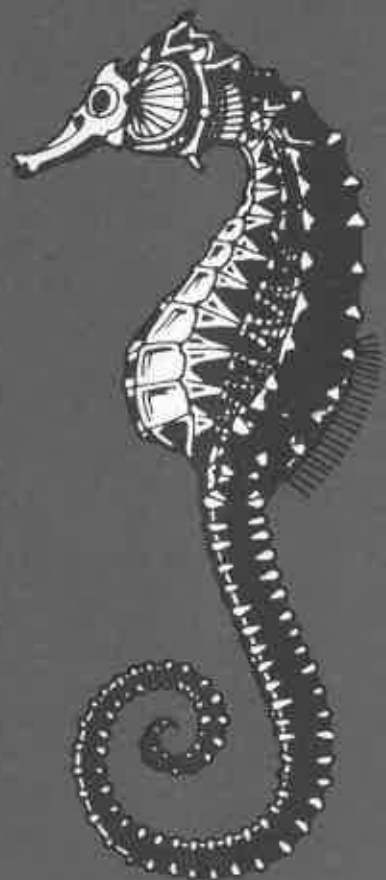


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AUSTRALIAN
MARINE SCIENCE
BULLETIN



No. 53

January, 1976

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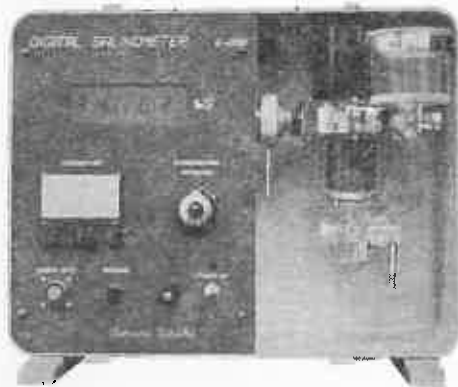
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EDITORIAL

In a 'Letter to the Editor' (p. 5), P. Boshier suggests that the Bulletin would be improved by publication of information on marine science literature available in Australia. While I consider the format suggested to be too ambitious for AMSA's present resources, a more modest cover of the literature might be of service to members. Several years ago S. A. Shepherd suggested that reprints of members' recent papers be sent to the Editor so that a list of such papers could be published in the Bulletin. On page 5 a list of some papers published recently by members is presented. Do members see such publication lists as useful guides to work currently being carried out in Australian marine science? Members comments and reprints will be more than welcome.

NEWS

Council Elections 1976. Nominations for Councillors and office-bearers are now being called for—nomination forms on page 8.

The South Australian Branch has decided to sponsor a project by students of the Meningie Area School. AMSA members will tag fish on organised field days, and the school will be a collection point for tagged recaptures, since most of the parents are involved in either professional or semiprofessional fishing in the Coorong. AMSA will also help with compilation and computation of data. In addition the students will regularly collect water samples which will be forwarded to the University of Adelaide for analysis. Out of its limited funds the S.A. Branch is providing \$45 for the purchase of suitable fish tags, and the S.A. Government has been approached, through its Minister of Fisheries, for financial support. Dr Noye and Dr Geddes have applied for a grant through the Australian Research Grants Committee to do a comprehensive study of the Coorong, and it is hoped that the school project will become a valuable adjunct to their program. The students, some of the parents and teachers from the school were guests at a meeting on 11 August 1975. Mr Fred Reynolds of the S.A. Fisheries Department spoke on fish tagging and gave a demonstration of the technique. Students then tried their hand at tagging. Dr John Douglas of the S.A. Museum also spoke on the work the Museum is undertaking on Youngusband Peninsula adjacent to the Coorong. Before the meeting the students were shown around the University of Adelaide by the AMSA Branch Committee.

The Gosford Lagoons Environmental Study has now been completed. The multidisciplinary study of the catchment area and four lagoons (Avoca, Cockrairie, Terrigal and Wamberal) was conducted for Gosfordshire Council, N.S.W., by P.A. Management Consultants. Dr Albani investigated the sediments and the tidal regimes of the four lagoons, and the N.S.W. Division of the Australian Littoral Society carried out a 12-month benthic sampling program and physical and chemical water quality analyses. The catchment area is unsewered and much of the septic system run-off drains into the coastal lagoons, which are closed to swimmers because of the *E.coli* concentrations. This study of coastal lagoons under heavy population pressures is the first of its kind in Australia.

Jervis Bay. The House of Representatives Standing Committee on Environment and Conservation has published its findings on the future development of Jervis Bay. The Committee accepted the proposals, put forward by the N.S.W. Division of the Australian Littoral Society, for creating marine underwater national parks. Maps

which the Society submitted are reproduced in the report, copies of which are available from Parliament House.

Ecological Society of Australia. From 1976 the Society will publish the *Australian Journal of Ecology*, which is intended as an outlet for ecological papers of the Australian region. The ESA was formed as a common meeting ground for ecologists of all disciplines and for those interested in the environment. No professional qualifications are necessary to join and new members are most welcome. The Society publishes a *Proceedings* every two years (in the non-ANZAAS years) after a symposium held in one of the capital cities. A *Bulletin* is published four times per year and contains comment and notes of ecological interest. Membership subscription (\$20) includes all publications; reduced rates are available for students and members who do not want the *Aust. J. Ecol.* Further details from Ms M. D. Fox, U9/5 Peach Tree Road, North Ryde; Mr J. Pickard, Royal Botanic Gardens, Sydney; or Dr R. Rogers, Botany Dept, University of Queensland, St. Lucia, Qld.

The Society's next symposium will be in Adelaide in 1977 and will have as its theme 'Factors contributing to the establishment and success of exotics in Australasia'.

AEC/AFC Joint Technical Working Group on Marine Pollution

Realisation by the Fisheries Pollution Committee of the Australian Fisheries Council that their initiatives in the area of marine pollutant assessment and analysis were similar to those of the former Marine Pollution Committee of the Australian Environment Council prompted the Standing Committee on Fisheries to approach the Standing Committee of the AEC with regard to establishing a joint technical working group on marine pollution. It was felt that this group would avoid duplication of effort by the two councils and would be able to devote itself to the recommendation of initiatives in the study of pollutants in the marine environment, including their estimation, their effects on marine biota and the need for a central facility.

Following agreement by the AEC Standing Committee, representatives were nominated by both the AFC and the AEC. The members of the Group are Messrs D. Rochford (Chairman), B. Newell, A. Olsen, R. Walker and P. Yates and Drs D. Hancock and A. Gilmour. At the Group's first meeting, held in Adelaide on 10 July 1975, the main item for discussion was consideration of the following terms of reference, namely, that the Group is

1. to make recommendations on the need for standard methods, including bioassay techniques, for evaluating pollutants in the Australian marine environment.
2. to investigate the need for a central facility to carry out such standard evaluations; and
3. to make recommendations on the best means of achieving standardisation of pollutant testing procedures within Australia.

It was decided that situation reports would be prepared on

- methods of marine pollutant analysis currently in use in Australia, with emphasis on pollutants presently analysed, sampling and preservation techniques and materials analysed; and
- bioassay techniques currently being used in Australia.

It is hoped that these reports will assist the Group's future discussions on the above terms of reference. An attempt will then be made to produce suggested guidelines for standard or comparable methods. A questionnaire has been circulated to all known workers in the field and has produced a voluminous and helpful response.

STOP PRESS

National Conference Attendance

As of 22 January 1976, nineteen members have returned enrolment forms to the Organising Secretary. Of these members, 16 will attend whether the Conference be at Melbourne or Paynesville; 2 preferred Melbourne as a venue; 1 preferred Paynesville. Three enrolment forms had no name and address, but two of the members have subsequently been identified. Did you include your name and address?

LAW OF THE SEA

The President has submitted AMSA's comments on the 'Informal Single Negotiating Text', prepared by three committees set up at the last U.N. Law of the Sea Conference, in a letter to Sir Hugh Ennor, Secretary, Department of Science and Consumer Affairs. The comments submitted are published below.

This Association supports those articles of the draft Single Negotiating Text encouraging the conduct of research for peaceful purposes only (Part I, Article 10 (1) — Article 4 (page 15) and Part III) and the promotion and transfer of knowledge concerning scientific and technological research in the sea (Part I, Articles 10 (3) and 11; Part III, Chapter two, Article 9 (page 4), Articles 3 (page 15), 9 through 12 inclusive (page 16) and 25 (4) (page 19)). In regard to the latter provision, however, the opportunity for developing States to participate in research programmes might be encouraged but most definitely on a co-operative basis. For instance the provisions of Article 134 of Part II (page 48) are to be encouraged.

Like ANCOR this Association considers that notification of coastal States of the intent to carry out fundamental research is appropriate and emphasises that the provisions of Article 49 of Part II (page 21) are to be encouraged. In the Association's view the Australian Government should not support any provision which requires excessive and time consuming examination of proposals for the conduct of scientific research of a fundamental nature either by non Australian research teams within areas under Australian jurisdiction or by Australian scientists in the waters of other countries. In our view the conduct of research by foreign vessels within developing countries (of which Australia is surely one as far as marine resources is concerned) is to be encouraged as leading to a much greater understanding at small cost.

We also support the view of ANCOR that the guidelines for determining the nature of fundamental non resource oriented research should be worked out by a meeting of scientists at international level.

This Association welcomes the views expressed by the Australian delegation at the Geneva meetings to reach a compromise between the views of the USSR delegation and of the 'Group of 77'.

Finally, this Association obviously supports provisions allowing freedom of scientific research on the high seas (Article 75 of Part II).

As to protection and preservation of the marine environment (dealt with particularly in Chapter One of Part III of the 'Single Draft Negotiating Text') this Association most strongly supports Articles 2, 4 and 5 (pages 2 and 3) and Articles 7 through 10 inclusive and 11 (b) and (c) of Part III.

In summary, then, this Association urges the Australian Government delegation to the next Law of the Sea Conference to support the inclusion of provisions that

1. allow maximum possible freedom in the conduct of fundamental research;

2. encourage efficient measures for the promotion and interchange of the results of scientific research;
3. require effective control of pollution of the sea and lead to the conservation of significant parts of the marine environment for the purposes of study and enjoyment of future generations; and
4. as far as possible ensure maximum international co-operation in the use of the sea and sea-bed for peaceful purposes.

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION —NINTH ASSEMBLY

by H. R. JITTS

*Dept of Environment, Housing and Community
Development, Canberra, A.C.T.*

The Intergovernmental Oceanographic Commission (IOC) held its Ninth Assembly in Paris from 22 October to 4 November. Australia was represented by Mr Ian Nicholson, Australian High Commissioner to Malta, as Head of Delegation, with Mr Harry Jitts of the Department of EHCD as Alternate Delegate and Dr G. F. Humphrey of CSIRO who is Chairman of IOC.

Established in 1960 under the auspices of UNESCO, IOC has as its main function the promotion 'of scientific investigation with a view to learning more about the nature and resources of the oceans through the concerted action of its members'. Some 87 nations, including all the major maritime nations and many of the smaller and developing nations, are now members of IOC. The main activity of IOC has been the international co-ordination of marine research at a governmental level. Some of the more notable of these activities have been the International Indian Ocean Expedition, the Co-operative Study of the Kuroshio, the Co-operative Investigation of the Caribbean and Adjacent Regions and the International Tsunami Warning System in the Pacific.

In recent years there has been a marked change in the activities of IOC. The main emphasis has moved away from the co-ordination of large co-operative expeditions to co-operative studies of specific phenomena. A good example of this is the recently established co-operative investigation of the 'El-nino' phenomenon off the west coast of South America. Increasing world concern for environmental matters has led IOC to establish a Working Committee for a Global Investigation of Pollution in the Marine Environment (GIPME) as one of IOC's major activities. Concern for the needs of developing countries has led IOC to establish a Working Committee for Training, Education and Mutual Assistance (TEMA). TEMA has now been given second highest priority in IOC activities.

Since IOC's inception, Australia has played a very active role in the Commission's work. Australia was a major contributor to the International Indian Ocean Expedition, IOC's first major co-ordinating activity. Since then Australian oceanographers have taken part in all IOC meetings, have been members of many IOC scientific working groups and have held office in IOC. Dr Humphrey has been Chairman of IOC for the past two years and at the Ninth Assembly he was re-elected by acclamation as Chairman for a further two years.

The Ninth Assembly of IOC was a very busy and critical meeting. The rapid growth and change of membership has changed the IOC from 'a rich man's club for expensive oceanographic research' to a world organisation with a very real concern for the study of the oceans

for the benefit of all mankind. This is evidenced by the high priorities given at the Ninth Assembly to TEMA and GIPME. The growth in the complexity of IOC's activities made it necessary for the Ninth Assembly to give major consideration to the priorities and restructuring of IOC.

Even as IOC has changed, so has Australia's interest in marine science and relations with IOC changed. Where a few years ago IOC was of interest to only one Division of CSIRO, we are now faced with a very different picture. The Australian Department of Environment, Housing and Development is taking an increasing interest in marine pollution and in the protection of the marine environment. The Bureau of Mineral Resources and geologists from several Universities are active in IOC's work in South East Asia and the South Pacific. The establishment of the Australian Institute of Marine Sciences has introduced a new tropical dimension into Australia's marine activities. Practically all the major Australian Universities and many of the Colleges of Advanced Education are now active in marine science. The State Governments are also playing a role through their various departments in protecting the marine environment and assessing marine resources.

As an ocean-girt nation with the vast majority of its population living close to the coast, Australia must give an increasing priority to marine affairs. By their very nature oceans know no boundaries and require international co-operation in their study and management. For these reasons Australia should continue to take an active interest in the IOC.

DREDGING IN DEEP OFFSHORE WATERS

by R. M. DAVIES

R. M. Davies & Associates, Marine and Fisheries Consultants, Wynyard, Tasmania

Recently a requirement to obtain samples of sediment and benthos from beyond the continental shelf lead me to consider the suitability of plane and pipe dredges for the work.

The plane dredge (MacIntyre 1964) provides a sample of sediment cut to a specified depth, but this advantage is outweighed by the need for more precise and costly fabrication and, in the event of damage which must be expected from a hard bottom, requires a more sophisticated repair workshop than is usually available in small ports.

After correspondence with Dr R. J. MacIntyre of the University of New South Wales it was decided to use the simpler 'Barcoo' pipe dredge as the main sampling tool for the full range of sampling depths and to test the effectiveness of combining this dredge with a triangular dredge for simultaneous sampling by observing the maximum depth to which the tandem operation is successful.

Sediments consisting of sand, mud, shell and rock were obtained from depths of up to 1700 m by pipe dredge hauls and, in most instances, some benthos could be sorted from the sample. When operated in tandem, the triangular dredge yielded samples of benthos consisting of coral, shell, weed, sponges, brittle stars and crabs from depths of up to 500 m. Modifications proposed for the equipment should permit successful casts to be made to even greater depths.

A pipe dredge of 16 cm diameter and 54 cm long has been used successfully in shallow waters but neither its capacity nor its mass seemed appropriate for deep water operations. A 20 cm diameter dredge, 75 cm long, was tested initially but this unit was shortened when it

was noted that the 10 cm high fins gave it too shallow a bite over that length.

The most successful pipe dredge has a 20 cm diameter, is 60 cm long and is blanked at one end around which three fins, each 15 cm long by 10 cm high, are disposed 120° apart. A rod handle, 15 mm in diameter, is pivoted about 20 cm from the mouth of the dredge and is fitted with a wash plate slightly over-sized to the dredge diameter; this wash plate barely clears the mouth when the dredge is vertical during recovery from the bottom. For deep sampling, 4 mm diameter oceanographic wire is attached to the unit at two points: the end of the wire is shackled through a hole in the dorsal fin of the dredge and slack wire is tied with twine to the rod handle; the second point of attachment, which takes the main pull of the wire through a weak link of about 15 cm of 18 mm diameter rope, is between the eye of the handle and an additional eye in the oceanographic wire.

The triangular dredge has 50 cm sides of 4 cm angle iron drilled for net attachment at 2 cm intervals around the sides. Lugs are welded at each corner on the leading face and from one of these lugs a 50 cm length of oceanographic wire runs to a shackle. From the other two lugs a length of 8 mm rope leads through this shackle to provide a weak link attachment. The shackle is secured through a hole in an anal fin of the pipe dredge. An inner net of 2 cm mesh is laced to an outer net of 6 cm mesh which in turn is laced to the sides of the triangle, the ends of the nets being tied to give a trailing length of 50 cm.

In each case failure of the weak links after fouling an underwater obstruction allows the equipment to be recovered, albeit without sample. This method of attachment between the pipe and triangular dredges probably affects the performance of the pipe dredge by slewing it away from the line of wire pull, but this appears to be preferable to attaching it through the dorsal fin which probably affects the bite of the pipe dredge by pulling the mouth off the bottom.

An over-run of wire, about 30% of the depth, is necessary to obtain samples of acceptable volume but care must be taken to ensure, particularly on deep stations, that after the dredges have bottomed the wire is paid out with the vessel underway to prevent wire piling up to foul obstructions or to tangle itself. The use of a spring accumulator above the meter block provides an indication of the bottoming of the dredges as well as reducing the stress on the working gear in a seaway.

Modifications to the dredges are proposed for future work. The triangular dredge will be attached to a lug on the blank end of the pipe dredge to allow a straight line of pull. Three metal rods leading aft from the corners of the triangular frame to a joining position at the apex will add weight during descent and confine the nets to prevent their tangling with the main line to the pipe dredge. Replacing the wash plate on the handle with an internal butterfly valve in the mouth of the pipe dredge is seen as a more effective method of retaining soft sediments during long hauls to the surface and of retaining a sample in the event of fracture of the weak link. However, this added sophistication might complicate an oceanographic tool which has, as one of its main advantages, ease of fabrication and repair in any rudimentary workshop.

Reference

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LETTER TO THE EDITOR

Dear Sir,

I feel that an improvement could be made in the Bulletin by publishing more concise information of literature available here in Australia, and overseas, relevant to marine sciences, etc. I have in mind the type of format published by the Marine Technology Society Journal, the Geotimes Journal of American Geological Institute, the Bulletin of the Australian Institute of Mining & Metallurgy, which describes the current books published, the papers and publications recently issued, meetings, as well, for information of readers.

Yours sincerely,

P. A. Bosher

36 Campbell Avenue
Normanhurst, N.S.W. 2076

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COUNCIL MEETINGS

Some topics discussed at Council Meetings held at the Australian Museum on 22 July, 9 September and 11 November 1975 are reported briefly.

Constitution

All suggested amendments to the draft constitution were considered by Council. Those accepted will be circulated to Councillors before the next Council meeting.

Student Members

The Hon. Treasurer expressed concern at the arrangements for Student Membership of the Association. It was resolved that she should prepare a list of Student Members and submit it to the Branches for confirmation of the Members' student status. Council also resolved that Student Members shall be full-time students and that an appropriate amendment be made to the draft constitution.

National Conference 1976

The next National Conference of AMSA will be held during the weekend preceding the ANZAAS Congress in May. Dr Gilmour has indicated that the Victorian Branch is willing to arrange the meeting and suggested that an excursion could be arranged for two days either before or just after the weekend. Council agreed with these plans. Dr Baker is to go ahead and send out notices regarding the student Prize and Junior Travel Award.

Directory

A complete listing for the Australian Marine Science Directory has now been received from Dr Noye. The Hon. Secretary is to contact the Department of Science by phone to confirm the arrangements for its publication. It was decided that 2000 copies should be printed and that it will be supplied free to members unless the total costs exceed \$1500. Dr Griffin is to write to Dr Noye and thank him for his efforts.

Government Policy in Marine Science

The Association has received a letter from the Hon. W. Morrison, the then Minister for Science, who indicated that he had referred AMSA's letter about the formation of a council to overview marine science in Australia to the Chairman of ASTEC. Dr Griffin reported that he, Drs Allen and Gilmour had met members of ASTEC and the then Minister for Science and Consumer Affairs, the Hon. C. Cameron, on 14 August 1975 to discuss the need for the development of a national policy for marine science.

Dr Griffin tabled a letter, which he intended sending to the Minister for Science and Consumer Affairs, expressing concern about some disturbing features of the budget with respect to marine science. Council agreed that the letter be sent. A reply has been received from the Hon. Clyde Cameron. Dr Griffin is replying to Mr Cameron to indicate that although AMSA supports the allocation to AIMS other more general support for marine science is necessary. The letter will also indicate that AMSA is pleased that the matter of support for marine science has been referred to ASTEC.

Dr Griffin has made a submission to ASTEC regarding the needs of marine science in Australia. A summary of the recommendations in his submission will be sent to Councillors.

Dr Griffin reported on his recent meeting with the members of ASTEC in Canberra. After the meeting he took part in a working group which prepared a draft report on the needs of marine science in Australia. It is hoped that the final report will be available in January. Dr Griffin is to supply a list of Council members to ASTEC and ask that they be placed on the circulation list for the report.

Botany Bay Project

Council resolved that a letter expressing concern at the apparent lack of public accountability for the money expended on the project be sent, over the President's signature, to the Editor of *Search*. The letter (in press) will indicate the expenditure on the project and will include a statement that the letter has been sent to the three academics concerned with the project.

Working Groups

(a) Wetlands and Estuaries. Dr Hutchings tabled Dr Frith's reply to Council's request for information on the Wetlands Survey; the information agreed with that provided by Dr Allen. Dr Frith has agreed to publication of the information but Council has decided not to publish anything until it is known whether the third stage of the program will eventuate.

Mr Collett reported that some comments, generally favourable, had been received about the Draft Document on Wetlands and Estuaries and that the committee was about to revise the document.

Mr Collett reported that he had been unable to contact Professor Garbizie as he has now returned to the United States. However, Mr Collett tabled a document which described in great detail a plan for the management of the coast (by Professor Sorenson, Berkeley University). Council was impressed by the plan and decided that the President should write to Sir John Fuller and to the Australian Advisory Committee on the Environment and express the hope that the above plan will be implemented in Australia.

Dr B. Wilson has written to say that he is on an advisory committee to the University of New England which has a contract with the Department of the Environment. He said he would be prepared to present AMSA's views to this committee and Council agreed that he should do so.

(b) Law of the Sea. A reply has been sent to Sir Hugh Ennor stating that AMSA supported those provisions of the Third Draft Negotiating Text which encouraged the use of the sea for peaceful purposes, which encouraged the setting aside of areas for conservation and which make provision for the carrying out of fundamental research without interference. The substance of the reply appears on page 3 of the Bulletin.

(c) Australian Tidal Institute. The Association for Australian Port and Marine Authorities' submission entitled 'Proposed Federal Body to Co-ordinate all Australian Tidal Matters' was tabled. The Secretary is to write to Dr Noye for his comments.

Correspondence

Letters have been received from:

(a) C. Garrow, Manager, CSIRO Information Service, inviting an entry for inclusion in a directory entitled 'Australian Scientific Societies and Professional Associations'. The Secretary reported that she had answered the questionnaire on the Association's behalf.

- (b) ANZAAS regarding the ANZAAS medal, 1976. Council resolved that no nominations would be made for this award.
- (c) Dr R. P. Kenny, who indicated his desire to resign from Council as he will be overseas on study leave in 1976. Council accepted Dr Kenny's resignation with regret. The President is to write to Dr Kenny to ask him to suggest a replacement.
- (d) The Australian Underwater Federation asking whether AMSA would be prepared to co-sponsor the World Congress which will be held in Australia in 1977. Council asked Dr Hutchings to write for more details.

AMSA Handbook

This handbook is now out of print and, as there is still a demand for it, Council is considering a reprint. Mac Print has informed the Secretary that reprinting of 500 copies of the book will cost \$684 providing no alterations are necessary. It was resolved that Dr Albani be consulted about the reprinting and that alterations should be incorporated as an errata page.

Bulletin

Drs Griffin, Gilmour and Evans met with Messrs B. Newell and H. Jitts in Canberra on 14 August 1975 to discuss the progress of the Bulletin. It was obvious that there were continuing problems in getting articles for publication. It was decided

- that reminder cards should be printed and sent to Bulletin Correspondents as the closing dates for articles approached;
- that Mr Jitts should replace Mr Newell on the Editorial Committee; and
- that some Correspondents should be replaced.

The possibility of the Editorial Committee meeting once or twice a year was discussed.

Consortium of Ocean Geoscientists

Professor Phillip informed Drs Griffin and MacIntyre that a Consortium to co-ordinate geological activities in Australia had been formed. Professor Phillip agreed to keep AMSA informed of developments in this area.

Valdivia

Dr Griffin attended discussions with members of a delegation from the Federal Republic of Germany (FDR). Dr Markus of the FDR indicated that the *Valdivia* will be visiting the Timor Sea in 1976 and would welcome the participation of Australian scientists. Dr Griffin noted that every speaker mentioned the extreme shortage of oceanographic vessels in Australia.

New Members

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MEETINGS AND CONFERENCES

The Sixth International Helgoland Symposium, to be held from 26 September to 1 October 1976 on Helgoland, will be devoted to 'Ecosystem Research'. The topic will be subdivided into (a) ecosystems in the sea and in small natural water bodies and (b) multispecies cultures and artificial microcosms. There will also be two Informal Sessions for discussing special topics in depth. The Symposium is being organised to provide a platform for marine biologists to present and to discuss results obtained on ecosystems and other multispecies assemblages in the sea and in the laboratory. Recent developments in fundamental marine ecology, environmental protection and mariculture necessitate a critical reassessment of the present body of knowledge regarding the organizational integration of different species into a multi-specific system. There is considerable need for defining more closely the forces that govern the coexistence of species and for developing new techniques, concepts and models in order to analyze essential functions and structures of ecosystems. You are invited to submit a paper to be presented at the Symposium, suggest topics to be discussed in depth during the Informal Sessions, recommend names of potential session conveners and recommend names of invited speakers who are to introduce major subtopics. Invited speakers have 40 min time for paper presentation; their travel will be financed by the Biologische Anstalt Helgoland. All accepted papers will be published in the journal *Helgolander wissenschaftliche Meeresuntersuchungen*. Symposium fee: DM 40. Further information from Symposium Office, Biologische Anstalt Helgoland, D-2000 Hamburg 50, Palmaille 9, Federal Republic of Germany.

At the Joint Oceanographic Assembly, Edinburgh, 13-24 September 1976, two afternoon sessions, namely, C 5 on 16 September and C 11 on 23 September 1976, have been set aside for contributed papers in biological oceanography. It is envisaged that at this assembly at least as many contributed papers will be offered as at the Tokyo J.O.A. in 1970. It has therefore been decided to follow the same procedure as in 1970 where the papers were sorted into groups according to subject; a number of specialists were asked to prepare reviews of such groups of papers, stressing major findings and ideas in the papers and trying to put them in a general context. During the following discussions many authors of contributions took the opportunity to make certain points and to answer specific questions. To allow sufficient time for the selection of reviewers and for these to prepare their reviews, the organisers ask contributors to send the title and abstract of their contribution to the convener of C 5 and C 11 no later than 1 June 1976; manuscripts must be sent no later than 1 August 1976. These are conditions for consideration of the contribution. It will be advantageous for participants in C 5 and C 11 if they have beforehand had an opportunity to read those manuscripts in which they are particularly interested. The authors of contributed papers are therefore asked to take copies (e.g. 100) of their manuscripts to the Assembly. The organisers will arrange for the copies to be distributed to those interested. The convener of C 5 and C 11 is Torben Wolff, Secretary of IABO, Zoological Museum, Universitetsparken 15, DK-2100 Copenhagen, Denmark.

AMSA NATIONAL CONFERENCE MAY 1976

A REMINDER

The Victorian Branch is host to the AMSA '76 Conference and proposes to hold it in Victoria during the period

MAY 7th to MAY 10th 1976

There are two possible venues for the Conference: one is in Melbourne using the facilities of the National Science Centre, while the second is in the Gippsland Lakes region of Victoria.

The National Science Centre was the venue for the last conference held in Victoria, AMSA '70, and it has all the advantages of a fully fitted lecture theatre. Accommodation may be arranged in a College. This venue has the advantages of easy accessibility and it is particularly convenient for those wishing to go on to ANZAAS.

A preliminary booking has been made at a lake-side motel at Paynesville, that has facilities for holding meetings and has accommodation for about 60 people. If more than that number wish to register it may be possible to arrange further accommodation at other establishments. A camping ground is also available close by.

The main drawback to the Gippsland proposal is that it entails a four and a half hour bus trip from Melbourne and this would require everybody to be at a starting point in the city by midday on the Friday. People wishing to go to ANZAAS would have to miss the first day, although if one or two had a particular need to be up earlier this could probably be arranged with a Victorian member who would go by his own car.

Accommodation will be limited and if this proposal is adopted it is intended that those whose register in response to this circular will be given preference in the allocation of accommodation. Transport arrangements are being finalised at present and it is expected that a bus will be organised to transport people from Melbourne.

It is important that all intending participants at either venue return the attached form as promptly as possible so that we can get an early indication of numbers. This will enable the Organising Committee to attempt to obtain additional accommodation — if available.

PROVISIONAL PROGRAM

Theme: Estuaries and estuarine-lagoon systems.

Friday, 7th May

Morning Arrive in Melbourne.
Early (Time to be confirmed) Bus for Paynesville.
-afternoon
Evening Films and refreshments.

Saturday, 8th May

a.m. Conference.
Lunch.
p.m. Conference.
Evening Conference Dinner.
(this will be designed to estimate the effects of heavy metals on the taste of various foods!)

Sunday, 9th May

a.m. Conference.
Lunch.
p.m. Conference (or submitted papers on other themes).
Evening AGM and refreshments.

Monday/Sunday Evening

Depending upon the number wishing to travel to ANZAAS. A bus will travel back to Melbourne.

Monday, 10th May

Outing on Gippsland Lakes.

Tuesday, 11th May

Final return trip to Melbourne.

Please remember to include your name and address when returning your enrolment form. Space for this was inadvertently omitted from the original form.

COUNCIL ELECTIONS MAY 1976

Nominations for councillors and office-bearers are now being called for.

The next general meeting of AMSA will be held in Melbourne in May 1976 just prior to the Hobart ANZAAS Congress. All members of Council shall retire at that time but all are eligible for re-election.

Nominee.....

Nominated for position of.....

Occupation.....

Present employment.....

Education.....

Previous employment.....

Proposed by.....

Seconded by.....

Nominee's signature.....

Please complete all details and send nominations to Mrs P. Dixon, Hon. Secretary AMSA, C/- School of Zoology, University of N.S.W., P.O. Box 1, Kensington, N.S.W. 2033. Nominations close at 5.00 p.m. on Friday, 5 March 1976.

AUSTRALIAN MARINE SCIENCES ASSOCIATION
INCOME & EXPENDITURE ACCOUNT FOR THE YEAR
ENDING 30 JUNE, 1975

1974	INCOME—GENERAL	1975
2,030.50	Subscriptions	2,814.65
200.00	Donations	5.00
5.00	Reimbursement for entertain- ment	17.50
12.37	Interest—Bank	4.77
25.42	—Investments	110.60
		<u>115.37</u>
130.00	Advertising	—
<u>2,403.29</u>	Total Income for year	<u>2,952.52</u>

EXPENDITURE—GENERAL

12.89	Administrative:	
40.00	Secretarial	22.04
3.00	Petty Cash	90.00
	Bank Charges	4.30
144.51	Postages (incl. Handbks)	178.17
33.02	Less reimburse- ments	30.15
111.49		148.02
22.84	A.M.S.A. Dinner (Conference)	10.00
		<u>274.36</u>
1,390.85	Bulletin:	
82.27	Printing	1,717.95
82.27	Wrappers	40.08
	Postages	134.88
1,473.12		1,892.91
401.35	Stationery & Printing	
188.00	General:	
19.00	A.M.S.A. Prize	50.00
	Grant to Victorian Branch	38.00
18.53	Miscellaneous	88.00
<u>2,290.22</u>	Total Expenses for year	<u>2,255.27</u>
113.07	Surplus for year carried to Accumulated Funds	697.25

PUBLICATIONS ACCOUNT FOR THE YEAR
ENDING 30 JUNE, 1975

1974	1975	
171.96	Sales during year	
292.09	—Handbook I	111.96
	—Handbook II	150.57
464.05		<u>262.533</u>
1,534.16	Add value of stock on hand (as tallied by Museum staff: 8 copies Handbook I } 1420 copies Handbook II } @ \$1.00	1,428.00
1,998.21		<u>1,690.53</u>
1,691.64	Deduct value of stocks at beginning of year as shown on	
23.42	Balance Sheet	1,534.16
	Royalties paid	29.21
<u>1,715.06</u>		<u>1,563.37</u>

283.15	Surplus for year carried to Accumulated Funds	127.16
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SUMMARY

113.07	General surplus	697.25
283.15	Publication A/c surplus	127.16
<u>396.22</u>	Total surplus for year	<u>824.41</u>

BALANCE SHEET AS AT 30 JUNE, 1975

ASSETS:		
20.34	Cash at Bank	135.59
584.68	Investments	1,400.00
605.02		<u>1,535.59</u>
1,534.16	Stock of Publications (at estimated realisable value)	1,428.00
<u>2,139.18</u>		<u>2,963.59</u>

ACCUMULATED FUNDS:

1,742.96	Balance at 1.7.74	2,139.18
396.22	Add surplus for year	824.41
<u>\$2,139.18</u>		<u>\$2,963.59</u>

NOTES TO, AND FORMING PART OF, THE ATTACHED
BALANCE SHEET, AND THE INCOME & EXPENDITURE
ACCOUNT

1. In accordance with the practice of past years, the accounts have been prepared on the basis of cash received, and cash paid; that is to say, no accounting has been made of amounts owed to, and amounts owed by, the Association.
2. The amount of unpaid subscriptions, owing to the Association at 30 June, 1975, was \$483.00.
3. The only known unpaid accounts, for which invoices have not yet been received, are those owing to the Renown Press Pty. Ltd., in Melbourne, for the printing of the April issue of the Bulletin (estimated at \$550.00), and for postages on the January and April issues (estimated at \$30.00 each), making a total of \$610.00.
4. The results of the year's activity, as disclosed by the Income & Expenditure Account, are subject to sales of publications realising the estimated realisable value, as shown in the Publications Account.

AUDITOR'S REPORT TO THE MEMBERS OF THE
AUSTRALIAN MARINE SCIENCES ASSOCIATION

I report that I have examined the books and accounts of the AUSTRALIAN MARINE SCIENCES ASSOCIATION for the year ended 30 June, 1975. In my opinion the attached Balance Sheet as at 30 June 1975, Statements of Income and Expenditure and Publications Account together with the notes thereon show a true and fair view of the transactions for the year then ended.

15 August 1975.

Peter Menzies,
Hon. Auditor

