AMPHIPOD NEWSLETTER- 7

January 1976

The main courses of this issue are essays on recent work on Black and Caspian Sea amphipods, written by Iraida Greze and Galina Pjatakova. I am sure these will be of great interest for most of us, as language difficulties usually form a formidable barrier which prevents us from keeping really up-to-date in the Russian-language scientific literature, and we are therefore especially grateful for these English summaries. We also have a report from the Schlitz symposium, and a number of notes in the series on the major amphipod collections, while John Mohr has sent his promised rejoinder on the "Chonos stam tree". The column "News from Colleagues" has this time benefited greatly from the organizing talents of Les Watling, who, together with their subscription money, sent no less than 11 contributions under this heading from colleagues in the eastern USA.

The financial situation has somewhat improved, partly by Watling's effort, partly by personal contact with colleagues in Schlitz, and there is now no immediate crisis. Payment of small cheques has now become a very uneconomic transaction, and I am trying to work out a better method with our local bank. I hope to be able to give the results in A.N. 8, for which the deadline will be 15. may 1976. Finally, I wish you all a good and peaceful 1976.

Wim Vader

Tromsø Museum
N-9000 Tromsø
Norge

THIRD INTERNATIONAL COLLOQUIUM ON GAMMARUS AND NIPHARGUS, SCHLITZ 1975

M.P.D. MEIJERING

From the 22nd to the 26th of September, 1975, the 3rd International Colloquium on Gammarus and Niphargus was held in conjunction with the 1st International Symposium on Groundwater Ecology, the latter initiated and organized by S. Husmann (Schlitz).

Both conferences were held in the knights hall of one of the Schlitz castles, the Vorderburg, where the participants were addressed by the burgomaster of the town. After this, presentations were given on ecophysiological topics, mainly on Gammarus. The second day was dedicated to ecological as well as to physiological lectures both on Gammarus and Niphargus. Taxonomic lectures on both genera followed, partly given in the

morning of the third day. A discussiongroup was formed to consider a new look at the systematics of gammaroidean amphipods of the world with a paper of E.L. Bousfield (Ottawa) as a basis of discussion. The traditional reunion of the group of Verona (1969) gave a platform to discuss systematics of Niphargus. All the presentations of the 3rd Colloquium will be published in a special supplement of CRUSTACEANA.

An excursion to the Fulda on the afternoon of the third day enjoyed fairly good weather.Sampling sites of Gammarus fossarum and Niphargus schellenbergi were visited on the slopes of the Wasserkuppe, the highest elevation of the Rhön-hills, from where the Fulda originates. Further downstream Gammarus pulex and Gammarus roeseli were sampled near the town of Fulda. During this excursion demonstrations were given of sampling methods in groundwater of the Fulda valley, forming an introduction to the program of the 1st International Symposium on Groundwater Ecology, which covered the last two days of the meeting.

Both conferences were attended by 65 participants from 13 countries, and about a dozen interested biologists from the region around Schlitz and Fulda were present as well. A press conference was given, and here the necessity of close cooperation of students working on taxonomic problems with those interested in ecology was pointed out to be of essential importance for progress towards better nature management. The official statements were given publicity all over the Federal Republic of Germany by newspapers, radio and television.

The combination of the Colloquium on Gammarus and Niphargus together with the Symposium on Groundwater Ecology, with Niphargus acting as a link, was felt to be very useful in the present state of the development of both conferences. So there was a strong demand for another combined conference, the 4th International Colloquium on Gammarus and Niphargus and the 2nd International Symposium on Groundwater Ecology. Our colleagues J. Holsinger and A.L. Buikema will make efforts to get funds for the arrangement of a meeting in Blacksburg, Virginia, U.S.A. in 1978. As soon as possible further information on this matter will be given in a circular letter.

(As one of the participants at the Schlitz-Symposium, I should like to add that the conference was very well organized, though always with an informal touch, and this was no doubt the main reason for the congenial atmosphere, which allowed us in a short time to learn much more about amphipods and amphipodologists alike. The compact mediaval small town Schlitz formed an ideal surroundings for a meeting of this kind. W.V.)

RECENT WORK ON BLACK SEA AMPHIPODS

Iraida I. GREZE

At the Institute of Biology of the South Seas a number of studies on the taxonomy and biology of Gammaridea are being carried out.

A new subspecies of Nannonyx goesii has recently been described by I.I. Greze.

The feeding and energy budget of Gammarus olivii is being studied by G.I. Abolmasova. The principal parameters of feeding and assimilation at various temperatures were established, and the daily energy balance at the same temperatures calculated. The daily food intake in G. olivii is correlated with temperature and with the weight of the animal, and this correlation is expressed by equations. The energy expenditure for metabolism and egg production in G. olivii was measured and also for these correlations equations were found.

The effects of oil pollution on populations of Gammarus aequicauda and G. olivii, and their survival and growth at different oil concentrations, are being stidied by N. Milovidova and I. Kargopolova.

My own investigations now concern size-weight and wet weight dry weight correlations in some species: Gammarus insensibilis, G. subtypicus, G. olivii, G. aequicauda, Gammarellus carinatus, Pleonexes gammaroides, Dexamine spinosa, Amphithoe vaillanti, Apherusa bispinosa and Ericthonius difformis.

To determine the seasonal dynamics in an amphipod population its life plan and its changing role in the population as a whole, I studie the life cycle of Gammarus aequicauda in the Black Sea, and clarified its growth, reproduction and population dynamics.

I also have carried out a comparative experimental study of survival and growth after acclimation to different salinities in Black Sea and Adriatic populations of Gammarus aequicauda and G. insensibilis.

The results of all these investigations are now in the press or published in the following recent papers (in Russian):

GREZE, I.I., 1975. (A new subspecies Nannonyx goesii reductus (Amphipoda Gammaridea) from the Black Sea. _____ Zool. Zhurn. 54: 297-299.

GREZE, I.I., 1975. (Survival and growth of some species of Amphipods of the Black and Adriatic Sea during the salinity acclimation). _____ In: Exsped. issled. v Sredisemnom more v apreleijune 1974 (74th trip NIS' Academic A. Kovalevsky). Naukova Dumka, Kiev.

MILOVIDOVA, N., 1974. Oil effect of some coastal crustaceans of the Black Sea. _____ Hidrobiol. Zhurn. 10 (4): 96-100.

As to museum collections of Black Sea amphipods in the USSR. I know a single and not so large one in Leningrad at the Department of Crustaceans of the Zoological Institute, Academy of Sciences, USSR.

A brief bibliography on the Amphipoda of the Black Sea(ordered chronologically)A. Systematics, zoogeography

RATHKE, H., 1837. Zur Fauna der Krym. _____ Mem. pres. Acad. St-Peters 3: 291-454.

CZERNIAVSKY, V., 1868. Materialia ad zoographiam Ponticam comparatam 1. Crustacea. _____ In: Trudy 1 sezda russk. estestvoisp. v S.-Petersb.: 19-136.

CZERNIAVSKY, V. 1868. On four species of Orchestia connected by transitional forms and found in the Black Sea. _____ Ibidem (Part of the foregoing ? W.V.)

SOVINSKY, V., 1880. On Amphipods of Sevastopol Bay. _____ Zapiski Kievskogo ob-va estestvoisp. 6:87-137.

SOVINSKY, V., 1895. Malacostraca collected by two Black Sea bathymetrical expeditions 1890 and 1891. _____ Ibidem 14: 225-289.

SOVINSKY, V., 1897. Malacostraca of the Bosphorus. 1. Amphipoda and Isopoda _____ Ibidem 15: 447-518.

SOVINSKY, V., 1904. Introduction to the study of the fauna of the Ponto-Aralo-Caspian basin as an independant zoogeographical province._____ Ibidem 18: 1-487.

TIKHIĬ, M., 1909. On the systematics and biology of the Caprellidae of the Black Sea. _____ Sbornik stud. kruzhka lyubit. prirodȳ pri Imper. Khark. Univ. 1: 99-120.

DERZHAVIN, A.N., 1925. Data on the carcinofauna of the Ponto-Azov basin. _____ Russk. hidrobiol. Zhurn. 4 (1-2): 10-34.

MARTYNOV, A.B., 1931. Zur Kenntnis der Amphipoden der Krim._____ Zool. Jahrb. 60:573-606.

MILOSLAVSKAYA, N.M., 1930. News in the Amphipod fauna of the Black Sea. _____ Trudȳ Karadagsk. biol. Stasj. 3: 41-49.

MILOSLAVSKAYA, N.M. & V.L. PAULI, 1931. Key to the Amphipoda (Gammaroidea) of the Black and Azov seas. _____ Ibidem 4: 53-85.

MILOSLAVSKAYA, N.M, 1939. Amphipoda (Gammaroidea) of the Black and Azov Seas basin. _____ Ibidem 5: 69-151.

MILOSLAVSKAYA, N.M., 1939. On the ecology of the Gammaroidea of the Black Sea in connection with their origin. _____ Ibidem 5: 152-174.

GREZE, I.I., 1966. The amphipod fauna of the Black Sea in the zoogeographical aspect. _____ Raspredelenie bentosa i biologiyà donnȳkh zhivotnȳkh v yuzhnȳkh moryakh, Kiev: 33-37.

MORDUKHAI- BOLTOVSKOI, Ph. D., I.I. GREZE & S.V. VASILENKO, 1969. Amphipoda. _____ Determination tables to the Fauna of the Black and

Azov Seas 2: 440-494.

B. Biology

MORDUKHAI- BOLTOVSKOI, Ph. D., 1953. On the ecology of the Caspian fauna in the Ponto-Azov basin. _____ Zool. Zhurn. 32: 203-211.

GREZE, I.I., 1965. On the biology of the amphipod Ampelisca diadema (A. Costa) in the Black Sea. _____ Bentos, Kiev: 3-8.

GREZE, I.I., 1966. The biology of the amphipod Amphithoe vaillanti Lucas in the Black Sea. _____ Raspredelenie bentosa i biologya donnykh zhivotnykh v yuzhnykh moryakh, Kiev: 21-31.

GREZE, I.I., 1967. The biology of the amphipod Gammarus locusta (= G. insensibilis) in the Black Sea. _____ Donnye biozenosy i biologiya bentosnykh organizmov Chernogo morya, Kiev: 91-103.

SUSHCHENYA, L. M., 1968. Elements of energy balance of Orchestia bottae M. Edw. (Amphipoda, Talitroidea)_____ Physiologicheskie osnovy ekologii vodnykh zhivotnykh ? : 52-70.

SUSHCHENYA, L.M., ? . Transformation of matter and energy in a population of Orchestia bottae M.- Edw. _____ Dokl. Akad. Nauk SSSR 176: 703-706.

GREZE, I.I. & V.N. GREZE, 1969. Relative production of populations of some amphipods from the Black Sea. _____ Zool. Zhurn. 48: 350-355.

SUSHCHENYA, L. M. & G.I. ABOLMASOVA, 1969. Caloric value of the Talitroidea inhabiting the coastline of the Black Sea. _____ Physiologicheskie osnovy ekologii vodnykh zhivotnykh 15:113-119.

GREZE, I.I., 1970. Biology of the amphipod Ericthonius difformis M.- Edw. in the Black Sea. _____ Ekologo-morfologicheskie issledovanya donnykh organismov, Kiev: 36-51.

GREZE, I.I., 1972. Growth and dynamics of a population of Pleonexes gammaroides Bate of the Black Sea. _____ Biologya morya 26: 27-39.

GREZE, I.I., 1972. Main features of the life cycle of Gammarus olivii M- Edw. in the Black Sea. _____ Zool. Zhurn. 51: 803-811.

GREZE, I.I., 1973. Feeding of amphipods in the Black Sea._____ Trofologiya zhivotnykh, Moskva: 183-205.

(See also A.N. 5-33 for a summary of another recent paper of mrs. Greze, and A.N. 5-10 for a list of available translations by Richard Shillaker. The present bibliography deals mainly with Russian papers, and I should like to suggest to our Roumanian and Bulgarian subscriber that they supplement the list with a bibliography of the work carried out in that part of the Black Sea. W.V.)

A BRIEF SURVEY OF MODERN INVESTIGATIONS ON AMPHIPODA OF THE CASPIAN SEA.

Galina M. PJATAKOVA

1. F.D. MORDUKHAI- BOLTOVSKOI and S.M. LJAKCHOV, 1972. A new amphipod species of the genus Stenogammarus (Gammaridae) in the Volga river basin. Zool. Zh. 51: 21-27. (in Russian).
S. dzjubani sp.n., a new amphipod species of the endemic Pontocaspian genus Stenogammarus, is described. The species under investigation is distinct from all the other species of the genus in a powerful armament of the urosome, a peculiar structure of pereopods I and II in which the carpus is longer than the propodus, and also in the presence of pinnate setae on the outer edge of the exopodite of uropod III. Despite the fact that S. dzjubani belongs to the Caspian autochtonous complex, it was found only in the Kuibyshev and Saratov reservoirs on the Volga river, and it has not yet been found in the Caspian Sea.

2. G.M. PJATAKOVA, 1973. Some data on reproduction and fecundity of Caspian Amphipoda. Zool. Zh. 52: 685-688. (in Russian).
In the Caspian Sea, the reproduction of amphipods begins in early spring and proceeds until late autumn; in some species mature oviferous females occur the whole year round. Individual fecundity of amphipods suffers significant fluctuations and depends directly on the size of the species and of the specimens within one species (r=0,85). The fecundity of amphipods suffers seasonal variations as well: in summer small specimens predominate with a lesser amount of eggs than during cold seasons.

3. T.V. KOVALCHUK, 1973. The ecology, biology of reproduction and production of Pontogammarus maeoticus (Sow.) and P. crassus (G.O.Sars) in reservoirs of Dnieper river.
Autoreferate of dissertation, Univ. of Kiev. (in Russian) Some data on ecology, biology of reproduction and production of two mass species of Caspian Amphipoda in reservoirs of the Dnieper river are given.

4. Jan H. STOCK, 1974. The systematics of certain Ponto-Caspian Gammaridae (Cruataçea, Amphipoda).Mitt. Hamburg. Zool. Mus. Inst. 70: 75-95. (in English).
A group of Ponto-Caspian species of Gammaridae, the Dikerogammarus-Pontogammarus-complex, is defined, and a key to the genera is provided. The diagnoses have been modified in such a way, that the taxa on generic level form more consistent units than before. For all these units a type-species is indicated, and all described species are liste Several new genera and subgenera are described, viz. Obesogammarus,

Wolgagammarus, Paraniphargoides, Compactogammarus and Uroniphargoides. Furthermore, a new limnic species, Obesogammarus turcarum, from Little Mount Ararat, Asiatic Turkey, is described in detail.

5. N.N. ROMANOVA, 1975. Quantitative distribution and ecology of Corophiids (Crustacea, Amphipoda, Corophium). Moscow Society of Nature Explorer Bulletin, 80 (3): 51-63. (in Russian).
The Caspian Corophiids are divided in three groups according to their distribution: I-species, occurring in the rivers of the Caspian basin and in the Caspian Sea, II-species, occurring in the Caspian Sea, III-species inherent to the Middle and South Caspian. The high values of the Corophiid biomass near the west and east coasts of the Middle Caspian Sea are chiefly determined by the development of Corophium chelicorne. The quantitative distribution of Corophiids in the Caspian Sea suggests that the food conditions for fishes are by far unequal in different parts of the Sea. An abrupt decline of the biomass of the Corophiids has been recently observed in the shallow waters of the Kura-Caspian region.

6. D.P. KURANDINA, 1975. Certain data on reproduction and fertility of the Caspian Gammaridae in the Kremenchug reservoir. Hidrobiolog. Zh. 11 (5): 35-41. (in Russian).
The time of Gammaridae reproduction in the reservoir, seasonal variability of their fertility, ratio of sexes, average size of males and females in different seasons of a year are found out. The designed absolute fertility of four species of Gammaridae proved to be close to the empiric values and testifies to a high reproductive ability of the Caspian forms, settled in the reservoir.

THE MAIN LITERATURE ON CASPIAN SEA AMPHIPODA

(ordered chronologically)

SARS, G.O., 1894. Crustacea Caspia, Amphipoda 1. _____ Bull. Acad. imp. Sci. St.-Petersb., Ser. 5, 1(2): 179-223.

SARS, G.O., 1894. Crustacea Caspia, Amphipoda 2. _____ Ibidem 1 (4): 343-378.

SARS, G.O., 1895. Crustacea Caspia, Amphipoda 3. _____ Ibidem 3 (3): 275-314.

SARS, G.O., 1896. Crustacea Caspia, Amphipoda, Supplement. _____ Ibidem 4 (5): 421-489.

SARS, G.O., 1897. On some additional Crustacea from the Caspian Sea. _____ Ann. Mus. zool. Acad. imp. Sci. St.-Petersb. (1897): 273-305.

STEBBING, T.T.R., 1906. Amphipoda, I Gammaridea. _____ Tierreich 21: 1-806.

SOVINSKY, V., 1904. Vvedenie v izučenie fauny Ponto-Kaspijsko-Aral'skogo bassejna, rassmatrivaemoj s točki zrenija samostojatel'noj zoogeografičeskoj provincii (Introduction to the study of the fauna in the Ponto-Aralo- Caspian basin, seen as an independent zoogeographical area). _____ Zapiski Kievskogo Obščestvo Estesttvoispytatelej 18: I- XIII, 1-487; suppl. 1: 1-193; suppl. 2: 197-216.

MARTYNOV, A.V., 1925. K poznaniju reliktovyx rakoobraznyx bassejna Nižnego Dona, ix etologii i rasprostranenija. (Contribution to the knowledge of the relict Crustaceans in the lower Don basin and their ethological distribution) _____ Ežegodnik Zoologičeskogo Muzeja Akademii Nauk 25 (1924): 1-115.

BIRSTEIN, Ja.A., 1945. Revizija sistemy kaspijskix Gammaridae. (A revision of the systematics of the Gammaridae of the Caspian Sea). _____ Doklady Akademii Nauk SSSR 50: 517-520.

DERZHAVIN, A.N., 1945. Nifarg Kaspijskogo morja (A Niphargus from the Caspian Sea). _____ Doklady Akademii Nauk Azerbajdžanskoj SSR 2(2):

DERZHAVIN, A.N., 1949. Novye formy gammarid iz Kaspijskogo morja. (New forms of gammarids from the Caspian Sea). _____ Sbornik pamjati akademika S.A. Zernova: 280-286.

DERZHAVIN, A.N., 1951. Otrjad bokoplavy-Amphipoda. (The order Amphipoda) _____ in: "Životnyj mir Azerbajdžana" Izdatel'stvo Akademii Nauk Azerbajdžanskoj SSR, Baku: 456-465.

CĂRĂUŞU, S., E. DOBREANU & C. MANOLACHE, 1955. Amphipoda forma salmaştre şi de apa dulce. _____. Fauna Republicii populare Romîne, Crustacea IV-4.

MORDUKHAI- BOLTOVSKOI, Ph.D., 1960. Kaspijskaja fauna Azovo-Černomorskom bassejne. (The Caspian fauna in the Ponto-Azov basin). _____ Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad.

MORDUKHAI- BOLTOVSKOI, Ph.D., 1961. Donnaja fauna del't Ponto-Kaspijskix rek. (The bottom fauna in the estuaries of the Black and Caspian Seas.) _____ Trudy Vsesojuznogo Gidrobiologičeskogo Obščestva 11: 136-149.

PJATAKOVA, G.M., 1962. Novye formy gammarid Kaspijskogo morja. (New forms of gammarids from the Caspian Sea). _____

Doklady Akademii Nauk Azerbajdžanskoj SSR 18 (6): 47-51.

DERZHAVIN, A.N. & G.M. PJATAKOVA, 1962. Novye vidy kaspijskix amfipod. (New species of Caspian amphipods). _____ Ibidem 18 (9): 53-57.

PJATAKOVA, G.M., 1962. Niphargoides derzhavini _____ novyj vid amfipod Kaspijskogo morja. (N.d., a new amphipod species from the Caspian Sea). _____ Ibidem 18 (11): 71-73.

PJATAKOVA, G.M., 1965. Amfipody litorali i sublitorali zapadnogo poberežja Južnogo Kaspija ot Apšerona do Astary. (Amphipods of the littoral and sublittoral zone in the Southern part of the Caspian Sea from Apšeron to Astara). _____ Avtoreferat kandidatskoj dissertacii, Baku.

DERZHAVIN, A.N. & G.N. PJATAKOVA, 1967. Novye vidy gammarid Kaspijskogo morja. (New species of gammarids from the Caspian Sea). _____ In M.A. MUSAEV et al. (eds): "Biologičeskaja produktivnost' Kurinsko-Kaspijskogo rybolovnogo rajona" Izdatel'stvo Akademii Nauk Azerbajdžanskogo SSR, Baku: 79-84

ALIEV, A.D. & G.M. PJATAKOVA, 1968. Vidovoj sostav i raspredelenie zoobentosa Srednego i Južnogo Kaspija. (Species composition and distribution of zoobenthos in this southern and central part of the Caspian Sea). _____ Izdatel'stvo "Nauka", Moskva: 80-104.

BIRSTEIN, Ja.A. & N.N. ROMANOVA, 1968. Otrjad bokoplavy, Amphipoda (The order Amphipoda) _____ In: Ja. A. BIRSTEIN et al. (eds): Atlas bespozvonočnyx Kaspijskogo morja, Moskva: 241-289.

DERZHAVIN, A.N. & G.M. PYATAKOVA, 1968. A new species of Amphipod of the genus Niphargoides from the Caspian Sea. _____ Crustaceana 15: 98-100.

ALIEV, A.D. & G.M. PYATAKOVA, 1969. Bentos vostočnogo poberež'ja Srednego Kaspija i ego sezonnaja dinamika. (The benthos at the eastern coast of the central Caspian Sea and its seasonal dynamics). _____ Gidrobiologičeskij Žurnal 5 (3): 71-75.

MORDUKHAJ- BOLTOVSKOJ, F.D. & S.M. LJAXOV, 1972. Novyj vid amfipod roda Stenogammarus (Gammaridae) v bassejne Volgi (A new amphipod species of the genus Stenogammarus in the Wolga basin). _____ Zoologičeskij Žurnal 51: 21-27.

PJATAKOVA, G.M., 1973. Nekotorye dannye o rozmnoženii i plodovitosti kaspijskix Amphipoda. (New data on reproduction and fecundity of Caspian Amphipoda). _____ Ibidem 52: 685-688.

STOCK, J.H., 1974. The systematics of certain Ponto-Caspian Gammaridae (Crustacea, Amphipoda). _____ Mitt. Hamburg. Zool. Mus. Inst. 70: 75-95.

ROMANOVA, N.N., 1975. Količestvennoe raspredelenie i ėkologija korofiid (Crustacea, Amphipoda, Corophium) Kaspijskogo morja (Quantitative distribution and ecology of the corophiids of the Caspian Sea). _____ Bjulletėn' Moskovskogo Obščestva Ispytatelej Prirody, Otdel biologičeskij 80: (3): 51- 63.

(As received, the Russian papers in Pjatakova's list were cited in Cyrilli characters. The transcription and translation have been carried out in Tromsø. For the transcription the international scientific connotation was used, but I changed back the more common author's names to the more familiar English transcription).

REQUESTS FOR INFORMATION etc.

Reprints on planktonic amphipods

I am presently engaged in the study of the vertical distribution of planktonic amphipods in the Hilutungan Channel of Cebu, Philippines, for my thesis. I hope to finish my thesis by April, 1976. In this connection, I would highly appreciate if you can send me reprints which I could use for my thesis. It is very difficult to secure literature on planktonic amphipods here in our country, I would be grateful for whatever reprints you can spare me.

Paciencia C. SIA
c/o Biology Department
University of San Carlos
Cebu City 6401
Philippines

(Miss Sia also hopes to find a specialist who is willing to verify her identifications).

Sex pheromones

I am a research assistant investigating sex pheromones in marine and freshwater gammarids. I would be interested to hear from anyone

working in this field, and particularly from anyone with results concerning the role of short range cuticular pheromones.

Steve SMITH
Marine Biological Station
Port Erin, Isle of Man
U.K.

NEWS FROM COLLEAGUES

The first 11 items under this heading were collected and sent in by Les Watling, together with the subscription money. A good idea, which I hope will be adopted by Drs Taniguchi and Williams, and by those colleagues from western USA, Canada, India, the USSR, and maybe also France and Britain which I hope will soon volunteer as regional collectors and correspondents.

Ken BYNUM: Richard Fox and I have a couple of papers coming out late this year or next year, one a faunistic paper on N.C. estuarine amphipods, intended to help the non-specialist deal with the local fauna, and the other a description of several new species from North Carolina. I am currently studying the life cycle and morphological development of Carella penantis. Preliminary results indicate that there are two distinct forms of the species in North Carolina, a gracile, protected water form and a robust form characteristic of exposed sites with heavy wave action. I am currently looking at their distribution, morphology and relationship to other members of the group of morphologically very similar species to which C.penantis belongs. Also working generally on the life cycle of other local caprellids.

David CULVER: My major interest in amphipods is interspecific competition and community structure, especially in subterranean streams.

Richard S. FOX: Relationships of local Corophium distribution to salinity; Faunistics of Southeastern U.S. marine amphipods.

Tom GLENNON, Jr.: I have just begun working with amphipods, having spent the last two years identifying animals taken with varying sampling techniques in the Gulf of Maine. I work for Normandeau Associates, an environmental consulting and research firm based in New Hampshire.

Dr. John R. HOLSINGER: Copies of my 1967 monographic revision of the subterranean amphipod genus Stygonectes (U.S. National Museum Bulletin 259) are still available and can be obtained free by writing me.

W.S. JOHNSON: I am just beginning to study the population dynamics and energetics of the caprellids of Chesapeake Bay region.

L.D. McKINNEY: I am presently working on the epifaunal amphipods of the western Gulf of Mexico from Sabine Pass, Texas, to Yucatan, Mexico. Currently I am working up the 1960 Smithsonian-Bredin Expedition to Yucatan. I have discovered numerous new species and several new genera among this material.

Allan D. MICHAEL: In doing some experimental work on the effects of oil on Haustoriids we found that the most abuncant species at Black Beach where Sameoto worked was Neohaustorius schmitzi. We have checked a reference collection of the material Sameoto actually worked on and his collections of N. biarticulatus are mixtures of these two species with N. schmitzi predominant. This does not alter the overall conclusions about niche separation but any of the specific data on N. biarticulatus (size, egg nr. etc.) cannot be considered correct.

Herman O. SANDERS: The effects of forest insecticides on growth and reproduction of Gammarus spp.

K.John SCOTT: I have recently completed my thesis on the ecology of the sand-burrowing lysianassid, Psammonyx nobilis. My present work involves studies on effects of low level temperature elevations on fouling and mud-bottom communities of southern New England.

Sidney S. SLOCUM, Jr.: Population study of Jassa falcata.

H.-P. BULNHEIM: The following paper is in the press: "Gammarus tigrinus, ein neues Faunenelement der Ostseeförde Schlei" (Schr. naturwiss. Ver. Schlesw.- Holst.)

Bob COOPER: I am plucking up courage to work on some Antarctic Oedicerotids and have just finished a paper on "Platyischnopus".

Peter JUMARS: My work is of a general ecological nature, but amphipods are usually second in numerical importance only to Polychaeta in the mud communities that most interest me. Also, I am now advising a student who works on beach amphipods associated with surf zone diatoms.

Ahmet KOCATAŞ: Turkish Research Council has recently selected me for a project related to the collection of marine Amphipoda from Turkish waters.

Yuk Maan LEUNG: I am writing two papers on amphipods: The mystery of Cyamus rhytinae (Amphipoda: Cyamidae), a whale-louse of the extinct sea cow" and " Life cycle of Cyamus scammoni (Amphipoda, Cyamidae), ectoparasite of the Gray Whale, with a remark on the associated species". I hope they will be completed soon.

Brad MYERS: I have been working on microcrustacea from the southern California area for about three years with my main emphasis on Ostracoda, Cumacea, and Amphipoda. I am currently involved in a taxonomic standardization program thru which we are attempting to standardize the level of taxonomic expertise at different universities, museums, agencies and private consulting firms throughout the southern California area. This program will make data more accurately comparable as well as allow local systematists to maintain contact and keep informed of work being done.

Adèle WILLIAMS: My research, as a research student under supervision of Colin Little, concerns ionic regulation in Gammarus pulex and G. chevreuxi.

MAJOR AMPHIPOD COLLECTIONS

The empty space on the upper half of p. 12 in A.N. 6 was meant to contain the contribution in this series of Ed Bousfield, but by some unexplained lapsus I must somehow have forgotten to put it in. Since then I have succeeded in collecting a further 5 contributions, with at least two more (Amsterdam and Hamburg) to follow in A.N. 8.

Forschungsinstitut Senckenberg, Frankfurt am Main

Der wohl bedeutendste Teil unserer kleinen Amphipoden-Sammlung istdie Ausbeute Kohl-Larsen von der Subantarktischen Inseln, da diese Sammlung von Stephensen bearbeitet und 1938 publiziert wurde (Senckenbergiana 20: 236-264). Eine weitere systematische Aufsammlung ist durch Dörjes geschehen der die Ökologie der Watten von Sapelo Island (Georgia, USA) untersuchte. Seine Ergebnisse (mit Artenliste) sind publiziert in Senckenbergiana marit. 4, 1972, 183- 216. Ausserdem besitzen wir eine kleine sammlung des Mittelmeers und des gemäszigten N-O Atlantik, und einige Proben aus Kanada, Magellan, Neu-Seeland, Rotes Meer, El Salvador und den Aru- Inseln.

Michael TURKAY
Crustaceensektion

British Museum (Natural History), London

Collection: A synopsis of the more important accessions to the amphipod collection has already been published in the Museum Bulletin (Thurston, M.H. & Allen, E. 1969. Bull. Br. Mus.nat. Hist. (Zool.) 17 No 9) as the introduction to the type-catalogue of the families of Lysianassidae, Stegocephalidae, Ampeliscidae and Haustoriidae. It will

take many years to document the entire Crustacea collection, and it is our intention that small type-catalogues will be published as the work progresses.

Loans: The following regulations govern the loan of specimens: Before a loan can be despatched the Section must have received a signed Agreement form from the addressee. This form is only required once. Type and figured specimens are given special approval, and are loaned for a period of 6 months. This can only be extended by special permission. The initial loan period for other material is usually 12 months.

In all cases requests for loans, or extensions of existing loans, should be sent to me and I shall be happy to respond to your applications. It does make life easier for me if requests for extensions of loans are sent before the loan is overdue for return, thus avoiding a string of reminders as is often the case.

Dr. Roger J. LINCOLN
Head of Crustacea Section

Zoologisk Museum, Oslo

As many amphipod specialists already know the Zoological Museum, University of Oslo, houses a major part of Professor G.O.Sars' amphipod collection. Georg Ossian Sars (1837-1927) worked at the University of Oslo from 1870 to 1918, from 1874 as professor of zoology. He will always be regarded as one of the most outstanding Norwegian zoologists and has published papers on nearly every animal group. In later years, however, Sars devoted his work almost entirely to Crustacea, and continued his studies until a few days before he died, nearly 90 years old. For many years he travelled along the Norwegian coast and through the inland areas collecting material, and he was one of the leaders of the Norwegian North-Atlantic Expedition 1874-76. Sars also received material from all over the world and he described a large number of new species; among them many amphipods.

Besides Sars' collection, amphipods described by A.Boeck are also deposited in the Oslo Museum. Unfortunately, neither Sars nor Boeck labelled their new species as type material and, since no amphipod specialist has ever worked in the Oslo Museum for a longer period, many of the type species are still not registered as type.

Many amphipod specialists have in later years borrowed material from the Oslo Museum for study, and this loan policy will also be followed in the future. In this way we hope to further the systematic

revision of the amphipods.

Marit E. CHRISTIANSEN
Department of Invertebrates
Zoological Museum
University of Oslo
Sars gt. 1,
Oslo 5
Norway

Museum of Natural Sciences, Ottawa

I would like to reaffirm that the Canadian National Collection of amphipod crustaceans is avalaible for use and for loan to any qualified worker in the group on request. Our curatorial policy includes the loan of primary type specimens at the discretion of the curator concerned. The Canadian National Collection is especially rich in material from Canadian Atlantic, Pacific, Arctic and fresh-water habitats, and world-wide in scope in several groups, especially Gammaroidea, Haustorioidea, Talitroidea, and Caprellidea. We welcome the interest of colleagues in depositing amphipod material, especially primary type material, in the Canadian National Collection.

Ed BOUSFIELD

Naturhistoriska Riksmuseet, Stockholm

Like most of the invertebrates kept in our section of the Swedish Museum of Natural History the amphipods are divided into a "Scandinavian" and a "foreign (exotic)" collection. The former collection contains about 12.000 samples, the main part of which is identified by Hugo Oldevig. The amphipod fauna around Spitzbergen and Greenland is here well represented thanks to various Swedish expeditions to the arctic waters during the period 1870-1910.

With reference to our "foreign" collection- about 4.000 samples-especially the rich amphipod material from the Swedish Antarctic Expedition 1901-03 may be noted. In 1931 A. Schellenberg published his paper on gammarids and caprellids from this expedition (Further Zool. Res. Swed. Ant. Exp. 1901-03, vol. 2, no. 6), whereas up to now only a part of the hyperiids- about 230 samples- has been identified. So by this note we are now waiting for a specialist, who is willing to work up our collec-

As to our loan policy I will inform that we generally also send our type specimens on loan.

Roy OLERÖD
Section of Invertebrate Zoology

Museo Civico di Storia Naturale, Verona

The amphipod collections of the Museo Civico di Storia Naturale (Lungadige Porto Vittoria 9, I-37100 Verona, Italia) started from some Mediterranean and Red Sea collections brought to the Museum by Sandro Ruffo in 1946. The same author has gradually enriched the collection by his own collecting activity, that of this collaborators in the project of the "Handbook of Mediterranean Amphipoda", by exchanges and by collections sent in for identification. Two acquisitions have been especially important:

1. The collection of Antonio Della Valle on which this well known specialist has based his famous 1893-monograph of the 'Gammarini del Golfo di Napoli', containing most of his types.
2. The Niphargus-collection of Umberto d'Ancona.

At the moment the collections of the Verona museum count about 750 species (mostly of Italian freshwater biotopes, the Mediterranean and the Red Sea). There about 150 types or syntypes (of Della Valle, Ruffo, and of the present group of co-workers on the Handbook project (Bellan Santini, G.Karaman, Krapp-Schickel, Myers, Schiecke and Vader). The alcohol material is nearly completely identified and indexed. The collection contains also about 1000 microscopic slides, also indexed. All this material is available on loan to specialists.

The collections of the Verona museum are of particular importance for the amphipod faunas of the Mediterranean and Red Seas and for Italian freshwater habitats (both superficial and subterranean).

Sandro RUFFO

THE COLLAR CILIATES OF AMPHIPOD
or
WHO INVERTED THE CHONOS TREE ?

(title by W.V)

John Luther MOHR

I am grateful for the opportunity the amphipod newsletter provides to go over some of the underlying differences in outlook between Anatol Jankowski and us southern Californians on the collar ciliates of amphipods and other crustaceans. We consider the crustacean host group (and particularly the amphipods) and their biology to be only moderately well known. The collar cilate protozoans (chonotrichs), although better known than they were 30 years ago, are still known only from the work of a few people and from a few places mostly in the northern hemisphere; that is, they are much less well known than their hosts. Almost all the work on them has been done on preserved rather than on living materials (and this does make a real difference, particularly with the chilodochonine series), Fenchel's studies being perhaps the important exception. Conclusions on the present limited evidence must be very provisional.

As to those conclusions (and probably most of them are of little interest to amphipoders), we believe for reasons we shall pursue elsewhere that features of ciliate morphology, of crustacean host morphology and physiology, and of distribution of hosts and chonotrichs do not support Jankowski's dividing the chonotrichs primarily into those without (exogemmans) and those with (endogemmans) a bud-pouch; rather we hold that Wallengren's (1895) separation into spirochonines (relatively simple-collared forms now known from amphipods, isopods, nebalids, Balaenophilus and in a solitary case from a marine alga of Tristan da Cunha) and chilodochonines (big- and flexible-lipped forms of crabs, anomurans, macrurans, shrimps and mysids) is the fundamental division. If we are right in this, the probable age of the chonotrich group is greater than Anatol suggests.

In these particular reflections we have come to disagree with our old friend and frequent benefactor, Jerry Barnard, about the probable evolutional position of gammarines. These have a nearly uninterrupted distribution in a holarctic "heartland" ("land" being here the inshore and inland water continuum). Using the reasoning of vertebrate paleontologists, we think that old groups may have survivors at the limits of spread or in various patches within the full range-through-time, but an old group (at least this seems to be true for higher vertebrates since the late Caenozoic) does not survive throughout its range. If the gammarines are basic are they an exceedingly young group? If amphithoids and other gammaridean families are even younger, how have they been able to spread widely to places where gammarines have not been found? Is the thinking unduly influenced by the northern base of most of the workers

and is the southern sampling still inadequate?

Our thinking here has been prodded by impressions that the collar ciliates on amphithoids and some other non-gammarine amphipods have more generalized features than do those on gammarines (in which again we disagree with Anatol). Even if we should be right about the chonotrichs, one must not make conclusions about the amphiped relationships on that basis, but it is true that from time to time parasite distributions give rise to useful questioning about composition of host taxa.

LIST OF SUBSCRIBERS (SUPPLEMENT'5)

Changes of address

74 Not G, but S. Husmann

226 Peter Jumars. New address: Dept of Oceanography, WB-10, University of Washington
Seattle, Wa. 98195
U.S.A.

91 Donald E. Keith. New address: Dept of Biological Sciences, Tarleton State University,
Stephenville,
Texas 76402
U.S.A.

26. Marion van Maren. (?) Temporary address (until summer 1976):
(New Subscriber)
c/o Université
Cl. Bernard (Lyon 1)
Biologie Animale et
Zoologie, F 69621
Villeurbanne, France

125 Christiane Morand. New address: E.N.S.A.I.A., 30-bis rue Ste Catherine,
F-54000 Nancy, France

127 Hiroshi Morino. New address: Dept of Biology, Ibaraki University
Mito, 310 Japan

New subscribers

252 Sergei Cărăuşu, Facultatea Biologie-Geografie, Laborator de Hidrobiologie, Universitatea Iaşi, Iaşi, Romania.

253 U. Franke, Limnologisches Institut, Meinaustr.212, 775 Konstanz-Egg, BRD.

254 Yoshiako Hirano, Mukaishima Marine Biological Station, Mukaishima-cho, Onomishi P.O, Hiroshima-ken, Japan.

255 Ahmet Kocataş, Ege Üniversitesi, Fen Fakultesi, Genel Zooloji Kürsüsü, Bornova, Izmir, Turkey.

256 David McGrath, Dept of Zoology, University College, Galway, Eire.

257 Brad Myers, Southern California Coastal Water Research Project, 1500 East Imperial Highway, El Segundo, Cal. 90245, U.S.A.

258 Kizo Nagata, Nasei Regional Fisheries Research Laboratory, 6-1-21, Sanbashi-dori, Kochi 780, Japan.

259 Adèle Williams (♀), Dept of Zoology, University of Bristol, Woodland Road, Bristol, Avon, England.

BIBLIOGRAPHY

In spite of the customary good help of Claude De Broyer, Iraida Greze and Jan Stock, this bibliography is probably more incomplete than usual, as I have been away from Tromsø a good deal this autumn. Please let me know if I have overlooked your 1975-papers.

Unfortunately, for various reasons (postal strike, translator's illness) reviews of the monographic papers of Tzvetkova (by Jan Stock) and Vasilenko (by Diana Laubitz) have not reached me in time for this issue. In the case of Dr. Hamoud's thesis, Roux has been so kind to provide a summary "by returning post" almost.

Peter Slattery has suggested to print the bibliography in two columns per page, so that one can cut out and past them on cards directly. This has hitherto been impossible for economic reasons, but I'll keep it in mind.

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gammarus and Mesogammarus, which will be reviewed separately)
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HAMMOUD, W., 1975. Diss. Univ. Lyon, see p.24 . Dr. Roux has kindly sent me the following summary of this thesis. "La recherche de substances sexuellement attractives a été effectuee dans l'urine, l'hemolymphe, les sécrétions tégumentaires, les broyats et les rejecta de Gammarus pulex et G. fossarum. Les tests biologiques montrent que l'urine des femelles renferme une substance sexuellement attractive pour le mâle. Il est difficile de préciser la nature exacte de l'attraction exercée par l'hemolymphe, qui est peut-être de nature alimentaire. L'ecdysterone peut jouer le rôle de phéromone sexuelle.

Divers tests laissent penser que la substance attractive émise par la femelle pourrait être de nature lipidique. Une fraction lipidique particulière n'existe que chez les femelles attractives. Le poids des lipides totaux extraits des femelles attractives est supérieur à celui des lipides totaux des femelles non attractive".

(Similar summaries of other, e.g. British, unpublished theses will be much appreciated. W.V.)

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KITITSYNA, L.A., 1975. (Intensity of Pontogammarus robustoides (Grimm) nutrition at various temperatures). _____ Hidrobiol. Zhurn. 11 (-?): 51-57. (In Russian, English summary. Not seen)

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SWANSON, G.A. & W.H. THORNSBERRY, 1975. A circular chamber for counting benthic invertebrates. _____ Trans. am. Fish. Soc. 104: 406-407.

TRUCHOT, J.P., 1974. Crustacés Amphipodes. _____ Pp. 19-23 in "Invertebrés de l'Infralittoral rocheux dans l'Archipel de Kerguelen 3", C.N.R. F.A. 35 (Not seen. 11 species of well known Kerguelen amphipods).

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LAST MINUTE ADDITIONS

News from colleagues:

Roy OLERÖD: The following paper is in the press. "The mouthparts in some North Atlantic species of the genus Orchomene Boeck (Crustacea, Amphipoda)", Zoologica Scripta 4. In this paper the structure of the mandibular molar of 5 Orchomene species, Orchomenella minuta and Orchomenopsis obtusa is studied with the aid of the scanning electron microscope.

Les WATLING: I am currently working on peracarids collected by the Virginia Institute of Marine Science on the continental shelf and upper slope along the east coast of the United States between 38 and 40°N. These samples are being collected at 28 stations (6 replicates per station). Sixteen of the stations are being sampled quarterly, and the remainder twice a year.

New Subscriber:

260. K.R. Seshagiri Rao, Dept of Zoology, AUPG. Centre, Gunter- 5, India.

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BRADFORD, J.M., 1975. New parasitic Choniostomatidae (Copepoda), mainly from Antarctic and Subantarctic Ostracoda. _____ Mem. N.Z. oceanogr. Inst. 67: 1-36 (Sphaeronella grayi n.sp. from Liouvillea sp. from off S. America, besides 14 new Sphaeronella spp plus Sphaeronelloides vargulae n.gen.n.sp.all from Ostracoda. On p.9 a list of described Sphaeronella species is given, arranged according to host and certain morphological characters. From the bibliography I note the following paper: W.S. GRAY, in press. Family Pleustidae as represented in Antarctic and subantarctic

waters, with a proposed revision. Antarctic Research Series.)

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GABLE, M.F., 1972. The salt marsh amphipod Gammarus palustris Bousfield, 1969, at the northern limit of its distribution: 1. Ecology 2. Temperature- salinity tolerance._____Ph. D. thesis, Univ. of N. Hampshire, 190 pp. (Not seen).

KLEIN, G., E. RACHOR & S.A. GERLACH, 1975. Dynamics and productivity of two populations of the benthic tube-dwelling amphipod Ampelisca brevicornis (Costa) in Helgoland Bight. _____ Ophelia 14: 139-160.

LEVINGS, C.D., 1975. Analyses of temporal variation in the structure of a shallow-water benthic community in Nova Scotia._____ Int. Rev. ges. Hydrobiol. 60: 449-470.

MAREN, M.J. van, 1975. The biology of Chaetogammarus marinus (Leach) and Eulimnogammarus obtusatus (Dahl) with some notes on other intertidal gammarid species (Crustacea, Amphipoda)._____ Bijdr. Dierk. 45: 205-224.

VAN DOLAH, R.F., L.E. SHAPIRO & C.P. REES, 1975. Analysis of an intertidal population of the amphipod Gammarus palustris using a modified version of the egg-ratio method._____ Mar. Biol. 33: 323-330.

WATLING, L., 1975. Parametopella inquilinus, new species from Delaware Bay oyster beds (Amphipoda: Stenothoidae)._____ Proc. biol Soc. Wash. 88: 429-432.

News from colleagues

Marion van Maren: "At the present time I am working on the role of gammaridean Amphipoda as intermediate hosts for worm-parasites of aquatic Vertebrates. Especially I am interested in the specificity of the parasites in relation to their amphipod hosts. The gammarids as well as the fishes that I am working on come from the River Rhône and its tributaries. Until now I have found many specimens of Gammarus fossarum and Gammarus pulex containing Acanthocephala-larvae, and less frequently, Cestoda-larvae. Furthermore I examine the stomach contents of benthos-eating fishes and look for parasites in the intestine. In future, when Acanthocephala-eggs are available, I would like to try to infect different gammarid species to see if these worms show a narrow or wide specificity towards their intermediate hosts. Moreover I want to look at modifications in the behaviour of the parasitized Amphipod hosts, compared to not infected specimens. Any suggestions or advices about this topic are very welcome".