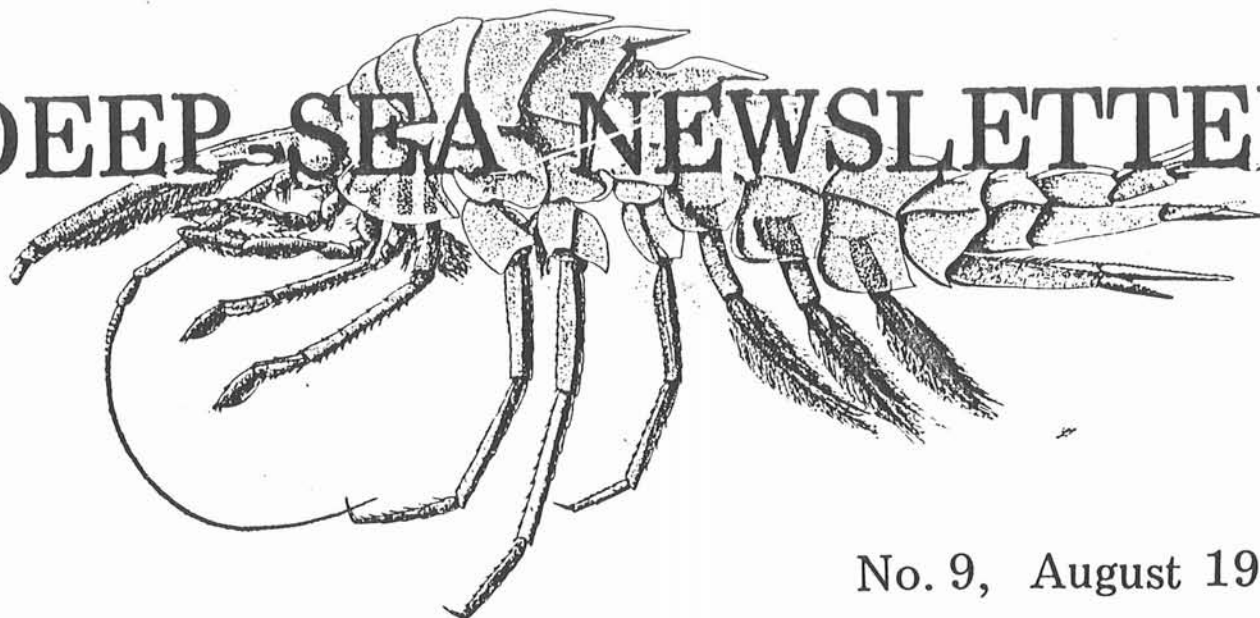


DEEP SEA NEWSLETTER



No. 9, August 1984

Second Deep-Sea Biology Symposium

Second Announcement

- TIME:** June 23-29, 1985
- PLACE:** Katholische Akademie, Herrengraben 4, D-2000 Hamburg 11
- SYMPOSIUM OFFICE:** For all mail: Institut für Hydrobiologie und Fischereiwissenschaft
Universität Hamburg
Zeiseweg 9, D-2000 Hamburg 50, FRG
- During the Symposium the office will be at the Katholische Akademie.
- SYMPOSIUM FEE:** 100,00 Deutsche Mark.
- We hope to succeed in raising some funds for this symposium to possibly reduce the symposium fee and the costs for the mid symposium tour.
- INTEREST IN THE SYMPOSIUM:** Following the first announcement in Deep-Sea Newsletter 7 and a report in Deep-Sea Newsletter 8 almost 100 scientists from 16 countries indicated their interest in participation so far, and we expect about 150 participants for the symposium. Until now 41 papers are offered for presentation and 13 short communications. Not all potential participants have answered the first announcement, and further applications are expected.
- TOPICS:** Papers and short communications may address all questions of Deep-Sea Biology.
- The first two days will be mainly devoted to environmental problems introduced into the deep sea from human impact. Within this frame we expect to receive contributions on
- human impact measured in deep-sea environments,
 - results from industrial tests impacting the deep sea,
 - discussions on potential human impact from developing actions,
 - reports on national policies to avoid harmful impacts,
 - proposals for international regulations to assure impact minimization and deep-sea protection.
- PAPERS:** For each paper we will allow 20 minutes plus 5 minutes for discussion. A short communication shall take not more than 10 minutes.
- All papers will be evaluated by a screening process based on the abstracts delivered.

- ABSTRACTS:** We urge all contributors to prepare hard data abstracts which readily allow to understand the contents and results of the paper to be presented. General philosophy on a potential paper will be rejected. Abstracts should not cover more than one type-written page.
- POSTERS:** Boards will be available for poster presentations. In case too many papers are offered we may have to ask contributors to present their results as a poster.
- LANGUAGE:** All presentations will be in English. No translation service will be available.
- PUBLICATION:** The publication of a book containing some of the symposium contributions was emphasized earlier. I contacted Springer-Verlag, Heidelberg. This company might be interested in printing such a book of 300 pages maximum. We all know about the trouble of editing and waiting for symposia volumes. If enough contributors wish to publish in a common volume, I will take the responsibility of editing. Those of you interested must indicate this in the application form and must deliver the manuscript during the symposium. On the basis of the respective abstracts I shall contact Springer-Verlag and inform all interested authors about the decision. Springer will publish the symposium volume only on the condition that the complete revised manuscripts will be presented three months after the symposium at latest which will guarantee publication of the book one year after the symposium.
- TECHNIQUES:** The lecture hall is equipped with normal slide projector (5 x 5 cm) and overhead projector. If any other technique is needed, please indicate this on the application form.
- PREPARATORY TIME SCHEDULE:** Applications and abstracts are to be sent to the Symposium Office not later than February 15, 1985. Paper acceptance/rejection will be communicated to the authors not later than April 1, 1985.
- SYMPOSIUM TIME SCHEDULE:** Sunday, June 23: Arrival of participants. Pre-symposium gathering in the evening.
Monday, June 24 and Tuesday, June 25: Contributions on the topic "Human impact and deep-sea protection".
Wednesday, June 26: Presentations on Deep-Sea Biology.
Thursday, June 27: Mid-Symposium Excursion (see below).
Friday, June 28 and Saturday, June 29: Presentations on Deep-Sea Biology.
Sunday, June 30: Departure of participants.
- ACCOMMODATION:** 80 participants can be accommodated in the Katholische Akademie, however, there are only 6 single rooms and 37 double bedrooms.
We ask you for a double choice indicating your first and second priority by marking accommodation (1) or (2) on the application form.
- FINAL APPLICATION:** We ask you to send us before February 15, 1985
1. the attached application form completed, and
2. the abstract of your contribution.
Please address all mail to SYMPOSIUM OFFICE!
- MID-SYMPOSIUM EXCURSION:** A symposium with five days of lectures and discussions is too long in one run and it calls for a break in the middle. The replies to our announcement I strongly recommend a bus tour to Hansestadt Lübeck and south-eastern Schleswig-Holstein, the northernmost of the German states. Lübeck is a mediaeval town little more than one hour's drive from Hamburg, and we shall guide you around to show you buildings from the Hanse time. We shall have a typical local lunch from the Schiffergesellschaft (shippers' club) where seamen met in those early days. The afternoon will be devoted to land and landscape south of Lübeck.

Hjalmar Thiel

A Meeting for Nordic deep-sea biologists

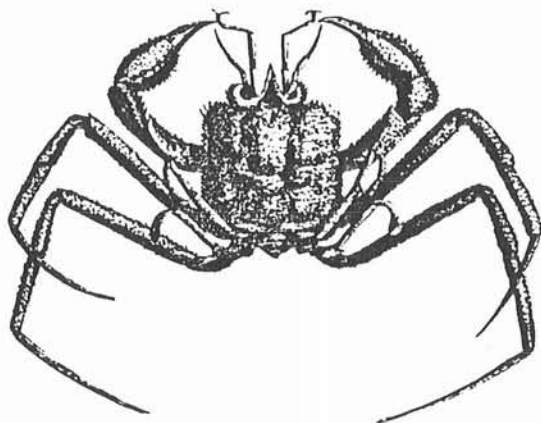
The Nordic countries have great traditions in the study of the deep sea, in the North Atlantic as well as elsewhere.

In recent years there has been a revival of former activities in the deep North Atlantic (French-Swedish NORBI Expedition on "Jean Charcot" 1975, Danish participation in FRAM I 1979, the Swedish YMER Expedition in 1980, and Nordic participation at present in MIZEX.

Three Nordic vessels are well equipped for work in the deep sea (the Norwegian "Håkon Mosby" and "Johan Ruud" and the Danish "DANA IV"). There is now an opportunity for other Nordic marine scientists to be invited to participate in Norwegian research in the North Atlantic. Moreover, the European Marine Biological Symposium in Plymouth in September this year and the Hamburg Symposium in June 1985 will provide opportunities for Nordic scientists to meet and discuss with many of the world's leading deep-sea biologists.

This is the background for a meeting which on the initiative of T. Brattegard (Bergen) and J.-O. Strömberg (Kristineberg), will be held at the University of Bergen in mid-December 1984 to discuss and coordinate future Nordic research efforts, hopefully in cooperation with other interested countries.

Torben Wolff



The Deep-Sea Newsletter Correspondents and Distributors

- CANADA: Dr. Eric L. Mills, Institute of Oceanography, Dalhousie University, Halifax, Nova Scotia, B3H 4J1.
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- HOLLAND: Dr. Jaap van der Land, State Museum of Natural History, Raamsteeg 2, Leiden.
- JAPAN: Dr. M. Horikoshi, Ocean Research Institute, University of Tokyo, Minamiday 1-15-1, Nakano-ku, Tokyo 164.
- NORWAY: Dr. T. Brattegard, Biological Station, University of Bergen, N-5065 Blomsterdalen.
- SWEDEN: Prof. J.-O. Strömberg, Kristineberg Marine Biological Station, S-450 34 Fiskebäckskil.
- UNITED KINGDOM: Dr. Tony Rice, Institute of Oceanographic Sciences, Wormley, Godalming, Surrey GU8 5UB.
- U.S.A.: Dr. R.R. Hessler, Scripps Institution of Oceanography, A-002, La Jolla, California 92093
- U.S.S.R.: Dr. Nina Vinogradova, Institute of Oceanology, Academy of Sciences, 23 Krasikova Street, Moscow 117218.

First Announcement
THE OCEANOGRAPHY OF THE ROCKALL CHANNEL
A Symposium
organized by
the Royal Society of Edinburgh
and
the Scottish Marine Biological Association
to be held in the Wolfson Theatre and Rooms of the
Royal Society of Edinburgh, 22 George Street, Edinburgh
on
27 - 29 March 1985

The programme, that will be made up of both invited papers and poster presentations on the Geology, Hydrography and Biology of the Rockall Channel, will be followed by a Multidisciplinary Workshop on 29 March. Attendance at this Workshop will be by invitation only and the total number of participants will be limited to 40. Active workers interested are asked to contact Dr J. D. Gage at the Dunstaffnage Marine Research Laboratory, Scottish Marine Biological Association, P.O. Box 3, Oban, Argyll PA43 4AD.

Those wishing to present posters at the Symposium are also invited to contact Dr Gage.

The proceedings of the Symposium will be considered for publication as a volume of the **Proceedings of the Royal Society of Edinburgh, Section B.**

Further details of the Symposium Programme, together with a Registration Form and details of accommodation available to participants, will be circulated in a second announcement in the course of the summer.

Those wishing to attend the Symposium are asked to fill in the form below.

The Meetings' Secretary,
The Royal Society of Edinburgh,
22, 24 George Street,
Edinburgh EH2 2PQ

THE OCEANOGRAPHY OF THE ROCKALL CHANNEL

I wish to receive further details of the Symposium and a Registration Form.

Name

(BLOCK CAPITALS)

Address

.....

Organisation

I N M E M O R I A M

Dr. Zinaida A. Filatova 1905-1984

The sad news have reached us that the prominent Russian deep-sea biologist Zina Filatova died on 11 June 1984 in Moscow, aged 78.

She was born on 8 October 1905 and worked for most of her life in the Laboratory of Benthos at the P.P. Shirshov Institute of Oceanology in Moscow, being the closest disciple and assistant of Professor L.A. Zenkevitch. After his death she succeeded him as head of the laboratory until she retired in 1979, but she continued work there until the day before she died.

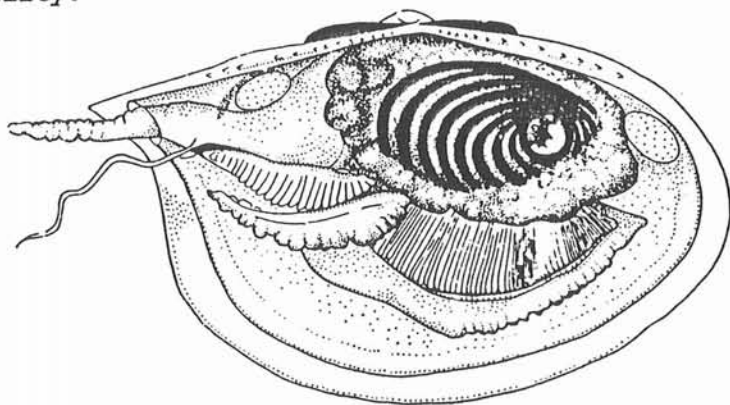
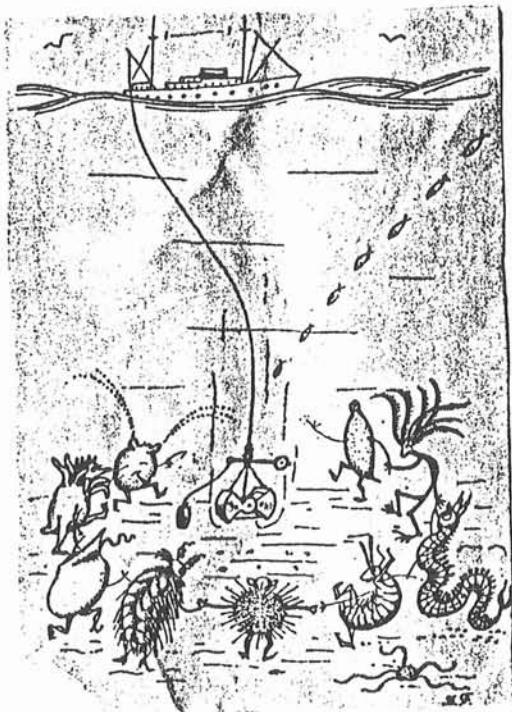
Zina's interests as an oceanologist covered a wide field. Most of her more than 120 scientific papers are concerned with the taxonomy and distribution of molluscs, including major papers on bivalves and gastropods from the northern seas of the USSR, the structure and phylogeny of abyssal and hadal bivalves, and new findings of Monoplacophora. Others deal with the origin and antiquity of the deep-sea fauna, the quantitative distribution of animals in the deep sea - and a taxonomic revision of Tardigrada. She was a gifted artist who illustrated most of her own papers.

I first met Zina at the Zoological Congress in London in 1958 and renewed the acquaintance a year later during the first Congress of Oceanography in New York. In those days the community of deep-sea biologists was quite small, and those present in New York had one happy get-together after the other, enjoying Russian hospitality, caviar and champagne. When I have later visited Moscow (e.g. during the next oceanographical congress in 1966) I was always invited to visit Zina and her husband in their apartment. She was extremely faithful in writing letters and often sent telegrams from remote places when participating in expeditions, mainly on the "Vitjaz".

Zina is one of the kindest and most considerate persons I have known, and like her many other friends and colleagues I shall miss her cordial, even affectionate friendliness.

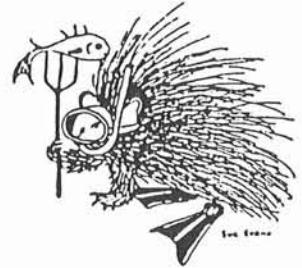
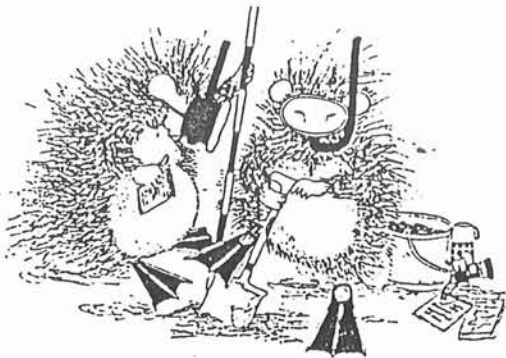
Torben Wolff

Examples of Zina Filatova's drawing ability:



Spinula (Bathyspinula) oceanica Filatova
(2074-6272 m)

Her impression of the work of the bottom-sampler "Ocean-50"



Porcupine Newsletter

You may be aware of the fact that amongst several newsletters devoted to marine science there exists one of particular interest to the readers of the present newsletter. This is the PORCUPINE Society to Promote Interest in Marine Fauna and Flora of the



rived from the surveying vessel 1870 on scientific expeditions terranean. There are now about Society holds annual meetings and publishes the Newsletter. contributions to the two latest

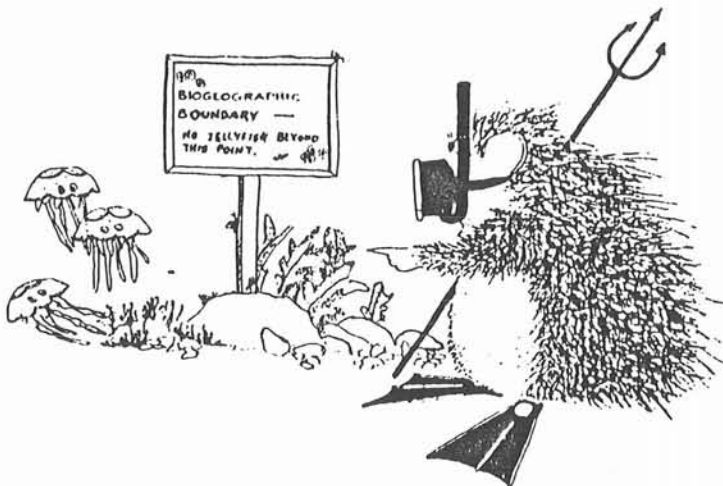
The following selection of issues (vol.2, No.10 and vol.3, No.1) indicates its relevance to deep-sea biologists:

- G. Bowes, T. Scoffin & S. Smith: Co-ordination of geological and biological sampling of the Porcupine Bank.
- J.D.M. Gordon: Sampling the deep-sea demersal fish of the Rockall Trough.
- P. Barnett & J. Watson: Coring for meiofauna.
- R. Harvey: Sampling deep-sea invertebrates in the Rockall Trough.
- P.F. Kingston & N. Lunan: New bottom sampler for offshore benthic monitoring.

In addition there are articles on shallow water, specific animal and plant species, marine labs in N.W. Europe, notices, letters, meeting reports, etc. The Newsletter is further enlightened with charming sketches of the Society's mascot(s).

The Annual Subscription is £3 and may be ordered from the Editor, Frank Evans, Dove Marine Laboratory, Cullercoats, North Shields NE30 4PZ, England, or the Secretary, Shelagh M. Smith, Royal Scottish Museum, Chambers Street, Edinburgh EH1 1JF, Scotland.

Torben Wolff



Deep-Sea cirrate octopuses observed from a submersible

In the summer of 1982 the R/V "Akademik Mstislav Keldysh" of the P.P. Shirshov Institute of Oceanology made her 4th cruise in the North Atlantic to conduct geological and biological investigations on the Mid-Atlantic Ridge southwest of Iceland. Many deep dives were made with the manned submersible "Pisces" on the Reykjanes Ridge at ca. 58°30'N.

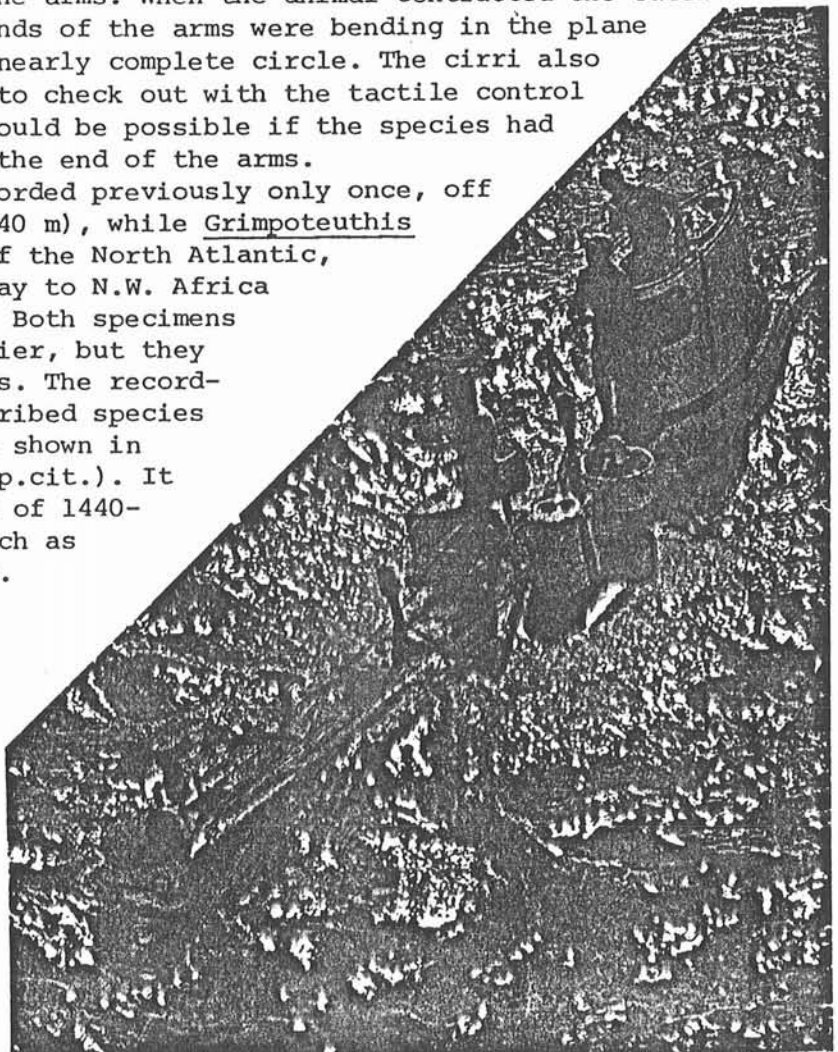
Two different species of rare deep-sea cirrate octopuses (family Cirroteuthidae) were observed by Dr. A.M. Sagalevich and other crew members and identified on videotapes and photographs. None of them had previously been observed alive, nor had they been recorded at such a high latitude. They were described in a paper by K.N. Nesis and A.M. Sagalevich in *Priroda* 1983, No.11.

The first specimen was identified as Stauroteuthis cf. syrtensis Verrill. It was observed at a depth of 1300 m on the summit of a marginal mountain in the rift zone covered by a thick sediment layer. Its total length was ca. 22 cm, arm spread ca. 30 cm. This octopod was swimming quietly along the bottom in a horizontal position, fins beating synchronously and the umbrella pulsating like a jellyfish bell. The umbrella is symmetrical, reaching three quarters of the total length of the arms. The animal was obviously disturbed by the submersible or its searchlight. It spread the arms and then threw its back over the head showing the white suckers; this was probably a threatening posture. A similar one was observed by R.R. Hessler from the submersible "Alvin" in 1967 off Martha's Vineyard at the same depth of 1300 m, the octopod being probably Chunioteuthis ebersbachii Grimpe (C.F.E. Roper and W.L. Brundage, *Smithson. Contr. Zool.* No. 121, 1972, fig. 30).

The second specimen was identified as Grimpoteuthis cf. umbellata (Fischer). It was observed at a depth of 1600 m on the slope of a volcanic cone at the rift valley covered by a very thin sediment layer. Its total length was ca. 55-60 cm, arm spread ca. 80-90 cm. It hovered over the bottom with the fins pressed to the body and waving the edge of the umbrella (a method of hovering not reported for octopuses previously). The body looked like a big yellow turnip. The umbrella was asymmetrical, reaching the very ends of arms on the dorsal arm side but ending far from the ends on the ventral side; the cirri reached the end of the arms. When the animal contracted the outer edge of the umbrella slightly, the ends of the arms were bending in the plane of the extended umbrella, forming a nearly complete circle. The cirri also spread out. This permits the animal to check out with the tactile control a relatively much larger area than would be possible if the species had a symmetrical umbrella not reaching the end of the arms.

Stauroteuthis syrtensis was recorded previously only once, off Nova Scotia at 457 m (probably to 2240 m), while Grimpoteuthis umbellata is known from both sides of the North Atlantic, Nova Scotia to Cuba and Gulf of Biscay to N.W. Africa and the Azores, from 1140 to 5370 m. Both specimens were larger than those reported earlier, but they are not the largest cirrate octopuses. The record-holder is a specimen of a yet undescribed species of Cirroteuthis (the same as the one shown in photographs by Roper and Brundage (op.cit.)). It was caught off Cape Blanc at a depth of 1440-1620 m and the total length is as much as ca. 150 cm, with an arm spread of ca. 250 cm (G.A. Golovan and K.N. Nesis: "Giant deep-sea octopod", *Priroda* 1975, No. 5, pp. 112-113).

K.N. Nesis
P.P. Shirshov Inst. of Oceanology
Moscow



High Levels of ^{210}Po and ^{210}Pb in the Infaunal Xenophyophore
Occultammina profunda

We have been investigating ^{210}Po concentrations in the infaunal xenophyophore *Occultammina profunda* collected in a box core from the Izu-Ogasawara Trench (sample depth 8260 m). We began analysis of ^{210}Po , the grand-daughter of ^{210}Pb , because a subsurface peak in the vertical distribution of the xenophyophore (Tendal, Swinbanks and Shirayama, 1982 - Fig. 3) coincided with an unusual subsurface peak in the distribution of ^{210}Pb at about 3-cm depth in the core (Yamada *et al.*, 1983 - Fig. 7), and we thought the xenophyophore might be responsible for the peak in ^{210}Pb distribution.

The xenophyophore was divided into test, granellare (protoplasm), and stercomare (excretion products) and each part analysed separately for ^{210}Po by the standard technique of acid digestion, spontaneous deposition of ^{210}Po on a silver disk and counting of the alpha activity of the disk. Since the analysis was performed 4 years after collection of the organism, it can be fairly safely assumed that the ^{210}Po , which has a half-life of 138 days, is in secular equilibrium with its grandparent ^{210}Pb , i.e., the activities of the two radionuclides are the same.

The ^{210}Po (^{210}Pb) activity of the test, which is composed of surrounding sediment, turned out to be about 50 dpm/g dry, which is the same as the immediately surrounding sediment, but the activity of both the granellare and stercomare was an order of magnitude higher at about 500 dpm/g dry. Comparably high levels of ^{210}Po have recently been reported for mid-water penaeid shrimp (Cherry and Heyraud, 1982), but the highest levels of ^{210}Pb previously reported for any organism are two orders of magnitude lower than our findings. In addition to the ^{210}Po analysis, the gamma ray spectrum of the stercomare gave qualitative evidence of a high level of ^{210}Pb activity.

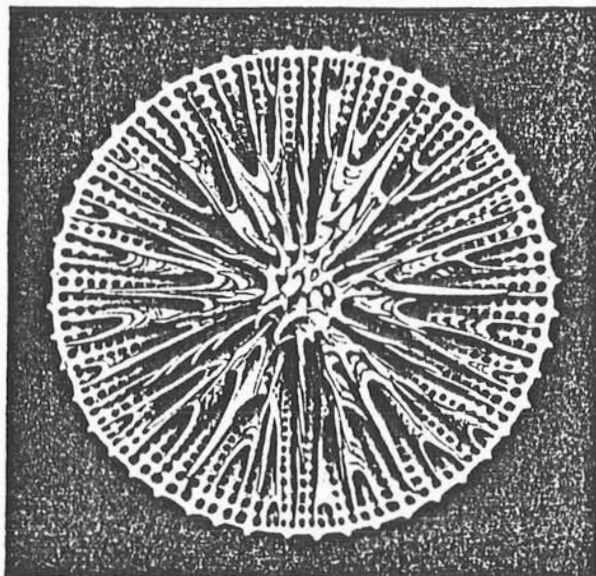
We have two possible explanations for the high ^{210}Po (^{210}Pb) levels in the granellare and stercomare. One possibility is that the xenophyophore feeds at the sediment-water interface on settling particulate matter that contains several hundred dpm/g dry of both radionuclides (Spencer *et al.*, 1978). Another quite different possibility is that the ^{210}Pb and ^{210}Po are supported by their parent ^{226}Ra . It is well known that the chemistry of radium is very similar to that of barium, its cogener in the periodic table, and one characteristic feature of xenophyophores is that they contain unusually high levels of barium in the form of intracellular barite (about 35000 ppm of Ba - Gooday and Nott, 1982). Using a figure of 35000 ppm for the barium content of xenophyophores and assuming that the $^{226}\text{Ra}:\text{Ba}$ ratio of 4.6 nanomoles $^{226}\text{Ra}/\text{mole}$ Ba in oceanic seawater (Chan *et al.*, 1976) is maintained in xenophyophores, it can be easily calculated that the ^{226}Ra activity of xenophyophores will be about 500 dpm/g (actual estimate 580 dpm/g), and thus the ^{210}Po and ^{210}Pb in *Occultammina profunda* may well be supported by ^{226}Ra . If so, xenophyophores are subjected to unusually high levels of natural radiation of about 250 rem y^{-1} (assuming a wet:dry ratio of 5:1) and the local microdose within xenophyophore granellae will be nearly two orders of magnitude higher (about 17000 rem y^{-1} , assuming no radon loss). To place these radiation doses in perspective, they can be compared with the maximum recommended dose for radiation workers in the nuclear industry which is 5 rem y^{-1} (ICRP Publication 26 1977).

We are currently proceeding with determination of the ^{226}Ra levels in the xenophyophore and will publish our results shortly. If the above calculated radiation doses prove correct, one must ask whether xenophophores show unusually high rates of radiation-induced mutation. The possibility that *Paleodictyon* is a fossilized form of infaunal xenophyophore (Swinbanks, 1982) may open up the way to investigation of speciation of xenophophores over about the past 500 million years thereby providing insight into the long-term effects of such mutation.

David Swinbanks - Yoshihisa Shirayama
Ocean Research Institute
University of Tokyo
1-15-1 Minamidai, Nakano-ku, Tokyo

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HYDROTHERMAL VENT REFERENCES

The unexpected discovery of the hydrothermal vents with their dense beds of large mussels, clams and vestimentiferan worms dates back only seven years. The physical, chemical and microbial processes at the hydrothermal vents and their remarkable animal community has aroused the curiosity of everybody interested in the sea.

Since 1977 a vast number of scientific papers and semi-popular articles have appeared, and also the Deep-Sea Newsletter has followed and reported on the exploration of the vents. Discussions with colleagues have revealed to the Editor a desire for a comprehensive bibliography of the extremely scattered hydrothermal vent literature.

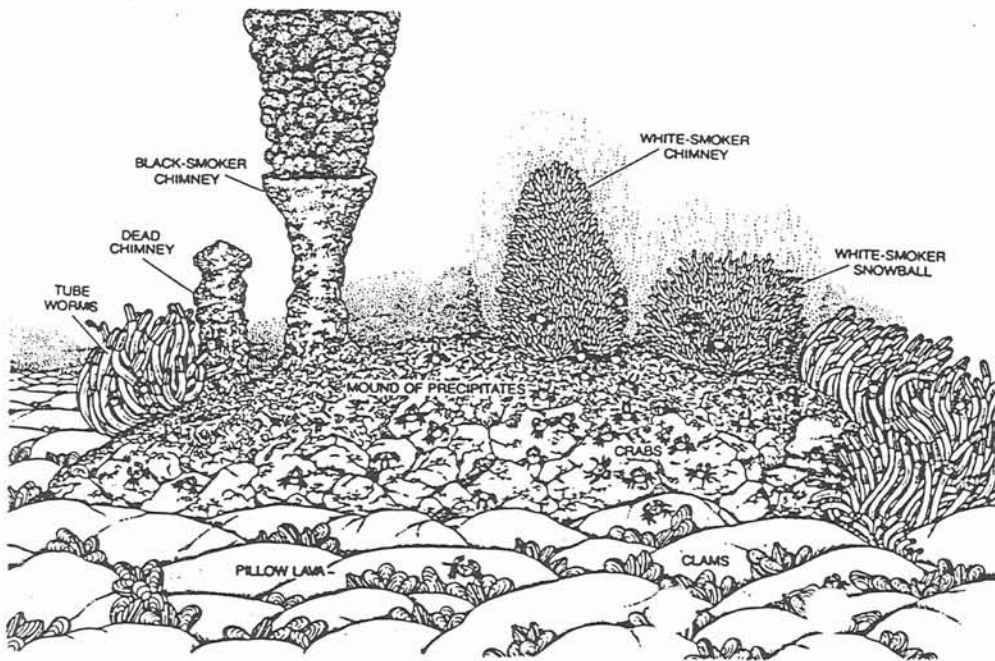
I therefore approached Dr. Robert R. Hessler at Scripps who generously gave his valuable assistance. Bob Hessler wishes to emphasize that the bibliography was constructed from that of several people including the French group. Bob's laboratory assistant, Elaine Corets, has been active in the compilation and in trying to solve discrepancies between this bibliography and previously published lists of references in scientific papers which I pointed out to her.

It should be noted that the bibliography was prepared by and intended for biologists; the biology section is thus as near as possible to being complete. Lack of expertise in geology and geochemistry made it extremely difficult to come even close to being comprehensive for these fields in which no extensive searching has been done.

On behalf of the readers of D.-S.N. I wish to thank all those who contributed to the bibliography.

Torben Wolff

P.S. The book 'Hydrothermal Processes at Sea Floor Spreading Centers' (NATO Conference Series) was published in 1983, but the reprints have been stamped with 1984.



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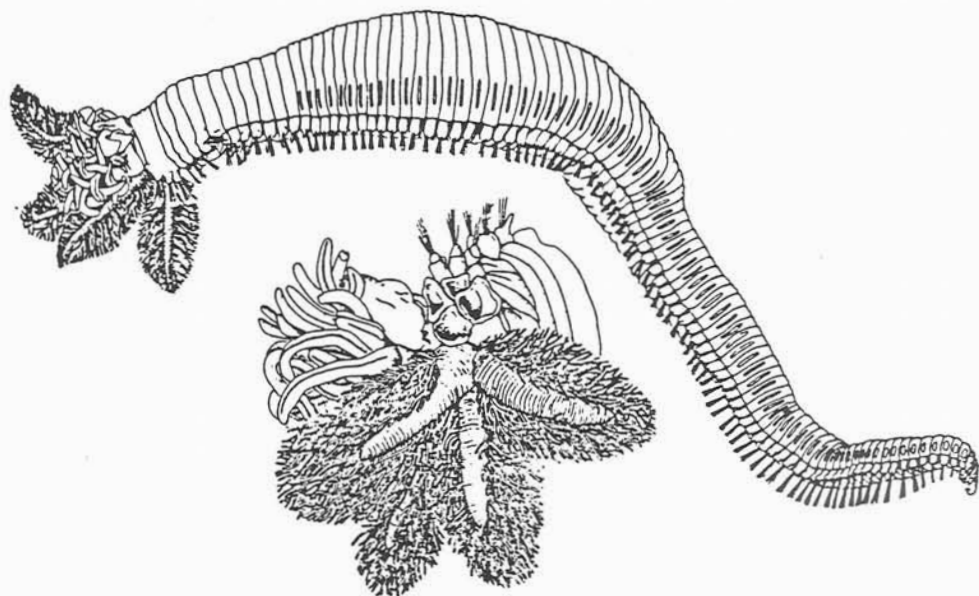
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News from France: Recent expedition to the hydrothermal vents at 13°North

During March 1984, the French biologists involved in the study of the hydrothermal vent communities came back for a two leg cruise to the sites discovered exactly two years ago on the East Pacific Rise by 13°North (exactly 12°48' to 12°50'). The cruise was called BIOCYARISE and carried out onboard the "N.O. Nadir" using the DSRV "Cyana". The cruise started, made its intermediate call and finished in Manzanillo, Mexico, a medium size harbour used by merchant navy and local fishing vessels.

Some fifteen dives were performed with generally good weather conditions (one dive per day on the spot). The submersible was well prepared due to a preceding 70 days cruise on geology, geophysics and geochemistry of the hydrothermal processes along the East Pacific Rise. Several scientists from abroad participated in our cruise: Verena Tunnicliffe (University of Victoria, British Columbia), Robert R. Hessler (Scripps Institution of Oceanography) and Jody Deming (Johns Hopkins University). The French team was headed by Daniel Desbruyères, chief scientist for the two legs, who also led the first cruise BIOCYATHERM (BIOlogy CYAna hydroTHERMal) conducted in March 1982 in the same area at 13°N. The other French scientists came from CNEXO (Anne Marie Alayse, Alexis Khripounoff, Lucien Laubier, Michel Segonzac and technicians Philippe Crassous and André Echardour); National Museum of Natural History (Nicole Boury-Esnault and Patrick Geistdoerfer) and several laboratories from CNRS and/or several French universities (Anne Hilly, Aline Fiala-Medioni, Françoise Gaill, Armand Bianchi, Daniel Pri : and Michel Rio).

The three sites discovered and described in 1982, i.e. Pogonord, Actinoir and Pogosud (see Desbruyères et al., C.R.Acad.Sc.Paris, 295, sér.III, pp.489-494) were surveyed during the first leg, and several new active sites were discovered immediately south of Pogosud. Intensive sampling of animals and hydrothermal fluids were performed, using titanium samplers developed by geochemists. A newly developed autonomous shuttle carried the sampling boxes, traps and other tools to the bottom, and took the biological samples back to the surface.

An interesting ecological result came from the re-examination of the site called Pogonord. In 1982, it appeared as a central white smoker arising from a base of some 15 m² heavily covered with thickets of the worm Riftia pachyptila. The mytilid Bathymodiolus thermophilis was reported scarce. A zoarcid fish belonging to the genus Pachycara amounted to some 350 individuals. The serpulid belt surrounding the hydrothermal vent was in "full health", and almost all white tubes displayed whitish blue branchial crowns.

Several major changes have occurred since the discovery of the site two years ago. The white smoker is extinct, and there are now only several sources of shimmering diluted hydrothermal fluid with temperatures not exceeding 40°C in the Alvinella pompejana tube mass. Most of the Riftia pachyptila thickets have disappeared from the horizontal surface; the majority of the original tubes were found empty, lying on the bottom of a small fault east of the vent and some 8 m below it. Within the remaining tube worms, a smaller species of vestimentiferan, the so-called Jericho worm (possibly a new genus or species of the family Lamellibrachiidae, M.L. Jones comm.) is well represented. This species was considered as uncommon in 1982. On the basaltic basement, a large population of adult Bathymodiolus thermophilis previously hidden between the bushes of Riftia, were clearly seen with a density of a dozen individuals per m². The zoarcid fish population was completely absent from the total area. Surrounding the vents, the serpulid belt exhibited brown empty tubes coloured by iron manganese deposits; no branchial crowns were visible in the outer part of the belt and only very few in the inner one.

All these events clearly related to a decrease of the hydrothermal activity (reduction of flow and higher dilution of the fluid), which we are at present totally unable to evaluate with any precision...

The comparison also shows the relative strength of the link between hydrothermal species and the vent activity: Riftia seems much more dependent than Bathymodiolus or the Jericho worm. Alvinella pompejana and its large predator, a new genus and species of bythograeid crabs (the description is now in press in the C.R.Acad.Sc.Paris and will appear this autumn) are living very close to the central opening of the vent system; they are still fueled by hydrothermal products and tolerate adequate thermic conditions. Generally speaking, from an ecological point of view, the hydrothermal

ecosystem appears unique in the sense that the period of life of the non-living part (the physico-chemistry of the microbiotope) is similar to the period of life of a given generation of the living part of the ecosystem, i.e. the hydrothermal species.

Large samples of hydrothermal species have been collected for biological and morphological (both histological and cytological) studies. Specimens of the new large hydrothermal bythograeid crab from white smokers and chimneys have been caught by the telemanipulator on the "Cyana". Smaller predators (fishes, the crab Bathyograea thermydron) were caught in traps deployed by the "Cyana". One individual of the small white octopus also living in the serpulid zone and sometimes found within the Riftia thickets, entered one trap, and was still inside when the "Cyana" put the trap in the rack of the shuttle; sad to say, he was not there when the shuttle arrived on the deck of the "Nadir".

Hydrothermal fluid was sampled for biochemical and microbiological analyses. Several experiments, from dissolution rate measurements to incubation of radioisotope tracers to study the process of CO₂ fixation and its pathway within the bacteria and their invertebrate associates were conducted in situ using "Cyana" capabilities. Some experiments were performed in pressure chambers onboard the ship.

We are now in the process of laboratory work with all these samples, and I hope we shall be able to give some more news in a future issue of D.-S.N.

Last but not least, we were very lucky with the sea conditions on 13^{ON}, and also with erratic sharks.... Most of the scientists also seemed to appreciate the initiation ceremony organized by the "Cyana" divers group at the end of their first dive onboard the "Cyana"; raw eggs, flour and engine grease make a strange kind of shampoo... As a whole, life at sea during that cruise was an easy one, and the continuous display of video tapes and slides makes it possible for us to get a good deal out of each dive. We hope we can go back there in 1986, and see what has happened during another two years' period.

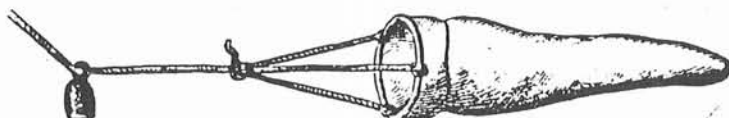
Lucien Laubier

Institution changes in France

Apart from the laboratories at the National Museum of Natural History, the National Center for Scientific Research (CNRS) and the universities, most of our recent work in deep-sea biology and ecology has been developed at the Centre Océanologique de Bretagne, Brest. It belongs to a national research and developmental organization created in the late 60'ies, the National Center for Exploitation of the Oceans (CNEXO). I started my own experience with deep-sea biology in 1969 from COB, Brest, on board our large research vessel "Jean Charcot", during a three-months cruise in the North Atlantic.

The French government recently decided to merge CNEXO with the older national fisheries institute, called Scientific and Technical Institute for Marine Fisheries (ISTPM). The merging is effective from July 6th, 1984, and our new organization has been called Institut Français de Recherche pour l'Exploitation de la Mer, which makes IFREMER. We also change our sign, and IFREMER will be associated with the digital drawing of a dolphin jumping on the waves. It is intended to deal with living resources, protection of the sea and its marine life, and present technology. We have to forget CNEXO and COB, which simply becomes the Centre de Brest of IFREMER. But I am convinced that IFREMER will pursue what CNEXO did in the study of deep-sea life, for itself, for its protection against harmful human activities, and for the technological improvements it requires. CNEXO is gone, long life to IFREMER!

Lucien Laubier



A Sulfur-Based Seep Community in the Gulf of Mexico
Preliminary Results of an Accidental Find

During March 1984, geologists and biologists (from various institutes) using DSRV ALVIN discovered a "vent-type" community at 3270 m on the passive margin off the West coast of Florida. The initial focus of the NSF sponsored cruise was to study the erosion of the West Florida Escarpment. Following the discovery, two dives were diverted to obtain biological, geological and chemical samples, and temperature measurements at these communities. Ammonia-rich hypersaline water seeping out at the abyssal plain-escarpment juncture results in fan-shaped deposits of iron-sulfide rich sediment. Large mussels, clams and vestimentiferans were associated with this dark sediment and fissures at the base of the escarpment. No temperature anomaly was recorded. The faunal composition of this community is strikingly similar to that found at various Pacific hydrothermal vent sites. The following taxa were sampled:

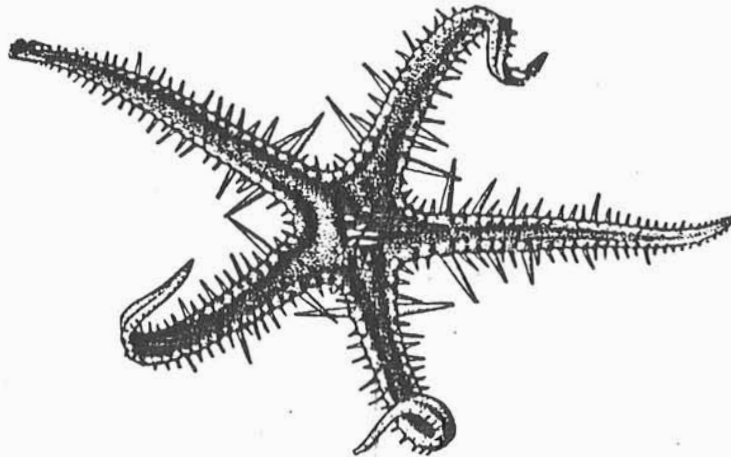
- a mussel - different from the one found in the Pacific,
- a polynoid commensal on the mussels - same genus as found at the Galapagos and 13°N,
- a new species of Calyptogena,
- an undescribed vestimentiferan - similar to one recovered from a slip fault site off San Diego,
- a limpet - the same genus as the "transparent" limpet from the Pacific,
- a coiled archeogastropod and a high-spired neogastropod,
- a holothurian Chiridota sp.,
- a stoloniferous soft-coral encrusting the vestimentifera tubes,
- several species of anemone.

Additionally, numerous galatheid crabs, zoarcid fish and bacterial mats were observed, but not sampled.

This community occupies a 20-30 m wide band at the base of the escarpment that extends for at least one mile (the distance surveyed). The distribution of the organisms is determined by the iron-sulfide rich sediment. Bacterial mats are found on the darkest sediment, while the other organisms appear on the grayer peripheral sediment.

A cruise is being planned, using DSRV ALVIN, for late 1986 to further explore this area, and conduct a detailed biological sampling and experimentation program.

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THE DEADLINE FOR THE NEXT ISSUE OF D.-S.N. IS 15 APRIL 1985

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