision in this regard will depend on time and funds available in the next few years. The 1958 Index was based on a card file of about 50,000 citations; we have now expanded that file to 100,000 cards and anticipate expanding the file to 500,000 cards, to include biogeographic information. The card file eventually will be submitted to Smithsonian Computer Center, converted to IBM cards and then to memory tape. However, we may compile the index to be printed before the memory tape is made; the reason for this procedure is that we can compile the Index by "culling" only original and modern references long before we have fully completed all references, major and minor; this of course, requires assessment of what is a major and what is a minor reference.

We anticipate that the full memory tape will be prepared some time in the middle 1980's at which time the Index, which we hope to issue prior to 1980, would become obsolete; once the memory tape is available it can be supplemented daily and printouts can be asked for daily, so that any worker in the world could ask us for a printout copy

of the literature on any family and we could supply a typed printout. We anticipate that this service might be free if funds become available for Smithsonian Inst. to provide this kind of service. A special tape for biogeographic information would also be constructed but this may not become available until the mid-1990's because vast clerical work is required to record the numerous localities on primary data sheets-eventually we will be able to record these directly on tape without making sheets or cards but we will never the less make sheets and cards to guard against any loss of master tapes.

Meanwhile we have completed primary citation cards for about 75 percent of the marine literature and about 40 percent of freshwater literature. In marine literature we have catalogued all available papers between 1870 and 1972, and many between 1758-1869 and freshwater papers between 1885 and 1972; between the two groups of literature we have a list of 400 references we have, as yet, not seen; only about half of these are available in libraries of North America so that we will have to visit European libraries in order to see the remainder, or obtain copies by xerox (very expensive because of time required for European librarians to find the references; we believe that we will concerve funds by searching for these references ourselves).

I would appreciate learning the viewpoint of my colleagues as to the desirability of citing the type-locality for each species in the Index. Is this vital information? In this regard we conceive of the printed Index as a handy reference manual, not as an exhaustive compendium of every reference to each species. Many such references are trivial but ultimately the printouts from the tapes will include trivial references. We are also faced with the problem as to the validity of identification of each citation to a species-whether the author identified the material correctly. We shall therefore make subjective decisions on each citation, so that each card is classified as "high probability of correct identification" or "low probability of correct identification" or "veracity of identification unknown". The computer printout will then be able to organize the literature of each species into categories. This kind of activity is very time-consuming and subject to a high degree of error so that we may simply divide references into "primary" and " "secondary". Primary references would include those in which the author illustrated or described the material sufficiently well that a correct identification is confirmed within reason. All other references would be presented in a secondary list without prejudice. All of this manipulation is necessary that the computer can be instructed to spit out "quick" reference lists.

We also face the problem of "divided" misidentification, in which a recent student finds an earlier identification composed of two or more species. We can easily instruct a computer to handle such duplications but in our present card-filing system this is a true nightmare, because in cross-referencing we are required to create 2 additional, sometimes more, cards to handle these erros. At present we probably have 25,000 cross referencing cards to handle name changes or splitting of identifications. The cross referencing file is maintained separately so that a "name" can be found even though the species has been transferred to another genus. The creation of this DUPLICATE system is tedious because it requires checking every paper in chronological sequence for generic transferrals and synonymizations. Many times we have not yet "catalogued" the earlier paper in which a species was described but which now resides in another genus. Before the Index is issued we must therefore complete all cataloguing and then progress though the literature checking any changes in nomenclature. We have nevertheless created the present cross reference by culling 1500 papers, even though we know all of this has to be rechecked at a later date. Much of this method was expediency based on the problem that for most of the 24 years since 1949 when this catalog was created we have resided or worked in outposts remote from library resources. We could not therefore commence at year 1758 and work forward, we had to commence at 1864 (Zoological Record) and work backwards and forwards. Lack of funds to compile a library of reprints and xeroxes has hindered the work but this deficiency is slowly being ameliorated.

A plea for reprints

We would sincerely appreciate receiving reprints from current colleagues, especially of works in which new species, new taxonomic changes, new or compiled distribution records are published. This will save our time finding their papers in our library. The Smithsonian Library is good but not excellent and 2/3 of our holdings are in the Library of Congress, requiring us to lose much time in "red-tape" obtaining articles from that library. Sometime we wait months to see a journal because Library of Congress has a long waiting list of borrowers from all parts of the United States. This is a perfect nuisance.

A journal of amphipod taxonomy? A Museum of Ampeliscidae?

We deplore the present world-wide disorganization of "science" and hope that our successors will be sufficiently intelligent to organize amphipodan taxonomy so that all papers are published in one journal. This would make bibliographic work very efficient, but it would

require world cooperation and some kind of complicated international funding. The funds of all journals in the world would be pooled and all papers on amphipodan taxonomy would be in one journal, all those on isopod taxonomy in another, etc., all papers on DNA in another journal, etc. New journals would be created each year and old journals disbanded (we no longer need a formal journal on alchemy), as science progressed. I would hope that Dr. Vader's valuable newsletter might form the nucleus for amphipodan taxonomy---.Complicated? yes. But far more efficient than the present system where we and the experts of Zoological Record and Biological Abstracts, etc. must check 4000 journals just for amphipod articles. This would also save many library funds, so that libraries concentrating in biology could reduce the total necessary purchases to just those journals in biology without having to subscribe to journals that only have 2-3 biological articles a years. mixed among articles on anthropology or oceanography or chemistry. This, of course, would reduce the "sovereignty" of various local scientific societies, but their importance could be maintained if they would become sponsors of several journals into which their works are divided. One primary objection to this method would of course be the problem that "freedom" of publication would be restricted and disputes could arise that authors on amphipodan taxonomy might be denied publication rights unless certain journalistic standards were maintained. This might evolve deleteriously to the point that authors were denied publication for political reasons or because the journal had been "captured" by a dominant individual or group. I recognize this limitation but believe that disputes could be adjudicated in some fair way. Manking is capable of anything.

Another helpful method would be for all amphipodan taxonomists to purchase 300 extra reprints, send these to a clearing-house which, each year, would bind these into a book and sell or give these to libraries and taxonomists. In all methods, of course, undue hardship is placed on taxonomists with no funds(even in U.S.A. taxonomists have no funds or very small budgets) and international subsidies would be required. This is utopian. Nevertheless I believe we would agree among ourselves that amphipodan taxonomy is very disorganized in terms of financial support and issuance of publications. We are very antiquated in our bibliographic resources and far behind the times in terms of monographic studies. Our type-materials and museum deposits are haphazardly curated in many cases. Types and material become lost over the years, not only from wars but from neglect and shifts in national priorities. We have very little interchange of museum specimens. I am even at fault in this as the Smithsonian collections are very restricted just to a limited geographic area, western Atlantic, eastern Pacific (sparse), American arctic, and American freshwater although input of Australian antarctic and central Pacific materials is now being accele-

Our European collection is virtually non-existant; we have perhaps fewer than 10 of Sars' classic species or Chevreux and Fage's classic species. Fortunately, for me, these species were well described. We would like to see not only good geographic coverage maintained but many museums should make the effort to aggregate matarials of phyletic units--- one museum might specialize in Ampeliscidae, another museum in Phoxocephalidae, a third museum in 10 genera of Lysianassidae, ets. In this way, taxonomists could have a ready source of all the known species of a genus and be prepared to monograph the material without the vast headaches of borrowing and tracing materials. This activity requires long-term commitment of museum Directors to support collections for Centuries.

"Compilation-monographs" for families, large genera etc.

No large genus (10+species) of marine amphipods can now be exhaustively monographed unless we are absolutely sure that all species are collected or are extremely restricted to a narrow, easily explorable province. There seems to be no hope that commonly-occurring genera such as Ampelisca, Elasmopus, Corophium can be exhaustively monographed for many decades. Many world areas have been poorly explored-indeed there are entire marine biotic provinces from which only a few amphipod records have ever been obtained. It appears impossible to create monographs that approach exhaustion of resource. Nevertheless the taxonomic workability (ease of identification or ease of obtaining basic starting points for identification) would be enhanced by issuing monographs on families, parts of families or large genera, even though we know that such are highly incomplete. Even monographic "compilations" would be useful and to that end Dr. Gordon S. Karaman and I, with assistance of my wife, are commencing a "compilation" of the family Ampeliscidae and hope, over the years, to issue compilations of other families or sections of families, or large genera. We hope that others of our colleagues might also engage in this activity and that through this newsletter we can avoid duplication of effort and afford each other assistance. Karaman and I have no immediate plans for work in families other than Ampeliscidae as we want to determine the amount of effort necessary to this compilation in order to make it a workable background-starting-point for taxonomic study in this family. The suborder Gammaridea has reached such a size that a monograph in the style of Stebbing 1906 is impossible for one person without vast financial resources to hire assistants' help with dissections, illustrations, literature-- and even an assistant who does nothing but write letters trying to borrow materials. Our modern standards of illustration require vast input; we estimate that even the great master G.O. Sars could not complete a world monograph on the known species of Gammaridea. We anticipate that our

"compilation-monograph" would be streamlined by organizing the illustrations into categories. In 140 species of Ampelisca there might only be 25 kinds of head, 76 kinds of pereopod 5, 38 kinds of epimeron 3, etc. and the illustrations would be reduced in number to those levels of example. We would, however, not describe new species within the monograph, as they should be formally presented in full-blown illustrative display in another medium. We do not, however, anticipate that we will delve very deeply into any attempt to describe new species, rather to confine our activity to reworking the known species and describing any new species that incidentally come our way, if the materials are of a high degree of excellence. The purpose then is to present the taxonomy of the group as it appears to us to exist at the time we submit our work for publication with no apologies for the fact that only 40 percent of the species are yet known. The purpose is to provide a starting point for others. We hope that others will provide starting points for us in reciprocity, and that some greater efficiency in the identification of species may slowly emerge.

The problem of routine identifications. A collective cry from the wilderness?

One of the annoying problems all of us taxonomists face is the large amount of requested identification work that is aimed our way. This has become an insuperable problem owing to the so-called ecological "crunch", the numerous pollution surveys that are being undertaken. I now must refuse the vast majority of requests I receive, many of them requesting specific identifications of dozens of species and counts of thousands of specimens. Obviously the world has a deficiency of taxonomists, or else we taxonomists have failed to provide the tools necessary for the non-taxonomist to undertake his or her own identifications. The universities of the U.S.A. have so deemphasized learning in taxonomy that most biologists we produce are completely ignorant of this kind of activity. Many of our professors actually denigrate taxonomy. Fuel is added to their opposition when a taxonomist refuses to help one of their graduate students identify his materials for his doctoral dissertation. I belong to the "old school" of university graduates who believe that a predoctoral student should undertaken his own taxonomic elucidations to the fullest extent possible, without relying on some distant expert to do his "work" for him (or her). Obviously there is fine line of scientific discrimination in this problem because the student's doctoral work, if published, may be spoiled and become non-replicable (and thus unscientific) if his identifications are erroneous. The same applies to any scientific work dependent on knowing the kind of animal or plant being studied, or biota used as material for

extraction of derivatives under study. Taxonomists as a general group therefore probably need some positive solution on the problem, perhaps a public forum in national and international journals to present their case. The "case" is that taxonomists are sparse, they are overburdened with requests, they have little financial support, and they are vitally necessary components of the scientific community of scholars. Publication of a article in a journal such as "SCIENCE" (U.S.A.) by an individual taxonomist on this subject probably sounds like a cry from the wilderness to most non-taxonomists, whereas an article submitted by a cohesive group of taxonomists might be well recognized, instructive and beneficial ultimately to our basic financial distress, if not to the improvement of the educational process in the universities. Perhaps a group of amphipodan taxonomists might be willing to create such an article and submit it to national journals seen by their colleagues in various fields of non-taxonomic biology. (These thought were contributed by Jerry Barnard in a long letter, and the heading and subtitles are mine. I foresee much discussion as a result of this paper, and sincerely hope much of it can be canalized through the Newspaper, as this is what it has been started for. As I have written several times before, it is primarily up to the non-taxonomists among us to help keep the Newsletter from becoming the Newsletter of Amphipod Taxonomy that Jerry Barnard seemingly envisages. W.V.)

LAST MINUTE ADDITIONS

SHYAMASUNDARI, K., 1972. Histochemical recognition of carbohydrate protein yolk bodies in invertebrate oocytes. _____ Proc. Indian Acad. Sci. 76 B: 258-261. (Studies on 4 amphipods, viz. Talorchestia martensii, Orchestia platensis, Corophium triaenonyx and Elasmopus pectenicrus, and 2 polyclad turbellarians).

SHYAMASUNDARI, K., 1972. The growth and cytochemistry of the oocytes in some amphipods. _____ Proc. natn Acad. Sci. India 41 B: 41-49. (Studies on Talorchestia martensii Corophium triaenonyx and Elasmopus pectenicrus)

SHYAMASUNDARI, K., 1972. Studies on the tube-building amphipod Corophium triaenonyx Stebbing from Visakhapatnam Harbour. Annual life cycle. _____ Rivista Biol., Perugia 65: 203-224. (In English and Italian).

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NEWS FROM COLLEAGUES

WELDON S. BOSWORTH: Dr. Bousfield and I are collaborating on an monograph on the genus Eohaustorius on the eastern Pacific Coast. After looking through his extensive collections we find that besides the known species of E. washingtonianus, E. sencillus, E. brevicuspis, E. sawyeri and E. estuarius there are at least two other species. One was figured by Barnard as E. washingtonianus in his 1957 paper, but appears to be a distinct species; the other was collected by Bousfield from near Hecate Straits off British Columbia. We need further collections to complete taxonomic and distributional information (See p.).

E.L. BOUSFIELD: I am able to provide copies of my amphipod guide at author's cost (half price) to a limited number of students who cannot obtain a copy in any other way. (I take this opportunity to record a "minor factual error" in my review of Bousfield's book; it contains descriptions of 6 n.spp., not 7 as I noted in A.N. 3. W.V.)

Howarth and I have a paper (near completion) on a new genus and species of land amphipod from the Hawaiian lava tubes_____ a quite remarkable beast.

I.I. GREZE: This year I am preparing a monograph on the biology of the Amphipoda of the Black Sea. The results of field investigations and laboratory experiments during 13 years will be presented. Special attention will be given to the following subjects: zoogeographical analysis; horizontal and vertical distribution; life cycles, growth, reproduction; structure and dynamics of populations; significance of Amphipoda in the biocoenoses of the Black Sea and in the food of fishes.

H.E. GRUNER: I am working intensively on the collections of the Dana- and Galathea-Expeditions (all groups of Hyperiidea) At the same time I am preparing the part Hyperiidea of the "Crustaceorum Catalogus". The material of the Dana-Exp. is so enormous that I need another few years to sort the collection to the families and genera.

..FRED. HOLLAND: At the present I am completing my Ph.D. at the University of South Carolina.I am very interested in the distribution of amphipods in estuaries of the southeastern U.S., especially the systematics-ecology of these species.

OHN R. HOLSINGER: My recent work with amphipods includes the description of a new species of Hadzia from a brackish-water cave in Jamaica, and descriptions of a new genus and two new species of amphipods from caves in the Yucatan Peninsula of southern Mexico.

WILLIAM S. JOHNSON: I am now working in the field of Peracaridean reproduction, Previously, I have worked with isopods and am now studying reproductive cycles and fecundity of amphipods on a comparative basis.

R.A. KAIM-MALKA: Je travaille actuellement à une revision du genre Haploops en Méditerranée.

DIANA R. LAUBITZ: 1. My revision of Dulichia is nearing completion. 2. I have completed, with Mr. George Lewbel, the description of a n.sp. of Caprella from California, to be published in Can. J.Zool. Mr. Lewbel is working on the biology of this species. 3. I am working on the Gammaridea collected by the "Hudson 70" Expedition in the Beaufort Sea. 4. I am writing a paper on the taxonomic status of the family Caprogammaridae. I hope to get some reaction from gammaridean specialists on this problem, discussion of which has so far largely been confined to caprellidologists.

PHILIPPE LAVAL: I have in the press a paper on multivariate analysis of the growth of Phronima sedentaria.

ROGER J. LINCOLN: Work carried out at British Museum (Natural History), Crustacea section. 1) Preparation of a systematic monograph on British marine Amphipoda- Gammaridea. This work will include about 300 species, with keys to families, genera and species, diagnoses of families and genera, short descriptions and figures of all species with notes on distribution, ecology, etc. (R.J. Lincoln). 2) Study of a large collection of amphipods from Lake Titicaca, S. America, and the surrounding area. The collection comprises a great many species all of which belong to the single genus Hyalella. An eventual revision of this genus is anticipated (G.I. Crawford, R.J. Lincoln). 3) Scanning electron microscope study of amphipods especially the variety of spines and setae, and the structure of the calceoli (R.J. Lincoln, D.E. Hurley).

L.P. MADIN: My interests in amphipods are in the natural history of hyperiids and particularly their associations with other planktonic animals. In the course of my graduate research on salps, I have collected a number of associated amphipods (Vibilia and Lycea spp.) and will be discussing these relationships in my dissertation.

ANNAMARIA NOCENTINI: At present I am not working with Amphipoda. For some years my special field of interest has been the macrobenthonic fauna of the littoral and sublittoral zone of lakes. As a result I have encountered and have had the opportunity to work on the systematics of Gammaridae of lakes, but I am not a specialist of this taxonomic group.

WILLIAM B. RHODES: My MS thesis research concerns the haustoriid Neohaustorius schmitzi Bousfield. I am investigating its distribution on an open vs a sheltered sandy beach in relation to temperature, salinity, water and oxygen content of the sand. In the laboratory, I hope to determine salinity tolerance and preference, temperature tolerance and preference, grain size preference, and look into the attractivences of the natural sand with respect to algal and bacterial coatings. My methods and procedure are predominantly those of John Gray, Bengt-Owe Jansson, and Douglas D. Sameoto.

PETER N. SLATTERY: We have several benthic studies, completed and in progress, here at Moss Landing and I am the one who does the amphipods. Since the studies are on soft bottom those are the kind of amphipods I have been working with- looking at seasonal cycles in reproduction, some spatial distribution, and ecology with the genus Paraphoxus.

MICHAEL H.THURSTON: My current research interests concern vertical migration and distribution of hyperiids, taxonomy and biogeography of antarctic amphipods, taxonomy and biology of slope and bathyal benthic gammarids, and distribution of the amphipods of the British Isles.

WIM VADER: I have in preparation several papers on associated amphipods, viz. on Stenothoe brevicornis living among the tentacles of the sea anemone Actinostola callosa, on Metopa glacialis living in the branchial cavity of Modiolaria species in the Barents Sea and Canada, and on M. groenlandica living inside Brachiopoda in the N. Brunswick area (the last two in cooperation with George Webb, St. Andrews). I have also found large number of Aristias microps in sponges in the Tromsø area. Work on isopod parasites of amphipods (with Jarl-Ove Strömberg, Lund), on ellobiopsid parasites of amphipods (with Bruce Wing, Auke Bay) and on haustoriid amphipods of South- and West-Africa and the Mediterranean, is progressing steadily, though much too slowly.

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Again I have to thank Claude de Broyer, mrs Iraida Greze and Jan Stock for effective and generous help with references. The inclusion of papers "in press" in this section has been met with several positive comments, but is vigorously opposed by Diana Laubitz"mainly because I think it may lead to confusion. We are letting each other know what we are working on, and the Bibliography keeps us up to date on publications; papers in press could always be included in the News from Colleagues section. " Comments?

May I ask your special assistance with the following journals, which are unavailable to me: C-r. Acad. Sci. Paris, Int. J. Speleol. J.

Spéléol., Dissert. Abstr., Ref. Zhurnal, and papers published in local journals? If somebody would offer to scan one or more of these journals for amphipod papers, this would be of great help.

ALOUF, N, 1973. Biotope et description de Niphargus altagahizi n.sp., Amphipode Gammaridé souterrain du Liban. _____ Int. J. Speleol. 5: 49-61 (A new species in the N. orcinus s.l. group)

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BOESCH, D.F. & R.J. DIAZ, 1974. New records of Peracarid crustaceans from oligohaline waters of the Chesapeake Bay. _____ Chesapeake Sci. 15: 56-59.(Corophium aquafuscum Heard & Sikora, 1972).

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MAREN, M.J. van, 1973. A new Echinogammarus of the pungens-group, Echinogammarus pinksteri nov. sp., from Central Italy (Crustacea, Amphipoda). _____ Bull. zool. Mus. Univ. A'dam 3: 103-108.

MAURER, D. & L. Watling, 1973. Studies on the oyster community in Delaware: the effects of the estuarine environment on the associated fauna. _____ Int. Rev. ges. Hydrobiol. 58: 161-201 (not seen).

MAYZAUD, P., 1973. Respiration et excretion azotée du zooplancton. 3. Etude de l'influence des variations thermiques. _____ Ann. Inst. océanogr. Paris 49: 113-122 (experiments with i.a. Phronima sedentaria)

MOORE, P.G., 1973. The kelp fauna of Northeast Britain. 2. Multivariate classification: turbidity as an ecological factor. _____ J. exp. mar. Biol. Ecol. 13: 127-163.

MOORE, P.G., 1973. The larger Crustacea associated with holdfasts of kelp (Laminaria hyperborea) in North-East Britain. _____ Cah. Biol. mar. 14: 493-518. (Amphipods pp. 497-513).

MORAND, C. & J. MATHIEU, 1974. Relation entre masse sèche et deux autres caractères biométriques chez Niphargus rhenorhodanensis (Amphipode des eaux souterraines). _____ Crustaceana, sous presse.

MYERS, A.A., 1974. A new species of commensal amphipod from East Africa. _____ Crustaceana 26: 33-36. (Gitanopsis paguri n.sp. from the body of the hermit-crab Dardanus megistos).

NAIR, K.K.C., P.G. JACOB & S. KUMARAN, 1973. Distribution and abundance of planktonic amphipods in the Indian Ocean. _____ In: B. ZEITZCHEL (ed) The biology of the Indian Ocean. Ecol. Stud. 3: 349-356 (Springer-Verlag). (not seen).

OSADCHIKH, V.F., 1973. (Annual and seasonal variations in the abundance of Corophiidae in the northern Caspian). _____ Proc. VNIRO 80: 104-128 (In Russian)

PYATAKOVA, G.M., 1973. (Some data on reproduction and fecundity of Caspian Amphipoda). _____ Zool. Zh. 52: 685-688 (In Russian, not seen).

RABINDRANATH, P., 1973. A redescription of Pereionotus testudo (Montagu) (Crustacea:Amphipoda) with observations on the genera Pereionotus Bate & Westwood and Palinnotus Stebbing. _____ Vie Milieu 23 A (1972): 33-44.

RAKUSA-SUSZCZEWSKI, S. & R.Z. KLEKOWSKI, 1973. Biology and respiration of the Antarctic Amphipoda (Paramoera walkeri Stebbing) in the summer. _____ Polski Arch. Hydrobiol. 20:475-488.

REGER, J.F. & M.A. FAIN-MAUREL, 1973. A comparative study on the origin, distribution and fine structure of extracellular tubules in the male reproductive system of species of isopods, amphipods, schizopods, copepods, and Cumacea. _____ J. Ultrastr. Res. 44: 235-252.

REYGROBELLET, J.L., 1974. Garniture chromosomique de quelques espèces du genre Niphargus (Amphipode Gammaridé troglobie). _____ Annls Spéléol. 29, sous presse.

ROMANOVA, N.N., 1973. (Ecology and quantitative distribution of autochthonous Gammaridae in the Caspian Sea). _____ Proc. VNIRO 80: 73-103 (in Russian).

SANDBERG, D.M., A.D. MICHAEL, B. BROWN & R. BEEBE-CENTER, 1972. Toxic effect of fuel oil on haustoriid amphipods and pagurid crabs. _____ Biol. Bull., Woods Hole 143: 475-476 (Experiments with Neohaustorius biarticulatus).

SCAPINI, F. & A.ERCOLINI, 1973. Research on the non-visual orientation of littoral amphipods: experiments with young born in captivity and adults from a Somalian population of Talorchestia martensii Weber (Crustacea Amphipoda). _____ Monit. zool. ital. 3:23-30. ("No evidence was obtained to support the view that the population studied is capable of correct orientation towards sea or land when visual cues are excluded").

SCHIECKE, U., 1973. Ein Beitrag zur Kenntnis der Systematikk, Biologie und Autökologie mariner Peracarida (Amphipoda, Isopoda, Tanaidacea) des Golfes von Neapel. _____ Unpublished Diss., Univ. Kiel, 409 pp, 91 Plates (A veritable mine of information. New species are described in the genera Bogidiella, Listriella (2 spp.), Corophium, Siphonoecetes and Spongula n.gen. (Pleustidae), but more important are the extensive descriptions of biology and behaviour of a long series of species of many different families).

SHYAMASUNDARI, K., 1973. A preliminary study of neurosecretary cells in Talorchestia martensii (Weber) and Orchestia platensis Krøyer (Amphipoda, Talitridae). _____ Crustaceana 25: 1-4.

SIEG, J., 1973. Zum Problem der Herstellung von Dauerpräparaten von Klein-Crustaceen, insbesondere von Typus-Exemplaren. _____ Crustaceana 25: 222-224.

SMITH, W.E., 1973. Thermal tolerance of two species of Gammarus. _____ Trans. am. Fish. Soc. 102: 431-433 (not seen. The species used are G.lacustris and G. pseudolimnaeus)

SMITH, W.L., 1973. Submersible device for collecting small crustaceans. _____ Crustaceana 25: 104-105.

STEELE, D.H., 1973. The biology of Parhyalella pietschmanni Schellenberg, 1938 (Amphipoda, Hyalellidae) at Nosy Bé, Madagascar. _____ Crustaceana 25: 276-280.

STEELE, D.H. & V.J. STEELE, 1973. Some aspects of the biology of Calliopius laeviusculus in the northwestern Atlantic. _____ Can. J. Zool. 51: 723-728.

STEELE, D.H. & V.J. STEELE, 1973. The biology of Gammarus in the northwestern Atlantic. 7. The duration of embryonic development in five species at various temperatures _____ Can. J. Zool. 51: 995-999.

STRONG, D.R., 1973. Amphipod amplexus, the significance of ecotypic variation. _____ Ecology 54: 1383-1388. (Duration of amplexus in the freshwater talitroid amphipod Hyalella azteca is shown to be negatively correlated with an index of the intensity of predation by visually oriented fish).

THURSTON, M.H., 1973. A new species of Paramelita (Crustacea: Amphipoda) from South Africa._____ Annls S.Afr. Mus. 62: 159-168.

THURSTON, M.H., 1974. The Crustacea Amphipoda of Signy Island, South Orkney Islands._____ Br. antarct. Surv., scient. Rep. 71 (1972): 1-127. (An important and thorough study. The author has not contented himself with a study of the fresh material, but has also reexamined old material and cleared up many mistakes and much confusion from published literature. The genus Oradarea is revised, and Schraderia and Pontogeneie discussed in some detail. New taxa: Gnathiphimedia fuchsi, Oradarea ocellata, O.unidentata, O. acuminata, O. rossi, Atylopsis signiensis, Schraderia dubia, S.barnardi, Paramoera hurleyi, Pontogeneia redfearni, Ischyrocerus camptonyx. Tryphosites capadarei is shown to be a synonym of "Tryphosa" carinata,Gulbarentsia larseni of Oediceroides lahillei and Megamphopus blaisus of Pseudeurystheus sublitoralis. Megamphopus chevreuxi is proposed as a new name for M. longicornis Chevreux, a junior homonym of M. longicornis (Walker). The paper also contains many data on biology and reproduction of the species).

TURQUIN, M.-J., 1973. La série régressive de Strauss et les Amphipodes microphtalmes hypogés. _____ Annls Spéléol. 28: 183-186. (not seen).

TURQUIN, M.-J., 1973.Compensations sensorielles chez les Gammaridés hypogés. _____ Annls Spéléol. 28: 187-191 (not seen).

TURQUIN, M.-J., 1973. Niphargus,un animal cavernicole. _____ Film, 16 mm, couleurs, sonore optique, 26 minutes. Service du film de Recherche scientifique, Paris.

VOBIS, H., 1973. Rheotaktisches Verhanlten einiger Gammarus ___ Arten bei verschiedenem Sauerstoffgehalt des Wassers. _____ Helgol. wiss. Meeresunters. 25: 453-557.

ZERBIB, M.C., 1973. Contribution à l'étude ultrastructurale de l'ovocyte chez le Crustacé Amphipode Orchestia gammarella Pallas. _____ C-r. Acad. Sci. Paris 277 D:1209-1213. (not seen).

Last minute addition

BARNARD, J.L., 1974. Gammaridean Amphipoda of Australia, part II. _____ Smithson. Contr. Zool. 139: 1-148. (This part of Barnard's Australia-series deals with Amphilochidae, Dexaminidae, Gammaridae, Hyalidae, Leucothoidae and Stenothoidae. The following new taxa are described: Austropheonoides mallee, A. takkure, Moolapheonoides (Amphilochidae, Cyproideinae) with 3 species, Syndexamine mullauna, Elasmopus menurte, E. yunde, Cottesloe (Gammaridae) with 2 species, Nuuanu mokari, N. numbadi, Allorchestes bellabella (= A. angustus Barnard 1954, non Dana, from Alaska), Hyale kandari, H. loorea, H. wilari, H. yake, Leucothoe assimilis, L. boolpooli, L. gooweera, L. tarte, Leucothoides torrida (= L. pottsi Schellenberg 1938, non Shoemaker), L. yarrega, Ausatelson kolle, Chucullba (Stenothoidae) with 2 species, Raumahara noko, Stenothoe allinga, S. nonedia, S. quabara, S. waka, and Wallometopa (Stenothoidae) with 1 species, W. cabon. The validity of the family Beaudettiidae is now considered highly doubtful, and possibly also the Argissidae should be reduced to subfamilial level under the Gammaridae. The genus Allorchestes is reorganized on a worldwide basis, and many of its species transferred to Hyale: only 5 valid species remain: angusta (incl. malleolus and vladimiri), bellabella, carinata Iwasa (new status), compressa (a very variable species), and novizealandiae. The author gives an extensive discussion of the taxonomic problems in the Leucothoidae where he provisionally favours "small" species. Leucothoe gracilis is transferred to Leucothoella, and the probable existence of many different species of Leucothoides is shown. The genus Stenothoe has several sibling species in warm-temperate Australia.

ADDITIONS

BERREUR-BONNENFANT, J., J.J. MEUSY, J.P. FEREZOU, M. DEVYS, A. QUESNEAU-THIERRY & M. BARBIER, 1973. Recherches sur la sécrétion de la glande androgène des Crustacés Malacostracés : purification d'une substance à activité androgène. _____ C-r. Acad. Sci. Paris 277 D : 971-974.

CASABIANCA, M.-L. de, 1974. Influence des apports d'eau douce sur la dynamique des populations de Crustacés constructeurs de l'étang de Biguglia, Corse (Corophium insidiosum C., Tanais cavolini M.E., Erichthonius brasiliensis D.) _____ Vie Milieu 23 C (1972-73) : 45-64.

CULVER, D., J.R.HOLSINGER & R.BAROODY, 1974. Toward a predictive cave biogeography : the Greenbrier Valley as a case study._____ Evolution 27: 689-695. (The analogy between islands and isolated karst areas was examined. Aquatic species show little or no area effect due in large part to high immigration rates. The study, in a W. Virginia karst area, included i.a. 6 species of Amphipoda in the genera Stygobromus, Stygonectes and Crangonyx)

DENNERT, H.G. & M.J. VAN MAREN, 1974. Further observations on the migration of Gammarus zaddachi Sexton (Crustacea, Amphipoda) in a French stream. _____ Bull. zool. Mus. Univ. Adam 3: 157-167. (not seen).

GINSBURGER-VOGEL, T., 1973. Détermination génétique du sexe, monogénie et intersexualité chez Orchestia gammarella (Crustacé Amphipode Talitridae). _____ Unpublishes Diss-, Univ. Paris VI e.

GINSBURGER-VOGEL, T., 1974. Détermination génétique du sexe, monogénie et intersexualité chez Orchestia gammarella Pallas (Crustacé Amphipode Talitridae). 2. Etude des relations entre la monogénie et l'inter-sexualité. Influence de la temperature. _____ Arch. Zool. exp. gén 115: 93-127.

GREZE, I.I., 1973. (The rhythms of reproduction of the Amphipods of North and South Seas). _____ Mat. Vses. Sympos. po isuchennosti Chernogo i Sredisemnogo morei. Part II. Naukova Dumka K., pp. 70-76 (In Russian, not seen).

GREZE, I.I., 1974. (Some peculiarities of reproduction of mass species of amphipods in the Black Sea.) _____ Biologia morja 32 Ecologija benthosnykh organizmov. Naukova Dumka, K: ? (In Russian, not seen).

HOLSINGER, J.R., 1974. Systematics of the subterranean amphipod genus Stygobromus (Gammaridae), Part 1: species of the Western United States. _____ Smithson. Contr. Zool. 160: 1-63. (Part 1 of a three-part series. Redescribes S. hubbsi and describes 17 new species, of which 14 belong to the hubbsi-group)

JUNERA, H., J.J. MEUSY & Y. CROISILLE , 1974. Etude comparée de la "fraction proteique femelle"dans l'hemolymphe et dans l'ovaire du Crustacé Amphipode Orchestia gammarella Pallas par electrophorèse en gel de polyacrylamide _____ C-r. Acad. Sci Paris 278 D : 655-658.

LINCOLN, R.J. & D.E. HURLEY, 1974. A new genus and species of whale-louse (Amphipoda:Cyamidae) ectoparasitic on the Northern Atlantic white-beaked dolphin. _____ Bull. Br. Mus. nat. Hist. (Zool), in press.

LINCOLN, R.J. & D.E. HURLEY, 1974. Catalogue of the whale-lice (Crustacea: Amphipoda: Cyamidae) in the collection of the British Museum (Natural History). _____ Bull. Br. Mus. nat. Hist. (Zool.) in press.

LOUIS, M., 197 ? . Structure et dynamique des populations de Talitridae des étangs littoraux méditerranéens. _____ Unpublished Diss., Univ. Sci. Techn. Montpellier, 118 pp. (not seen)

MERGAULT, F. & H. CHARNIAUX-COTTON, 1973. Fécondation et premières étapes du développement chez le Crustacé Amphipode Orchestia gammarella. _____ Bull. Soc. bot. Fr. Méms 1973, Coll. Morphologie?: 117-126 (not seen).

MYERS, A.A., 1973. The genus Aora Kroyer 1845 (Amphipoda: Gammaridea) in the Mediterranean._____ Memorie Mus. Civ. Stor. Nat. Verona 20 (1972) : 283-301. (Aora gracilis and A. atlantidea occur in the Mediterranean. A. typica does not.)

MYERS, A.A., 1973. A new species of amphipod (Microdeutopus obtusatus sp. nov.) from the Aegean Sea. _____ Memorie Mus. Civ. Stor Nat. Verona 20 (1972): 303-312.

PALMER, J.D., 1973. Tidal rhythms: the clock control of the rhythmic physiology of marine organisms. _____ Biol. Rev. (Cambridge) 48: 377-418 (A review paper).

POR, F.D. & I. FERBER, 1972. The Hebrew University- Smithsonian Institution collections from the Suez Canal (1967-1972). _____Israel J. Zool. 21: 149-166 (Not seen. Contains i.a. a list of Amphipoda).

RABINDRANATH, P., 1974. Marine Gammaridea (Crustacea: Amphipoda) from the Indian region. Family Ampeliscidae. _____ Hydrobiologia, in press.

SEMENOVA, T.N., 1974. (On the diel vertical migrations of Parathemisto japonica Bov. (Hyperiidea) in the Sea of Japan). _____ Okeanologiya 14 : 334-340 (In Russian with English summary).

SOYEZ, D. 1974. Etude comparée de l'activité prévitellogénétique pendant les saisons de repos génital et d'activité sexuelle chez le Crustacé Amphipode Orchestia gammarellus (Pallas). _____ C-r. Acad. Sci. Paris 278 D:1867-1870.

VINCENT, M., 1974. Preferendum ionique des Amphipodes épigés du Centre-Ouest. _____Vie Milieu 23 C (1972- 1973): 65-80.

VINOGRADOV, G.A., 1973. (Functioning of osmotic regulation systems of freshwater amphipods in water of different salinity). _____ Ekologiya 3:75-84. (In Russian, not seen."A study has been made of amphipod adaptations to different water salinity with reference to Gammaracanthus lacustris").

LIST OF AMPHIPOD WORKERS (SECOND SUPPLEMENT)

This issue of the Amphipod Newsletter will not be sent to the numbers 2,6,9,18,20,25,34,41,51,64,65,66,69,70,85,92,96,107,116,120, 128,129,133,138,139,140,142,143,167,168,176,179,182,187,188,195,197 and 198 on the list in A.N. 2, as these people have not reacted in any way on my warning in A.N. 3. Instead, I have kept a number of copies for them at the Tromsø Museum, which they can get as soon as they ask for them.

Corrections and changes of adress

54. Thomas Ginsburger-Vogel. ♂, not ♀

81. S.E. Johnson. New address: The Wetlands Institute
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102. Yuk-maan Leung. New address: 1102½ S.Westmoreland Ave.
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180. Marie-José Turquin. Correct address. Université Claude Bernard
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177. Michael Thurston. The "National Institute of Oceanography" is now called "Institute of Oceanographic Sciences".

215/216 John Chapman New address: Bodega Marine Laboratory
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