

THE SWIRE INSTITUTE OF MARINE SCIENCE ANNUAL REPORT FOR 1997



Corals at the possible future marine reserve at Ping Chau

Denise McCorry

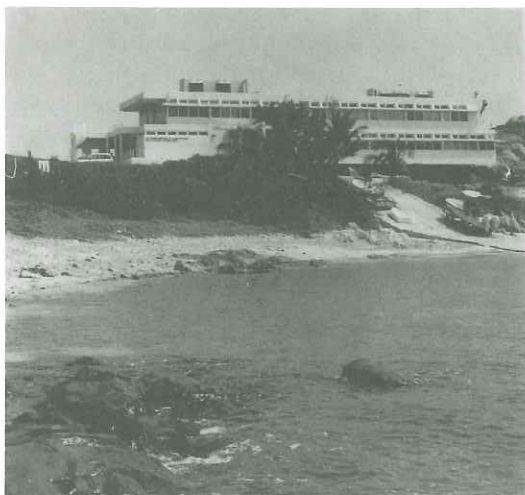


The Swire Institute of Marine Science



The University of Hong Kong

The Swire Institute of Marine Science Annual Report for 1997



The Swire Institute of Marine Science

The Institute was officially opened on the 3 November 1990 as The Swire Marine Laboratory and renamed The Swire Institute of Marine Science with effect from the 1 July 1994. It has now completed its seventh year of research activity and development.

This Annual Report covers the period from 3 November 1996 to 2 November 1997.

Enquiries about the facilities and activities of the institute should be addressed to:

The Director,
The Swire Institute of Marine Science,
The University of Hong Kong,
Cape d'Aguilar, Shek O,
Hong Kong.
Tel. (852) 2809 2179
Fax (852) 2809 2197
E-mail: SWIREML@HKUCC.HKU.HK

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Research and other Activities in Marine Science

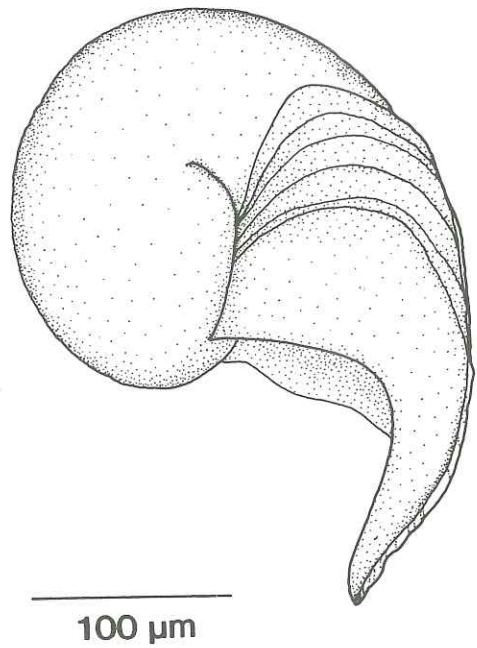
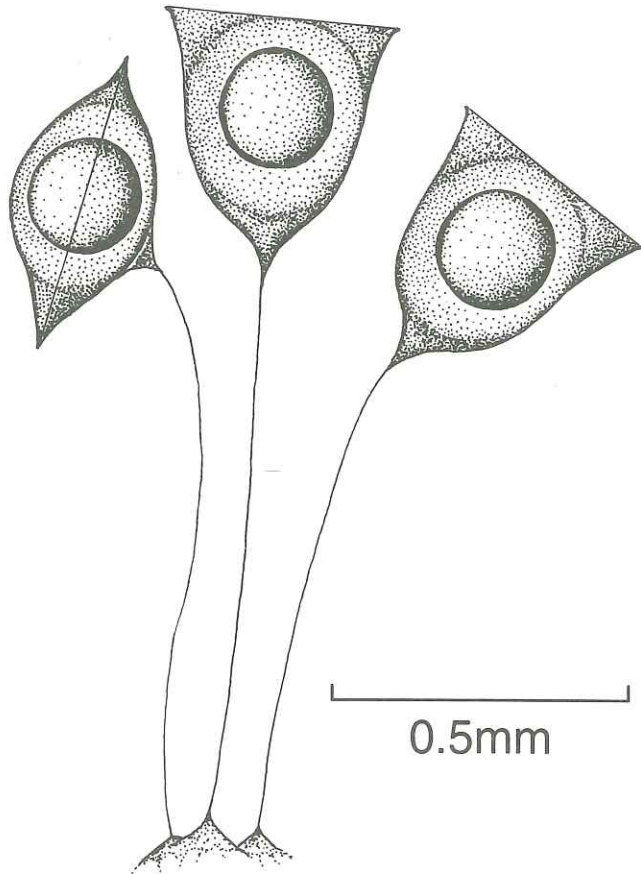
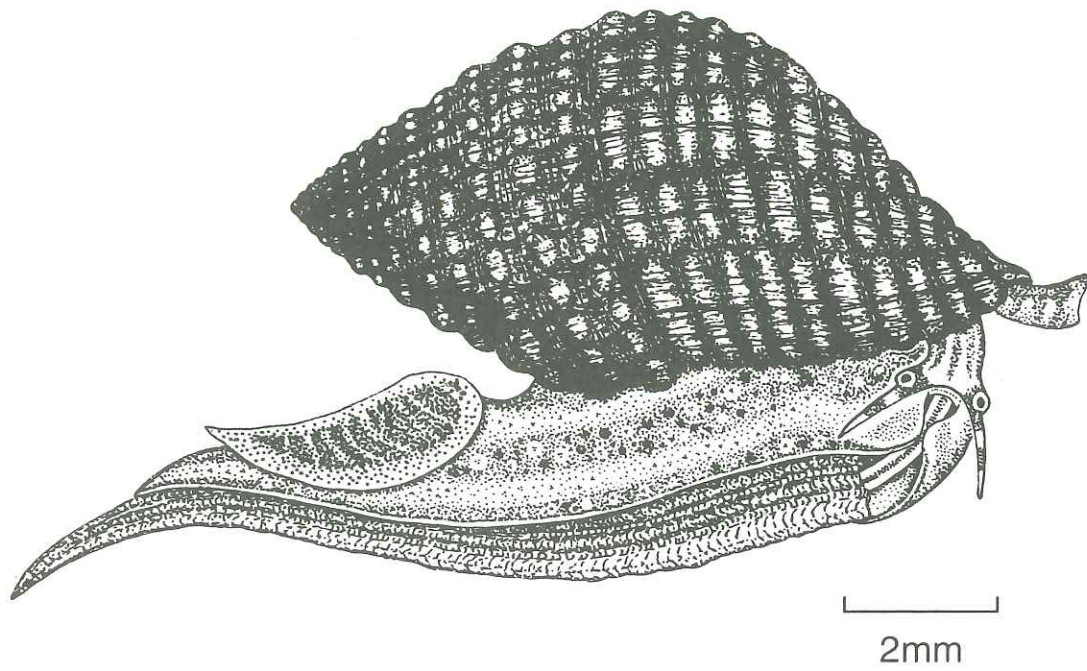
- Bermuda Biological Station for Research
- An artificial reef at Hoi Ha Wan
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How can I undertake research at The Swire Institute of Marine Science?

Publications by Staff and Students (1996-1997)

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Acknowledgments



The predatory gastropod *Engina armillata* feeding on the tubeworm *Pomatoleios kraussi*, plus its egg capsules and the larval shell.

THE INSTITUTE

The Swire Institute of Marine Science is a facility of the University of Hong Kong and was built, initially, with a grant of HK\$12.5 million from The Swire Group of Companies. The laboratory was officially opened as the Swire Marine Laboratory on the 3 November 1990 by Sir John Swire CBE. With effect from the 1 July 1994, the Council of The University of Hong Kong agreed to the laboratory becoming an independent facility of the University of Hong Kong and to the establishment of a new name - The Swire Institute of Marine Science - in recognition of the laboratory's growing importance as an international centre for advanced marine research. The institute was officially re-opened and re-named on the 10 November 1994 by Professor Qu Geping, Chairman of the Environmental Resources Protection Committee of the National Peoples' Congress, China; Sir John Swire CBE, Honorary President of John Swire & Sons Ltd. and Professor Wang Gungwu, Vice-Chancellor of The University of Hong Kong.

Located on the tip of the Cape d'Aguilar Peninsula, Hong Kong Island, the institute allows easy access to a wide range of shore types experiencing various degrees of exposure to wave action. The surrounding waters are probably the cleanest in Hong Kong and the shores are geologically interesting and biologically diverse. The shores and eighteen hectares of sea around the institute were designated as Hong Kong's first marine reserve on the 5 July 1996 and officially opened on the 30 September 1996 by Mr. Bowen Leung, Secretary for Planning, Environment and Lands.

The institute provides research accommodation and equipment for a wide range of both laboratory and field-oriented studies and is the most modern and best equipped marine facility in Hong Kong.

Visitors to the institute can stay in comfortably furnished rooms at the Residence. Capable of accommodating up to twenty-four people in either single, double, or bunk rooms, the Residence also has a lounge/dining room, kitchen, sun balcony and spectacular views to the east and south. A second Residence, adjacent to the original one, and capable of housing up to ten more students and guests, was completed in November 1994.

The institute has two vehicles, a five seater field-truck and a seven seater van. There is a custom-designed, 8 m Boston whaler for marine research and smaller boats for inshore work.

STAFF

The staff of the laboratory are:
Professor Brian Morton, Director
Dr. S.Y. Lee, Resident Scientist (Resigned w.e.f. 3 July 1997)
Dr. Gray A. Williams, Resident Scientist
Dr. Yvonne Sadovy, Resident Scientist
Dr. Huang Qin, Post-doctoral Fellow
Dr. R.L. Cumming, Post-doctoral Fellow (Contract ended from 30 June 1997)
Dr. H.M.C. Chiu, Post-doctoral Fellow
Mr. James C.T. Hui, Senior Technician
Ms. Sylvia S.F. Yiu, Secretary
Mr. Albert C.C. Au, Technician
Mr. Cheung Ming, Driver/Boatman
Mr. Patrick P.C. Chan, Leading Artisan
Mr. M.H. Cheung, Laboratory Assistant
Ms. Pauline P.L. Lam, Clerical Assistant
Mr. K.K. Wong, Artisan/Caretaker
Ms. K.P. Chan, Cleaner/Caretaker
Mr. Graham Blackmore, Student Representative

COMMITTEE OF MANAGEMENT

The Swire Marine Laboratory became an independent facility of the University of Hong Kong and was re-named the Swire Institute of Marine Science with effect from 1 July 1995. At that time too, a Committee of Management was established under the chairmanship of Prof. P.R. Hills, The Centre for Urban Planning and Environmental Management, The University of Hong Kong, with the following terms of reference.

1. To advise the Senate on all matters relating to the Swire Institute of Marine Science.
2. To report annually to the Senate on the activities of the institute.
3. To determine and keep under review the programme and activities of the institute.
4. To advise the Senate and the Vice-Chancellor on any matters which they may refer to it.
5. To determine the budget of the institute within the funds available.
6. To approve for submission to the Senate and Council any triennial proposals for the development of the institute.
7. To appoint Institute Fellows.
8. To approve visiting research appointments in the institute, other than those at professorial level.
9. To approve amendments to regulations for research funds, fellowships, conference grants and other awards for staff and postgraduate students which are wholly based in the institute.
10. To form sub-committees to which outside members may be appointed.

The following are members of the Committee of Management for the period of 1996-1998:

Prof. P.R. Hills, Chairman of the Committee of Management.

Ms. Judy Chung, Secretary, The Registry, The University of Hong Kong.

Mr. J.W. Bradford, Department of Architecture, The University of Hong Kong.

Dr. R. Jack, Corporate Environment Manager, China Light and Power Co.,Ltd..

Dr. L.H.Y. Lee, Former Director of the Agriculture and Fisheries Department, Hong Kong Government.

Dr. S.Y. Lee, The Swire Institute of Marine Science, The University of Hong Kong.

Dr. S.F. Leung, Agriculture and Fisheries Department, Hong Kong Government.

Prof. B. Morton, Director, The Swire Institute of Marine Science, The University of Hong Kong.

Mr. C.J. Pooley, John Swire and Sons (HK) Ltd.

Mr. M.J. Spurling, Appleby, Spurling & Kempe, Bermuda Barristers and Attorneys, Hong Kong.

Prof. T.M. Wong, Dean of the Faculty of Science, Open Learning Institute of Hong Kong.

In addition to the institute's Staff Committee, a Staff/Student Consultative Committee was established with effect from 1 July 1995, and is under the present chairmanship of Mr. G. Blackmore. The committee co-ordinates student matters and reports to and interacts with the Director and the Staff Committee.

RESEARCH PROFILE

As the institute's capabilities have grown, an increasing emphasis is being placed on the subtidal, in particular the corals that grow in Lobster Bay and its rock pools. Ms. Susan Hawkins is completing a study of the productivity of Lobster Bay while Ms. Tracy Clark (a Commonwealth Scholar) has completed her Ph.D. study of the corals of Lobster Bay and the coral pool, under the supervision of Prof. B. Morton. Ms. Denise McCorry (Hong Kong Jockey Club Scholar) is studying the overall biodiversity, distribution and demography of Hong Kong's corals and Dr. Helen M.C. Chiu (China Light and Power Scholar) is researching the Chinese Horseshoe crab with Dr. Huang Qin (Post-doctoral Fellow), both under the supervision of Prof. B. Morton. Ms. Christine Lee is a new student undertaking research on the plankton of the Cape d'Aguilar Marine Reserve.

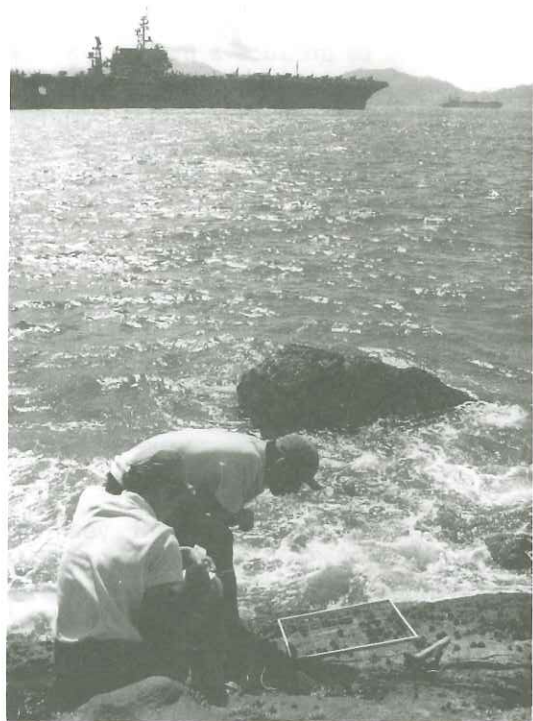
Prof. B. Morton and his students also work at Hoi Ha Wan, Hong Kong's first marine park. Mr. Peter R.J. Collinson has completed a study of the growth and reproduction of corals at Hoi Ha while Mr. Albert W.Y. Leung, Mr. K.F. Leung and Ms. Katherine K.Y. Lam are completing studies of the ecology of an experimental artificial reef, also at Hoi Ha.

The ecological research begun in 1991 of the shores surrounding the institute and constituting the Cape d'Aguilar Marine Reserve, continue. Research in this area is expanding under the supervision of Dr. G.A. Williams and his students are also extending the initial studies made around Cape d'Aguilar to investigate other shores in the territory. Mr. Neil Hutchinson is examining the various processes which control patches of species found in the mid shore region, whilst Mr. Benny Chan Kwok Kan is studying the taxonomy and ecology of barnacles of the genus *Tetraclita*. Mr. Richard Huang has started research on the feeding behaviour of limpets and intertidal productivity. Ms. Celesta Lee is undertaking a higher degree

under the joint supervision of Dr. Williams and Dr. Put Ang of the Chinese University of Hong Kong on the biology and epiphytes of the alga, *Sargassum*. Mr. Charles S.C. Lee is also working on intertidal algae under the joint supervision of Dr. Williams and Dr. G.D. Brown of the Department of Chemistry, The University of Hong Kong, researching the secondary chemicals of these algae which may either attract or repel grazers.

Dr. S.Y. Lee and two students, Mr. Lui Tak Hang and Mr. Wong Lun Cheong work on various aspects of mangrove ecology at the Mai Po Marshes Nature Reserve. Mr. Terence C.W. Fong is completing a study of the seagrass *Zostera japonica* at Lai Chi Wo in the northeastern New Territories.

Dr. Y. Sadovy is supervising four students. Mr. Andrew Cornish (Hong Kong Jockey Club Scholar) and Mr. Ng Wai Chuen study the biodiversity of Hong Kong's coral reef fishes and the local rockfish *Sebasticus marmoratus*, respectively. Mr. Bryan Y.L. Yeung is studying the reproductive behaviour of the anemone fish, *Amphiprion clarkii*, and Mr. Chan Tak Chuen researches sex change in groupers.



Intertidal sampling on the shores at Cape d'Aguilar.

Ms. Chan King, under the supervision of Prof. B. Morton, is completing a study of the effects of pollutants, including TBT, on the intertidal snail *Nassarius festivus* while Mr. Shaun Nicholson is studying the effects of trace metals on the heart rate of the mussel *Perna viridis*.

Ms. Julia Shaw, supervised by Dr. R.T. Corlett of the Department of Ecology and Biodiversity of the University of Hong Kong, is studying local sedges and rushes, including coastal species.

Mr. E.C.M. Parsons has completed, and Ms. Lindsay J. Porter is completing, studies of the Chinese white dolphin, *Sousa chinensis*, in the northwestern waters of Hong Kong, under the supervision of Prof. B. Morton. These studies were financed by a grant from The Hong Kong Government. A new student, Ms. Connie H.Y. Lai, was recently appointed to continue research on the dolphin, also under the supervision of Prof. B. Morton.

A third Swire Scholarship in Wetland Ecology was established in 1994 and its holder, Ms. Winnie S.M. Tang, has completed a study to establish a marine coastal Geographic Information System database for Hong Kong in which the marine flora and fauna has been inventoried to produce a marine management plan and maps and other visual aids to interpret Hong Kong's coastal communities. This project was supervised by Prof. B. Morton (Science) and Mr. J.W. Bradford (Architecture).

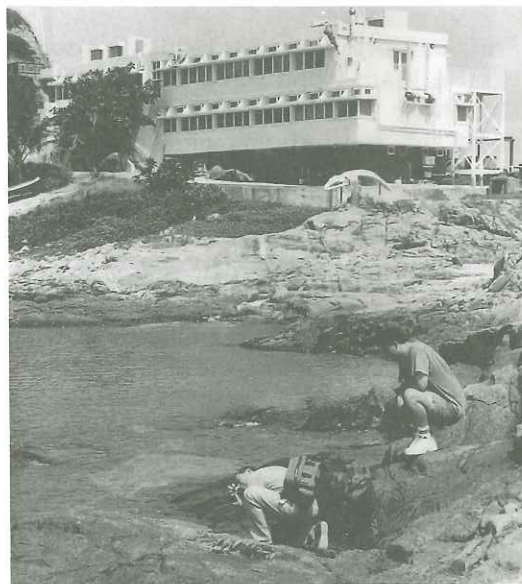
NEW DEVELOPMENTS

1997 was another important year for the institute in that the Swire Group of Companies have agreed to donate a further sum of HK\$34 million to the University of Hong Kong to build a Marine Conservation and Education Centre adjacent to the institute. The architect for this Phase III development is Mr. K.Y. Kung of Atelier VIII

and detailed plans are now being drawn up and a site investigation has been completed.

The Centre will serve as a research and educational facility in the fields of coastal zone management and marine conservation. The centre will also act as a Management Office for the Cape d'Aguilar Marine Reserve and accommodate the growing library and museum reference collection, allowing wider use and releasing space within the institute itself for much needed further research developments.

Work proceeded over the summer of 1997 to catalogue and computerize the infant Reference Collection of Hong Kong's Marine Flora and Fauna. This was aided considerably by the appointment of a summer student, Ms. S.L. Yau, to work on this with the G.I.S. database. With the establishment of the Reference Collection in the proposed Marine Conservation and Education Centre, all workers at the institute will be required to lodge voucher specimens in it to ensure conformity of identification and to build up and expand the marine G.I.S. database.



Access to shores at Cape d'Aguilar for ecological observations is very convenient.

In June 1997, the Vice-Chancellor of the University of Hong Kong set up a Task Force with a single Term of Reference "To review the financial viability of the Swire Institute of Marine Science". The task force, chaired by

Pro-Vice-Chancellor Professor W.I.R. Davies, also comprised Professor B.J. Duggan (Department of Mechanical Engineering) and the Director of Finance, represented by Mrs. K.W.K. Lee, Deputy Director of Finance. The report of the Task Force is awaited.

FUTURE PLANS

During 1998, the staff will consolidate the research activities currently underway at the institute into a research strategy that reflects the future needs of Hong Kong in the field of marine research. In 1996, legislative control of the Cape d'Aguiar Marine Reserve came into effect and efforts have been directed by the Country and Marine Parks Board of the Hong Kong Government towards its management, in co-operation with the staff and students of the institute. With the opening of the proposed Marine Conservation and Education Centre, moreover, the institute's work will find new directions in terms of marine conservation and management and provide the potential to achieve the goal of having its research results translated into better, marine-oriented, teaching materials and wider array of programmes. The institute will also become much more involved in coastal zone management.

THE LIBRARY

From 1 July 1994, when the institute became an independent facility, allocations for book purchases have been sought directly from the Library Committee, along with other non-faculty units. The institute has a basic aim of providing a comprehensive marine library for staff, students and visitors and this, with the help of University colleagues, is growing.

Upon his retirement from the University of Hong Kong in 1990, Professor B. Lofts

donated runs of a number of important journals to the institute. In 1993, the widow of the late Professor R.D. Purchon (University of London) also donated part of her husband's library to the institute.

In 1995, upon his retirement from the University, Professor T.J. Biscoe (Deputy Vice-Chancellor) generously donated his collection of the *Journal of Physiology* and *British Journal of Pharmacology* to the institute's library.

In May 1996, Dr. Y. Sadovy organized the donation of four series of science journals (*Copeia*, *Ecology*, *North American Journal of Fisheries Management* and *Transactions of the American Fisheries Society*) to the institute's library from Dr. G. Huntsman, formerly of the Fisheries Laboratory, National Marine Fisheries Service, NOAA, Beaufort, North Carolina, U.S.A.

In June 1997, Dr. S.Y. Lee upon his emigration to Australia, generously donated eleven series of journals to the library. At the same time, and upon his retirement, Dr. Y.B. Ho, Department of Botany of the University of Hong Kong, donated his collection of journals to the library.

The institute also benefits from the lodgement in it of the library of the Marine Biological Association of Hong Kong which has been built up through exchange of its journal *Asian Marine Biology*. We now shelve 217 titles through this exchange and have back runs of most Chinese marine journals.

HEALTH AND SAFETY

The institute has a comprehensive Health and Safety Policy which is spelt out clearly in a Health and Safety Manual issued to everyone working at the institute. The Manual was revised during 1996 to keep pace with the provision of new equipment, the use of a wider array of chemicals and boat and diving facilities. Mr. P.P.C. Chan is the First Aid Officer and Mr. J.C.T. Hui is the institute's Safety Representative.

EVENTS

22 November 1996

The Biology Society, The University of Hong Kong: to visit the institute and to assist in cleaning up the beach.

26-28 November 1996

Each day, 26 primary three children and six adults of the Clearwater Bay School: to visit the institute and undertake exercises in marine biology.

From 30 November to 1 December 1996

Mr. Ian Thomas of Mandarin Divers and a group of divers to participate in a course on underwater photography.

7 December 1996

The Geography Society of Hoi Ping Chamber of Commerce Secondary School: to tour the institute.

17 December 1996

Staff of the Centre for Physical Education and Sport, The University of Hong Kong: to hold a staff retreat at the institute.

23 December 1996

Twenty-two members of the Hong Kong Laboratory Technicians' Association toured the institute's facilities and was briefed on its research work by Mr. James Hui (Senior Technician).

31 December 1996

The Association of Laboratory Assistants and Technicians in the Education Department of the Hong Kong Government visited the institute and was given a briefing by the Senior Technician, Mr. C.T. Hui.

12 February 1997

Staff of the Faculty of Education, The University of Hong Kong: to have a staff retreat at the institute.

21 February 1997 (PM)

Twenty secondary students (certified divers) of Hong Kong International School: to visit the institute and be given a brief introduction to its work by our post-graduate students.



Mr. James Hui, Senior Technician, with members of the Hong Kong Laboratory Technicians' Association at the institute on 23 December 1996.

24 February 1997

The Science Society of La Salle College: to visit the institute.

24 February, 3 March and 5 March 1997

Three groups of students (70, 40 and 40 persons, respectively) from the Department of Architecture, The University of Hong Kong: to visit the institute.

1 March 1997

Twenty members of The University of Hong Kong Management Alumni Society visited the institute. The Director gave a talk about the work of the institute and led a conducted tour of its facilities.

10 April 1997 and 1 May 1997

Mr. R. Weir of Cathay Pacific Airways Ltd.: to tour the institute in order to sketch, measure and photograph the surrounding landscape.

14 April 1997

Forty-five students from the B.Sc. Coastal Ecology Course, Department of Ecology and Biodiversity, The University of Hong Kong: to participate in a one day presentation of their projects.

25 April 1997

NHK, Hong Kong Bureau (Japan Broadcasting Corporation): to interview Prof. B. Morton on the subject of the Chinese white dolphin.

29 April 1997

One hundred and nine F.4 Geography students and four teachers of Diocesan Girls' School: to have a field trip at Cape d'Aguilar.

4, 11, 18 and 25 May 1997

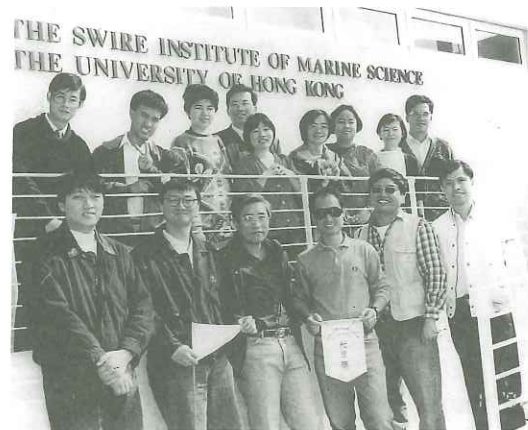
Sixty undergraduate students, in three groups, of the Open Learning Institute of Hong Kong: to receive seminars and conduct field work at Cape d'Aguilar.

14 May 1997

Thirty staff of the Department of Education, The University of Hong Kong: to have a departmental retreat at the institute.

22 May 1997

Staff of the Physical Education and Sports Science Unit, The University of Hong Kong: to have a staff retreat at the institute.



Members of the Association of Laboratory Assistants and Technicians in the Education Department of the Hong Kong Government during their visit to the institute on 31 December 1996, with Mr. James Hui, Senior Technician.

12 June 1997

A Special PADI Night Diver Training Course was organized by Mr. Paul Hodgson at the institute for four research students. The training covered three aspects: lectures, pre-dive briefings and two night dives.

17 June 1997

UHB (Fuji Television Network, Inc.): to interview Prof. Morton about marine pollution in Hong Kong.

7 July 1997

Tsang Pik Shan Secondary School: twenty members of the Geography Society, to have a field trip at Cape d'Aguilar, and twenty-three members of the Biology Society, to visit the museum and laboratory.

14 August 1997

Fifty children (aged between 8 to 12) of Sheng Kung Hui Sheung Hui Social Service Centre: to visit the institute as a part of their summer activities.

19 August 1997 (PM)

Thirty-four children (aged between 10 to 12) of Tsung Tsin Mission Social Service Division, Pok Hong Children and Youth Centre: to visit the institute and have a tour of the laboratory.

29 September 1997

Sixth form students from South Island School: to undertake fieldwork and have seminars on the work of the institute.

30 September 1997

The directors of the United Filmmakers Organization: to visit the institute.

OFFICIAL VISITORS

11 March 1997

Mr. Rod Hall MBE, co-ordinator of the British Airways Assisting Conservation Programme and Dr. C. Swennen from the Netherlands: to discuss issues related to marine conservation in Hong Kong with Prof. B. Morton.

14 March 1997

Ms. Anna Prichard of Montgomery Watson, H.K.: to visit the institute library in order to obtain references related to marine pollution in Hong Kong.

18 March 1997

Drs. Joanna and Norman Jones, Port Erin Marine Laboratory, Isle of Man, United Kingdom: to visit the institute.

19 May 1997

Ms. Laura Wong from Heriot-Watt University, Edinburgh, U.K.: to discuss the facilities that are available for use by visiting students.

22-25 May 1997

Prof. M.H. Depledge and Prof. M. Jones of the University of Plymouth, U.K.: to visit the institute and have discussions on future collaborative research.

8 June 1997

The Hon. Christine Loh, Chairman, Environmental Affairs Panel, Legislative Council, to visit the institute and have discussions with Prof. B. Morton.

19 June 1997

Prof. W.I.R. Davies, Prof. B.J. Duggan, Mrs. K.W.K. Lee, Mrs. V.W.C. Tang and Ms. L.M. Tang, members of the Vice-Chancellor's Task Force on the financial viability of the Institute:

to tour the institute and be briefed on its work by the director.

10 July 1997

Dr. Yougan Wang, a biostatistician working in the Division of Marine Research, CSIRO, Australia: to visit the institute and to discuss the possibility of applying his research in Hong Kong.

24 September 1997

Four delegates from the National Natural Science Foundation of China: to visit the institute and meet the director and staff and learn about the research on marine science at the institute and plans for its development.



The Hon. Christine Loh, Honorary President of the Marine Biological Association of Hong Kong during her visit to the institute pictured with the Director, Prof. B. Morton

RESEARCH VISITORS

2-5 November 1996

Dr. Nguyen Huu Phung, Institute of Oceanography, Vietnam: to identify Hong Kong coral reef fishes with Dr. Y. Sadovy.



Prof. G. Chelazzi (Firenze, Italy) monitoring limpet heart rates on the shore.

2-6 November 1996

Dr. J.D. Taylor and Dr. E. Glover, Department of Zoology, The Natural History Museum, London, U.K.: to undertake research on Hong Kong shores.

2-11 November 1996

Prof. A.M. de Frias Martins, Department of Biology, University of the Azores, Portugal: to undertake research and to work with Prof. B. Morton on joint research activities.

11-23 November 1996

Dr. N.L. Bruce, The Zoological Museum, The University of Copenhagen, Denmark: to work with Ms. Li Li on the isopods of Cape d'Aguilar shores under the terms of the Laurence Caplin Scholarship.

From 23-25 November 1996

Dr. Alan Hodgson, Rhodes University, South Africa: to visit the institute to collect limpets from sites in the New Territories and have discussions with Dr. G.A. Williams on collaborative research.

26 February 1997 to 28 March 1997

Prof. Z.G. Huang, Third Institute of Oceanography, Xiamen, China: to collect fouling organism samples in Hong Kong's winter, under the terms of an Academic Link with the institute.

14-24 March 1997

Prof. J.C. Britton, Department of Biology, Texas Christian University, U.S.A.: to undertake joint research with Prof. B. Morton on the marine ecology of the Azores, Portugal.

1-18 April 1997

Dr. M. Cusack, Department of Geology and Applied Geology, University of Glasgow, U.K.: to collect samples of *Lingula anatina* and to work on the brachiopod *Discinisca stellae*.

16-28 April 1997, 3-9 May 1997, and 29 June to 3 July 1997

Dr. Amanda Vincent, McGill University, Canada: to work with Dr. Y. Sadovy on a book chapter.

17-30 April 1997

Dr. D.S. Jones, Western Australian Museum, Perth, Australia: to undertake research on intertidal barnacles.

19 September to 12 October 1997

Dr. D.R. Gray, Department of Zoology, the University of Western Cape, South Africa, to undertake research at the institute on limpet rhythms in collaboration with Dr. G.A. Williams under the terms of the Laurence Caplin Scholarship.

4-14 October 1997

Prof. Guido Chelazzi, Department of Animal Biology and Genetics, The University of Firenze, Italy: to undertake collaborative research with Dr. G.A. Williams on monitoring molluscan heart beats relative to behavioural rhythms on the shore.

5 October 1997

Prof. J.G. Malpas and staff and students from the Department of Earth Sciences of The University of Hong Kong: to discuss with the director the possibility of research at the institute.

14 October to 10 November 1997

Mr. J. Russell and Mr. S. Freeman, School of Ocean Sciences, University of Wales, Bangor, U.K.: to undertake research, under the terms of the tripartite agreement, on the feeding

biology of the stalked barnacle, *Capitulum mitella*, together with aspects of the biology of its nemertean symbiont, *Nemertopsis quadripunctatus*, and on the foraging behaviour of the intertidal urchin *Acanthocnidas crassispina* (Echinodermata) in Hong Kong, respectively.

THE SHORT-TERM VISITORSHIP SCHEME

The institute's Short-Term Visitorship Scheme is financed through profits made from the sale of souvenir items and marine biological books published by Hong Kong University Press.

Funded by a loan of HK\$81,695 from the University of Hong Kong in 1990, the sale of souvenir items for the financial year up until 30 September 1997 amounted to HK\$7,085; proceeds from the sale of books was HK\$13,945.

VISITOR STATISTICS

In previous reports, statistics related to the usage of the institute by various categories of research workers and visitors has been provided. These data are no longer either worth analyzing or meaningful because the institute is now overfull and some groups of visitors have had to be turned away because of the lack of space. In the main laboratory, resident research students and visitors have to share benches and staff offices. The staff research laboratory is occupied by students and visitors and the bench in the Museum is occupied by genetics equipment and post-doctoral fellows.

THE RESIDENCE STATISTICS

In previous reports, statistics related to the occupancy of the Residence by students and visitors has been provided. Such data are again no longer either worth analyzing or meaningful because the Residence is essentially full. All rooms are occupied with the exception of two visitor's rooms one of which is reserved for an incoming student from China and the other is kept free for visitors whose visits now have to be co-ordinated closely so as not to clash.

DONATIONS TO THE INSTITUTE

The following donations have been made to the institute to assist in its research.

Dr. G. Huntsman
(Formerly of the Fisheries Laboratory, National Marine Fisheries Service, NOAA, Beaufort, North Carolina, U.S.A.)
Donation of journals to the Institute's library.

Mr. Ian Thomas
Mandarin Divers,
Marine Services Ltd.,
Padi 5 Star Training Centre.
HK\$2,000 to be used for research work at the institute.

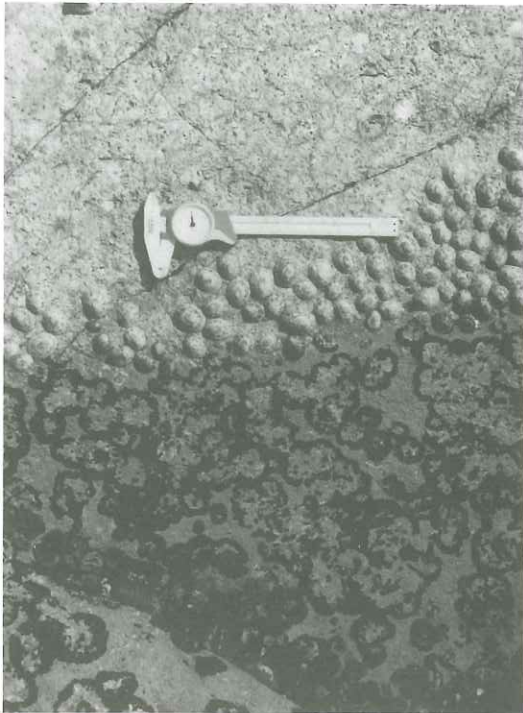
Mr. C.J. Pooley
Hong Kong United Dockyards.
A ship-to-shore radio for the Boston Whaler.

Dr. S.Y. Lee
(Formerly Resident Scientist at the Swire Institute of Marine Science)
Donation of journals to the Institute's library, and HK\$16,000 towards the publication of a

proceedings volume on the Mangrove Workshop held in 1993.

Dr. Y.B. Ho
(Formerly of the Department of Botany, The University of Hong Kong)
Donation of his collection of journals to the institute's library.

South Island School.
Donation of HK\$500 to be used for research work at the institute.



Limpets, *Cellana grata*, at rest around a rock pool during low tide in summer to reduce heat stress.

ACADEMIC ACTIVITIES

STAFF

Professor B. Morton

- (i). Predatory gastropods of Cape d'Aguilar shores (with Dr. J.D. Taylor, Natural History Museum, London).
- (ii). Evolution of anomalodesmatan bivalves (with Dr. E. Harper, University of Cambridge).
- (iii). The intertidal ecology of the Cape d'Aguilar Marine Reserve.
- (iv). Shore ecology of the Azores (with Prof. J.C. Britton, Texas Christian University and Prof. A.M. Frias Martins, University of the Azores).
- (v). Ecology of Shell Beach, Shark Bay, Western Australia.

Dr. S.Y. Lee

- (i). Ecology of the Mai Po Marshes Nature Reserve.
- (ii). Ecophysiology of the green mussel *Perna viridis* (with Dr. S.G. Cheung, City University of Hong Kong).
- (iii). Ecology of local seagrasses (with Prof. R.S.S. Wu, City University of Hong Kong).

Dr. Y. Sadovy

- (i). The reproductive biology of two fish species at Cape d'Aguilar, the wrasse, *Halichoeres dussumieri*, and the rockfish, *Sebastes marmoratus*.
- (ii). Early sexual development and the possible influence of social factors on sexual differentiation in juvenile groupers.

Dr. G.A. Williams

- (i). Algae-herbivore interactions on Cape d'Aguilar shores.
- (ii). The behaviour and physiology of high shore limpets.



Mr. R. Huang setting up exclusion plots to investigate intertidal primary production.

POST-DOCTORAL FELLOWS

From 31 May 1996 to 30 April 1999, Dr. Huang Qin was appointed as a University of Hong Kong Post-doctoral Fellow at the institute. Dr. Huang is researching the genetics of Chinese horseshoe crabs and undertaking a joint study of heavy metal effects on the genetic and physiological variations in the marine flagellate alga *Pavlova viridis* with Prof. Bi-lian of the College of Bioengineering, Fujian Normal University.

From 1 July 1996 to 30 June 1997, Dr. R. L. Cumming was appointed as a Post-doctoral Fellow to undertake research on the effects of predation upon living corals in Hong Kong by the carnivorous gastropod *Drupella rugosa*.

From 1 May 1997 to 30 April 1998 Dr. H.M.C. Chiu, was appointed as a Post-doctoral Fellow (China Light and Power Scholar) to undertake research with Dr. Huang Qin and Prof. Morton on the Chinese horseshoe crabs.

RESEARCH FELLOWS



Mr. G. Blackmore, a Ph.D. student, preparing samples for trace metal analysis.

The following persons have been appointed as Research Fellows at the Swire Institute of Marine Science by the Swire Institute of Marine Science Committee of Management of the University of Hong Kong.

Prof. J.C. Britton Ph.D. (George Washington), Department of Biology, Texas Christian University, Forth Worth, Texas, U.S.A.

Dr. M.J. Broom Ph.D. (Malaysia), Environmental Protection Department, Hong Kong Government.

Dr. Alice L.C. Chan Ph.D. (Hong Kong), Department of Applied Science, the Vocational Training Council Technical College, Hong Kong.

Prof. Laurie H.M. Chan Ph.D. (London), School of Dietetics and Human Nutrition, McGill University, Montreal, Canada.

Dr. S.G. Cheung Ph.D. (Hong Kong), Department of Biology and Chemistry, The City University of Hong Kong.

Dr. R.Y.H. Cheung Ph.D. (Manchester), Department of Biology and Chemistry, The City University of Hong Kong.

Dr. M. Davies Ph.D. (Victoria University of Manchester), Ecology Centre, University of Sunderland, U.K.

Dr. E.M. Harper Ph.D. (Open University), Department of Earth Sciences, University of Cambridge, U.K.

Mr. P.A. Hodgson, Technical Director, Koywa Group, Hong Kong.

Prof. Huang Zong Guo, Third Institute of Oceanography, State Oceanic Administration, Xiamen, China.

Prof. R.T. Kneib Ph.D. (University of North Carolina), University of Georgia Marine Institute, Sapelo Island, U.S.A.

Dr. S.Y. Lee Ph.D. (Hong Kong), Associate Professor, Faculty of Environmental Sciences, School of Applied Science, Griffith University, Australia.

Dr. S.F. Leung Ph.D. (Hong Kong), Agriculture and Fisheries Department, The Hong Kong Government.

Prof. Liu Ruiyu, Research Professor, Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China.

Dr. R.G. Ong Che Ph.D. (Hong Kong),
Department of Applied Science, Vocational
Training Council Technical College, Hong
Kong.

Prof. P.S. Rainbow Ph.D. (Wales), Queen
Mary and Westfield College, University of
London, U.K.

Dr. J.D. Taylor Ph.D. (London), Department of
Zoology, The Natural History Museum,
London, U.K.

Dr. A.C.J. Vincent Ph.D. (Cambridge),
Department of Biology, McGill University,
Montreal, Canada.

Prof. C.S. Wong Ph.D. (University of
California, San Diego), Senior Scientist/Team
Leader, Ocean Biogeochemistry, Institute of
Ocean Sciences, Canada.

Dr. N.Y.S. Woo Ph.D. (Hong Kong),
Department of Biology, The Chinese
University of Hong Kong.

Prof. R.S.S. Wu Ph.D. (British Columbia),
Head, Department of Biology and Chemistry,
The City University of Hong Kong.

Prof. Zhou Mingjiang, Research Professor /
Director, The Institute of Oceanology, Chinese
Academy of Sciences, Qingdao, China.

Prof. Zou Ren Lin, South China Sea Institute
of Oceanology, Academia Sinica, Guangzhou,
China.

INSTITUTE FELLOWS

The following persons have been appointed as
Institute Fellows at The Swire Institute of
Marine Science by the Swire Institute of
Marine Science Committee of Management of
The University of Hong Kong.

Mr. J.W. Bradford M.Arch. (VPI and State),
Department of Architecture, The University of
Hong Kong.

Dr. B.W. Darvell Ph.D. (Birmingham), Dental
Materials Science Unit, Prince Philip Dental
Hospital, The University of Hong Kong.

Prof. M.D. Dickman Ph.D. (British Columbia),
Department of Ecology and Biodiversity, The
University of Hong Kong.

Prof. I.J. Hodgkiss Ph.D. (Wales), Department
of Ecology and Biodiversity, The University of
Hong Kong.

Dr. Liu Jianhua Ph.D. (Hong Kong), The
Centre for Urban Planning and Environmental
Management, The University of Hong Kong.

HIGHER DEGREE STUDENTS

The following students are currently
registered with the Faculty of Science of The
University of Hong Kong to read for a higher
degree at the institute.

Mr. G.R. Blackmore B.Sc. (London),
(Ph.D.)
Trace metals in Hong Kong's predatory
gastropods.

Ms. Chan King B.Sc. (Hong Kong),
(Ph.D.)
Effects of pollution on the life history
strategy of *Nassarius festivus*.

Ms. Mony I.M. Chin B.Sc. (Hong Kong),
(Ph.D.)
Intraspecific variation in *Monodonta labio* on
boulder shores at the bottom of mangroves
and on rocky shores.

Ms. Tracy Clark B.Sc. (Glasgow),
(Ph.D.)
The ecology of Cape d'Aguilar corals.



A new Ph.D. student, Ms. Christine Lee obviously enjoys her work!

Ms. Susan Hawkins B.Sc. (Newcastle),
(Ph.D.)
The productivity of Lobster Bay.

Ms. Katherine K.Y. Lam B.Sc. (Hong Kong),
(Ph.D.)
The Colonisation of an Experimental Artificial Reef at Hoi Ha Wan Marine Park, Hong Kong.

Ms. Christine N.W. Lee B.Sc. (Hong Kong),
(Ph.D.)
Ecology of Cape d'Aguilar Marine Reserve plankton.

Mr. Albert W.Y. Leung M.Phil. (Hong Kong),
(Ph.D.)
Fisheries enhancement potential of the Hoi Ha Wan Experimental Artificial Reef.

Mr. K.F. Leung B.Sc. (Hong Kong),
(Ph.D.)
Leaching of trace metals from the Hoi Ha Wan Experimental Artificial Reef.

Ms. Li Li B.Sc. (He Bei),
(Ph.D.)
Ecology of intertidal isopods.

Ms. Denise McCorry B.Sc. (London) M.Sc.
(Newcastle)
(Ph.D.)
The biodiversity of Hong Kong's corals.

Mr. S. Nicholson B.Sc. (Sunderland),
(Ph.D.)
Ecophysiology of and biomarkers in marine mussels.

Mr. Li Zhengyan B.Sc. (Nanjing),
(Ph.D.)
The effects of Tributyltin (TBT) on predatory gastropods.

Ms. Lindsay J. Porter B.Sc. (Aberdeen),
(Ph.D.)
The taxonomy, distribution and biology of the Chinese white dolphin, *Sousa chinensis*.

Ms. Julia Shaw B.Sc. (Exeter),
(Ph.D.)
The taxonomy, geography and ecology of Hong Kong sedges and rushes.

Mr. Benny K.K. Chan B.Sc. (Hong Kong),
(Ph.D.)
Ecology of the intertidal barnacles *Tetraclita* spp.

Mr. Andrew Cornish B.Sc. (Nottingham),
(Ph.D.)
Seasonality in Hong Kong's coral associated fish.

Mr. Terence C.W. Fong B.Sc. (Hong Kong),
(M.Phil.)
Ecology of Hong Kong seagrasses.

Mr. Richard Huang B.Sc. (Hong Kong),
(M.Phil.)
Feeding ecology of the limpet *Cellana grata*.

Mr. N. Hutchinson B.Sc. (Sunderland),
(M.Phil.)
Patch dynamics on rocky shores.

Ms. Connie H.Y. Lai B.Sc. (Hong Kong),
(M.Phil.)
Behaviour of the Chinese white dolphin (*Sousa chinensis*).

Mr. Patrick P.F. Lau B.Sc. (Hong Kong),
(M.Phil.)
The reproductive biology of Threadfin bream, *Nemipterus japonicus* and *N. virgatus*.

Ms. Celesta C.W. Lee B.Sc. (Hong Kong),
(M.Phil.)

Epiphytes of *Sargassum* in Long Ke Wan, Hong Kong.

Mr. Charles S.C. Lee B.Sc. (Hong Kong), (Ph.D.)
Identification of secondary chemicals produced by algae.

Ms. Priscilla T.Y. Leung B.Sc. (Hong Kong), (M.Phil.)
The ecology of stalked barnacles in Hong Kong.

Mr. Ng Wai Chuen B.Sc. (Hong Kong), (M.Phil.)
Biology of the rockfish *Sebastes marmoratus*.

Mr. Bryan Y.L. Yeung B.Sc. (Hong Kong), (M.Phil.)
Reproductive behaviour of reef fish.



Mr. Neil Hutchinson, a Ph.D. student, preparing field experiments for his research.

NEW ARRIVALS

From 13 January 1997, Ms. Sylvia S.F. Yiu was appointed as institute Secretary.

From 1 February 1997, Mr. Li Zhengyan. To read for a Ph.D. degree under the supervision

of Prof. B. Morton on the effects of TBT on predatory gastropods.

From 1 March 1997, Ms. Priscilla T.Y. Leung. To read for a M.Phil. degree under the supervision of Prof. B. Morton on the ecology of stalked barnacles in Hong Kong.

From 1 September 1997, Mr. Chan Tak Chuen started work for his M.Phil. degree on the reproductive biology of groupers under the supervision of Dr. Y. Sadovy.

From 1 September 1997, Ms. Mony I.M. Chin, started work for her Ph.D. degree with Dr. G.A. Williams investigating variation in *Monodonta labio* on boulder shores at the bottom of mangroves and on rocky shores.

UNDERGRADUATES

Ms. Mony M.I. Chin and Ms. Wendy Leung completed their undergraduate final year project on spatial patterns of diversity in barnacle clumps and productivity levels associated with pollution gradients and size in intertidal herbivores, respectively, under the supervision of Dr. G.A. Williams.

Mr. Jason Y.L. Lau and Ms. K.W. Ma completed their undergraduate final year project on the foraging behaviour of the swimming crab *Portunus pelagicus* and the Little egret *Egretta garzetta*, respectively, under the supervision of Dr. S.Y. Lee.

Ms. Rose Chan started her undergraduate project under the supervision of Dr. G.A. Williams investigating the effect of starvation and food abundance on feeding behaviour in intertidal molluscs.

Ms. Zoe S.Y. Lau is undertaking a final year B.Sc. project on oyster predation under the supervision of Prof. B. Morton.

Ms. Lily Ng began her undergraduate project working on appropriate manipulation techniques to exclude high shore littorinids with Dr. G.A. Williams.

SUMMER STUDENTS

From 30 April to 20 May 1997, Mr Andrew Manko from Florida State University was appointed as a summer research assistant to assist with research on the Chinese white dolphin.

The following volunteer students undertook work at the institute.

From 23 December 1996 to 9 January 1997 and 5 April to 4 June 1997, Mr. Matt Edwards, University of Oxford undertook research on the behaviour of high shore limpets, *Cellana* and *Collisella* species, with Dr. G.A. Williams.

From 23-28 February 1997, Mr. Yu Ka Sing and Ms. Bo Bo Chan from Li Po Chun United World College, helped with research students' projects.

From 3-9 May 1997, Mr. Stephen Casey, a Ph.D student from McGill University, Canada: to obtain specimens for his genetics research.

From 18-25 June 1997, Mr. Simeon Pang of King George V School, Kowloon: to gain work experience at the institute.

From 14 July to 6 August 1997, Mr. Keith Tsui from the University of California, Los Angeles, undertook a marine internship at the institute.

From 12 August to 29 August 1997, Miss Joanne Nicholson from Edinburgh University, Scotland, U.K., worked with the dolphin group.

STAFF TRAINING

Mr. Cheung Ming Hong completed a first aid course organized by the St. John's Ambulance Brigade in September 1997.

Ms. Sylvia S.F. Yiu completed a computer course entitled "Introduction to Microsoft Access 95" provided by SPACE, The University of Hong Kong in October 1997.

STAFF AND STUDENTS' ACTIVITIES

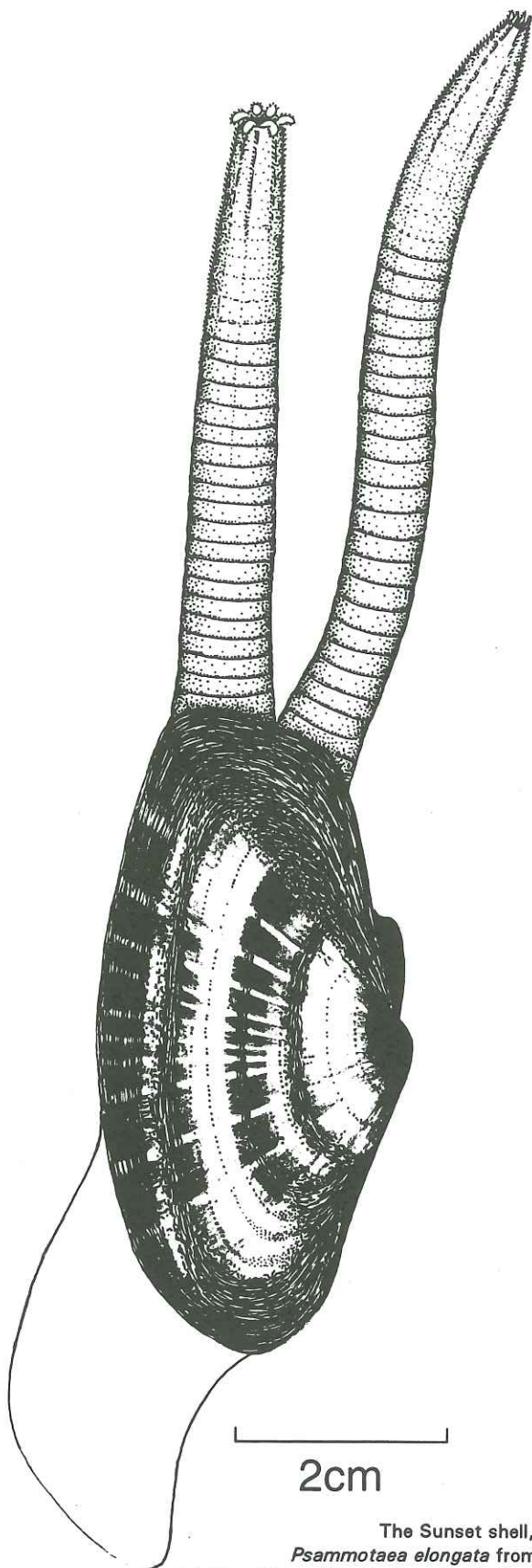
In December, Dr. G.A. Williams visited the Department of Zoology and Entomology, Rhodes University, South Africa to undertake collaborative research with Prof. C.D. McQuaid and to give a research seminar.

From 7-9 December 1996, Prof. B. Morton visited the Department of Biology, The National University of Singapore and had discussions concerning a proposed marine research institute. He also gave a seminar entitled "Hong Kong's Marine Parks Ordinance: protecting local marine biodiversity and the role of the Swire Institute of Marine Science".

From 9-20 December 1996, Prof. B. Morton was appointed as an Honorary Research Associate at the Western Australian Museum, Perth, Australia, where he undertook research on the shore ecology of southwestern Australia.

On 20 December 1996, Mr. S. Nicholson visited Dr. P.D. Abel (University of Sunderland) for discussions on the monitoring of TBT in the marine environment.

On 10 February 1997, Dr. Q. Huang visited Fuzhou Aquatic Science Research Institute and had discussions with the Director, Mr. Fen-shen Chen, and the Deputy Director of Fuzhou Fisheries Bureau, Mr. Zhou, concerning scientific collaboration for the conservation of Fuzhou's marine resources.



The Sunset shell,
Psammotaea elongata from
Pak Tam Chung Beach, New Territories.

On 11 February 1997, Dr. Q. Huang visited The College of Bioengineering, Fujian Normal University, and discussed with the Dean, Prof. Song-gang Wu, joint research on the selection of strains of marine algae for particular applications in industry.

On 8 May 1997, Ms. Christine N.W. Lee visited the Ocean Research Institute, University of Tokyo, to have discussions with Prof. Shinichi Uye on copepod identification.

On 12 May 1997, Ms. Christine N.W. Lee visited Tokyo University of Fisheries to have discussions with Prof. Makoto Omori.

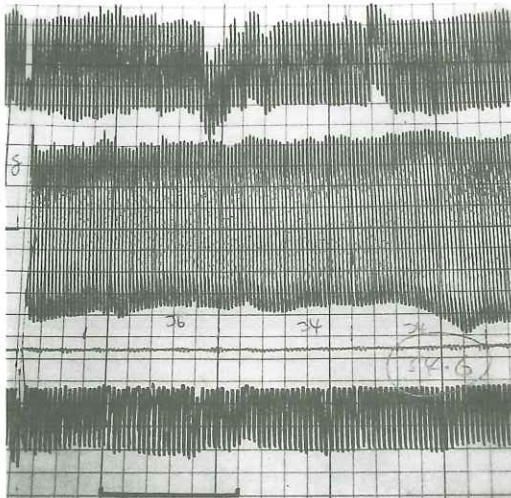
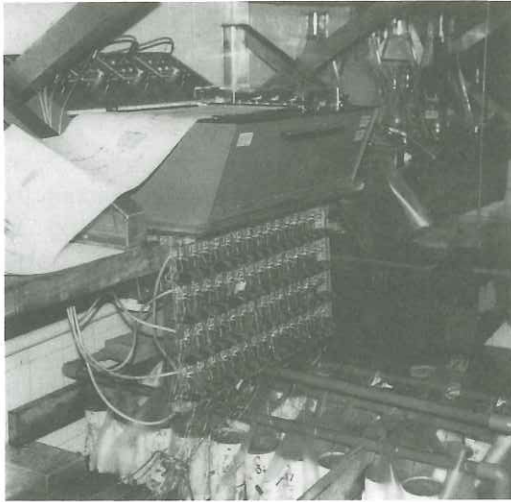
From 1-14 June 1997, Dr. G.A. Williams was appointed as a Visiting Professor to the University of Firenze, Italy, where he taught a course on intertidal community ecology and discussed a collaborative research programme with Prof. G. Chelazzi and Dr. G. Santini.

In July, Dr. G.A. Williams was an invited Instructor on an Advanced Study Course entitled "Interactions of physical and biological factors in the surf and swash zone of European rocky shores", a project supported by the European Union in the framework of the Marine Science and Technology Programme (MAST III) held at Port Erin, Isle of Man, United Kingdom.

In July, Mr. Benny K.K. Chan attended part of an advanced study course on "Interactions of physical and biological factors in the surf and swash zone of European rocky shores" at Port Erin, Isle of Man, and presented a seminar on his research in Hong Kong.

From 15 July to 8 August 1997, Ms. Julia Shaw visited the Royal Botanic Gardens in Kew and Edinburgh, and the Natural History Museum, United Kingdom: to check type material and to take photos for the internet on the taxonomy of Cyperaceae.

On 16 July 1997, Ms. Katherine K.Y. Lam visited the headquarters and fish farms of the Fiji Department of Fisheries and also joined a tour to a remote traditional fishing village.



Mr. Shaun Nicholson, a Ph.D. student at the institute monitors the heart rate of mussels subjected to pollution stress (above, an experiment in progress and below, sample heart rate traces.

From 17 July to 2 August 1997, Prof. B. Morton undertook research on shore ecology at the University of the Azores, Azores, Portugal.

From 1-31 August 1997, Dr. Y. Sadovy visited the Coral Reef Research Institute in Palau for collaborative research on reef fish.

From 2-5 August 1997, Prof. B. Morton visited the Department of Earth Science. The University of Cambridge, U.K., where he undertook collaborative research with Dr. E.M. Harper.

From 5-20 August 1997, Prof. B. Morton visited the Department of Biology, Texas

Christian University, Texas, USA., where he undertook collaborative research with Prof. J.C. Britton.

On 7 August 1997, Dr. Q. Huang visited Fuzhou Aquatic Science Research Institute for discussions on a joint investigation of the distribution of the horseshoe crab *Tachypleus tridentatus* in Pingtan, where the Chinese National Natural Reserve for Horseshoe Crabs is located.

On 11 August 1997, Dr. Q. Huang visited Fuzhou TAL Reagent Factory and talked with the Director, Prof. Duan-hua Liu, to determine the current situation concerning horseshoe crabs in China and to understand the medical demands in the country for TAL Reagent made from blood cells of horseshoe crabs.

On 13 August 1997, Dr. Q. Huang visited the College of Bioengineering, Fujian Normal University, and discussed the preparation of algal specimens for SEM studies as part of a research programme with Mr. Bi-lian Chen.

From 15-17 August 1997, Dr. G.A. Williams visited Nottingham University where he discussed the development of multimedia educational software with Drs. Trehwella and Brailsford, and prepared a manuscript with Dr. M.S. Davies (The University of Sunderland).

On 16 August 1997, Mr. Andrew Cornish acted as ReefCheck team leader to a group of 6 volunteer divers who were trained to survey the coral community at Moon Island, Hoi Ha Wan.

From 20-30 August 1997, Prof. B. Morton visited the Western Australian Museum, Perth, Western Australia, where he undertook research on shore ecology.

From 21 August to 3 September 1997, Dr. G.A. Williams, as in previous years, joined a joint University expedition to Lough Hyne, Ireland, to undertake research on the behaviour of *Patella vulgata*.

From 22 August to 30 October 1997, Ms. Connie H.Y. Lai was awarded a WWFHK grant to undertake training and research on underwater dolphin acoustics at the University of Oxford with Dr. Jonathan Gordon.

From 30 August to 24 September 1997, Ms. Lindsay J. Porter visited the Sea Mammal Research Unit, St. Andrews University, to undertake data analysis and have discussions on her research.

On 28 August 1997, Dr. Q. Huang visited Fuzhou TAL Reagent Factory and discussed with the Director, Prof. Duan-hua Liu, a proposed joint study of the effective factors in *Tridentatus Amoebocyte Lysate* (TAL).

From 15-31 October 1997, Prof. B. Morton was invited to visit the Azores, Portugal, by the Instituto Azoriano de Cultura, and the University of the Azores and gave three seminars on: (1), "The conservation of coastal wetlands in the Azores"; (2), "The conservation of the quarry at Cabo do Praia, Praia do Vitorio, Terceira" and (3), "The possibilities for coastal wetland conservation in the Azores".



Whale bones in some temples in the New Territories attest to the presence of such animals in Hong Kong's waters in years past.

From 1-8 September 1997, Ms. Julia Shaw visited the Beijing herbarium and the South China Institute of Botany in Guangzhou, China.

On 2 September 1997, Dr. Q. Huang visited Fujian Fisheries Bureau and discussed with the Director, Mr. Yang-sheng Gao, the promotion of horseshoe crab conservation in Pingtan. With the help of scientific researchers from Fuzhou Aquatic Science Research Institute and fisheries officers from Pingtan Fisheries Bureau, Dr. Huang also visited some of local breeding and nursery beaches for horseshoe crabs.

On 3 September 1997, Dr. Q. Huang visited Pingtan Niushan Island Marine Reserve and listened to the Deputy Head of Pingtan Aquatic Technique Research Station explain the conservation policies and activities which have been realized on the Island. She also visited a local abalone mariculture farm.

**STAFF AND STUDENT
COMMUNITY SERVICE**

Prof. B. Morton

Member: Executive Council, Executive Committee and Trustee of WWF Hong Kong.

Chairman: WWF Hong Kong Education Committee.

Chairman: WWF Hong Kong, Hoi Ha Wan Committee.

Chairman: The Marine Parks and Reserves Committee, The Country and Marine Parks Board.

Member: WWF Hong Kong, Island House Management and Development Committee.

Member: WWF Hong Kong, Projects Committee.

Member: The Dumping at Sea Act 1974 Appeal Board. The Hong Kong Government.

Member: Water Pollution Control Ordinance (Cap 358) Appeal Board. The Hong Kong Government.

Member: The Country and Marine Parks Board. The Hong Kong Government.

Member: Mollusc Specialist Group, Species Survival Commission of IUCN.

Member: United Nations Environment Programme: United Kingdom Committee.

Secretary: The Council of the Marine Biological Association of Hong Kong.

Member: The Environment and Conservation Fund Committee, The Hong Kong Government.

Member: The Vetting Committee of the Environment and Conservation Fund Committee, The Hong Kong Government.

Member: Academic Commission for the First Term of the Marine Biology Research Station at Daya Bay, South China Sea Institute of Oceanology, Academia Sinica, China.

Member: The Board of Directors, Ocean Park Corporation.

Members : Board of Trustees, Ocean Park Marine Conservation Foundation.

Editor: *Asian Marine Biology*.

Regional Editor: *Marine Pollution Bulletin*.

Editorial Board: *American Malacological Bulletin*.

Editorial Board: *Tropic Oceanology*.

Editorial Board: *Raffles Bulletin of Zoology, Singapore*.

Editorial Board: *Malacological Review*.

Editorial Board: *Journal of Zoology, London*.

Editorial Board: *Phuket Marine Biology Centre Research Bulletin*.

Dr. S.Y. Lee

Chairman: The Council of The Marine Biological Association of Hong Kong.

Member: Marine Parks Committee, Country and Marine Parks Board. The Hong Kong Government.

Member: WWF Hong Kong: Mai Po Management and Development Sub-Committee.

Member: Standing Committee on Mangrove Research, Chinese Ecological Society.

Member: Board of Directors, Ocean Park Corporation, Hong Kong.

Member: Academic Advisory Committee, Marine Laboratory, Shantou University, China.

Dr. G.A. Williams

Member: WWF Hong Kong: Hoi Ha Wan Committee.

Dr. Y. Sadovy

Member: Shark Committee, Recreation and Culture Branch, Hong Kong Government.

Member: WWF Hong Kong, Hoi Ha Wan Committee.

Member: IUCN Shark Specialist Group.

Member: Artificial Reef Committee, Agriculture and Fisheries Department of the Hong Kong Government.

Member: Scientific and Statistical Committee, Caribbean Fishery Management Council, United States Government.

Ms. T. Clark

Member: WWF Hong Kong, Hoi Ha Wan Committee.

Member: Marine Life Guide Editorial Committee of the Hong Kong Marine Conservation Society.

Mr. A. Cornish

Member: WWF Hong Kong, Hoi Ha Wan Committee.

Member: Organizing Committee: The Campaign for Green Island.

Member: Organizing Committee: ReefCheck 1997, Hong Kong.

Mr. K.F. Leung

Membership Secretary: The Council of The Marine Biological Association of Hong Kong.

Ms. D. McCorry

Member: WWF Hong Kong, Hoi Ha Wan Committee.

Ms. L.J. Porter

Membership Secretary: The Council of The Hong Kong Marine Conservation Society.

Ms. Winnie S.M. Tang

Country editor: GIS Asia/Pacific Journal.

Executive Committee member: Hong Kong Geographic Information Systems Association.

Conference Secretary: International Symposium on Geoinformatics: Remote Sensing, GIS and Global Positioning System in Sustainable Development and Environmental Monitoring

Organizing Committee Member: A/E/C Conference 1997

CONFERENCES AND WORKSHOPS

In December, Dr. Lee sat on the Scientific Advisory Committee of the International Conference on the Conservation of Mangal Ecosystems organized by the United Emirates University, and at which he delivered a keynote lecture entitled "The ecological role of grapsid crabs in mangrove ecosystems: implications for conservation".

From 1-4 February 1997, Ms. Chan King attended the Molluscs 97, Symposium on the Mollusca of the Indo-West Pacific and Australasian Region in Western Australia and presented a poster entitled "The effect of food availability on the production of egg

capsules and eggs by *Nassarius festivus* (Gastropoda: Nassariidae) on three beaches in Hong Kong".

From 6-11 April 1997, Mr. Leung Kim Fung attended the Third International Ocean Pollution Symposium in Florida, U.S.A. and presented a paper entitled "Environmental assessment and monitoring of artificial reefs in Hong Kong: A case study".



In late 1996, the second sea arch at the Cape d'Aguilar Marine Reserve was opened up for access after having been closed up in the 1960's when the site was closed for engineering tests on wind speeds.

From 19-23 May 1997, Mr. G.R. Blackmore attended the Fourth International Conference on Trace Metals in the Aquatic Environment in Malaysia and presented a paper entitled "An overview of trace metal pollution in Hong Kong's coastal waters".

From 19-23 May 1997, Mr. E.M. Parsons attended the Fourth International Conference on Trace Metals in the Aquatic Environment in Malaysia and presented a paper entitled, "Trace metal pollution in Hong Kong: implications for the health of Hong Kong's Indo-Pacific Hump-backed dolphin (*Sousa chinensis*)".

From 13-19 July 1997, Ms. Katherine K.Y. Lam attended the VIII Pacific Science Inter-Congress in Suva, Fiji, Japan and presented a paper entitled "Coral recruitment on an artificial reef in Hong Kong".

From 6-8 August 1997, Mr. G.R. Blackmore, Ms. Katherine K.Y. Lam and Mr. S. Nicholson

attended the PACON 97 conference at The Chinese University of Hong Kong which was organized by PACON International.

From 10-15 August 1997, Ms. Julia Shaw attended the annual conference of The Ecological Society of America in Albuquerque, New Mexico, U.S.A. and presented a poster entitled 'Hong Kong Cyperaceae to monitor changing ecosystems: natural and human impacts through taxonomy, phytogeography and ecology'.

From 10-12 September 1997, Mr. G.R. Blackmore attended the SETAC - Europe Annual Meeting in York, United Kingdom.



Mr. Albert Au, a technician at the institute keeps a regular check on the quality of the sewage discharge from the institute after treatment.

On 1 November 1997, Mr. Benny K.K. Chan attended a Joint University Postgraduate Symposium and presented a paper entitled "Taxonomic status of the acorn barnacle *Tetraclita squamosa squamosa* and *Tetraclita squamosa japonica* (Crustacea: Cirripedia) in Hong Kong waters".

On 1 November 1997, Mr. Richard Huang attended the annual Joint University Postgraduate Symposium and presented a paper entitled "Feeding ecology of a tropical limpet, *Cellana grata*". He also received the prize for the best presenter in the Biology section.

On 1 November 1997, Ms. Katherine K.Y. Lam attended the annual Joint University Postgraduate Symposium and presented a

paper entitled "Coral recruitment on an artificial reef in Hong Kong".

On 1 November 1997, Ms. Priscilla T.Y. Leung attended the annual Joint University Postgraduate Symposium and presented a poster entitled "The ecology of rock crevices in Tolo Harbour".

On 1 November 1997, Ms. Li Li attended the annual Joint University Postgraduate Symposium and presented a poster entitled "Population dynamics and biology of *Dynoides* (Crustacea: Isopoda) in the Cape d'Aguilar Marine Reserve, Hong Kong".

STUDENT AND STAFF SUCCESSES

Ms. Helen M.C. Chiu obtained her Ph.D. for a thesis entitled "The ecology and energetics of *Saccostrea cucullata* (Born) (Bivalvia: Ostreidae) in Hong Kong" and is now a post-doctoral research fellow at the institute.

Mr. P.R. Collinson obtained his Ph.D. for a thesis entitled "The ecology of a peripheral, subtropical coral community in Hong Kong".

Mr. Lai Chi Sing obtained his M.Phil. degree on "The feeding ecology of the swimming crab *Thalamita danae*" and is now working as a technician in the City University of Hong Kong.

Mr. A.W.Y. Leung has been appointed as a Fisheries Officer in the Agriculture and Fisheries Department of the Hong Kong Government.

Mr. K.F. Leung has been appointed as an Environmental Protection Officer (Water Section) in the Environmental Protection Department of the Hong Kong Government.

Dr. Mak Yiu Ming has been appointed as a consultant with ERM (HK) Limited.

Mr. E.C.M. Parsons obtained his Ph.D. for a thesis entitled "Hong Kong's cetaceans: the biology, socioecology and behaviour of *Sousa chinensis* and *Neophocaena phocaenoides*"

Ms. Phoebe Sze completed her M.Phil. degree on "The effect of chronic copper exposure on the energy budget of two mussels, *Perna viridis* L. and *Septifer virgatus* Weigmann" and is now working for WWF Hong Kong as a Research Assistant.

AWARDS

Prof. B. Morton was appointed as a Justice of the Peace.

In 1996, Ms. Winnie S.M. Tang had her Sir Edward Youde Memorial Fellowship renewed.

EXCHANGE AGREEMENTS

University of Wales, Bangor and South China Sea Institute of Oceanology, Guangzhou, China

Established in 1992 and supported by The Swire Group of Companies and the British Council, a tripartite exchange agreement fosters academic links between the Swire Institute of Marine Science, The University of Hong Kong, the School of Ocean Sciences, University of Wales, Bangor, U.K. and the South China Sea Institute of Oceanology, Academia Sinica, Guangzhou, China.

The Agreement, signed on the 24 February 1992 by the Vice-Chancellor of The University of Hong Kong, Professor Wang Gungwu, the Principal of The University of Wales, Bangor,

Professor E. Sunderland, and the Director of the South China Sea Institute of Oceanology, Guangzhou, Professor Sun Yuke, was renewed in 1995 for a further period of three years and facilitates exchange of staff and students.

In 1997, the following exchanges were approved:

From Hong Kong:

From 20 July to 23 August 1997, Mr. Benny K.K. Chan visited the University of Wales, Bangor, U.K. where he undertook research on culturing the barnacle larvae of *Tetraclita squamosa* and *Tetraclita japonica* under the supervision of Dr. Graham Walker.

From 16-22 October 1997, Mr. Benny K.K. Chan and Ms. Priscilla T.Y. Leung visited Prof. Yan Wen Xia of the South China Sea Institute of Oceanology, Guangzhou, China, and presented two talks entitled "The taxonomy and ecology of *Tetraclita squamosa* in Hong Kong" and "The ecology of intertidal rock crevices in Hong Kong", respectively.

From Bangor, U.K.:

From 14 October to 10 November 1997, Mr. Jonathan Russell visited the institute where he undertook research on feeding biology of the stalked barnacle, *Capitulum mitella*, together with aspects of the biology of its nemertean symbiont, *Nemertopsis quadripunctatus*.

From 14 October to 10 November 1997, Mr. Steve Freeman visited the institute where he undertook research on the foraging behaviour of the intertidal sea urchin *Anthocidaris crassispina* (Echinodermata) in Hong Kong.

From China:

From 19 February to 17 May 1997, Mr. Shen Qi visited the University of Wales, Bangor, where he undertook research on genetic variation in the European flat oyster (*Ostrea edulis*) with Dr. A.R. Beaumont.

From 19 February to 17 May 1997, Mr. Qiu Yaowen visited the University of Wales, Bangor, where he undertook research on phytoplankton blooms related to nutrients with Dr. Hilary Kennedy and Dr. I. Lucas.

The Third Institute of Oceanography, Xiamen, China

On the 10 November 1994, the Director of the Swire Institute of Marine Science and Prof. Yu Xiaoqun, the Director the Third Institute of Oceanography, State Oceanic Administration, China, signed an Agreement to foster academic exchanges. In 1997, Prof. Z.G. Huang visited the institute under the terms of this agreement to undertake research on biofouling.

The City University of Hong Kong

On the 14 December, 1995, Professor R.S.S. Wu, Head of the Department of Biology and Chemistry of the City University of Hong Kong and Professor B. Morton signed an Agreement of Co-operation so that the physical and human resources of the two establishments can be shared for mutual benefit. This agreement is working very well and there are regular inter-institutional visits and co-operative research activities



Dr. D.R. Gray (South Africa), a Laurence Caplin Scholar, undertaking his research at the institute.

LAURENCE CAPLIN SCHOLARSHIP IN MARINE BIOLOGY

In memory of Laurence Caplin (7 November 1914 to 30 April 1991), his widow, Mrs. E. Caplin, and daughter, Mrs. J. Woodford, of England, donated in 1993 the sum of HK\$150,000 to be invested and the interest from which is to be used to bring to the Swire Institute of Marine Science young people to undertake research in marine biology with resident staff. Applications for the scholarship are invited.

From 11-24 November 1996, a Laurence Caplin Scholarship was awarded to Dr. N.L. Bruce from the Zoologisk Museum, University of Copenhagen, to undertake research with a postgraduate student, Ms. Li Li, on marine isopod crustaceans around the Cape d'Aguilar Marine Reserve.

From 19 September to 12 October 1997, Dr. D.R. Gray (Department of Zoology, The University of the Western Cape, South Africa) was awarded a Laurence Caplin Scholarship to work on the endogenous rhythms of local intertidal grazers with Dr. G.A. Williams. In September 1997, using controlled laboratory conditions, Dr. Gray was able to demonstrate a strict tidal rhythm in the high intertidal limpet *Cellana grata* and investigated the possible environmental factors responsible for entraining this behavioural rhythm.

INTERTIDAL TRUST FUND

Established in 1982 with profits from the sale of the book "*The Sea Shore Ecology of Hong Kong*" grants from the Intertidal Trust Fund

can be made to overseas students and scientists who wish to undertake research on intertidal ecology at the Swire Institute of Marine Science.

From 26 February 1997 to 28 March 1997, Prof. Z.G. Huang, Third Institute of Oceanography, Xiamen, China was awarded a grant from the fund to collect fouling organism samples in the low temperature season in Hong Kong.



Ms. Li Li, a Ph.D. student at the institute with Dr. N.L. Bruce (Copenhagen), a Laurence Caplin Scholar.

CAPE D'AGUILAR TRUST FUND

Established in 1995 with profits from the sale of the book *"An Introduction to the Cape d'Aguilar Marine Reserve, Hong Kong"*, grants from the Cape d'Aguilar Trust Fund can be made to local and overseas students and scientists who wish to undertake marine biological research on the Cape d'Aguilar Marine Reserve at the Swire Institute of Marine Science.

RESEARCH AND OTHER ACTIVITIES IN MARINE SCIENCE

BERMUDA BIOLOGICAL STATION FOR RESEARCH

The Bermuda Biological Station for Research Far Eastern Trust this year sponsored two graduate students from the Swire Institute of Marine Science to go to Bermuda and participate in advanced courses in marine science.

Mr. Bryan Y.L. Yeung participated in the course "Biology of Fishes" for the period from 20 July to 16 August 1997.

Ms. Christine N.W. Lee participated in the course "Biological Oceanography" for the period from 27 July to 16 August 1997.

AN ARTIFICIAL REEF AT HOI HA WAN

In 1993, Hong Kong Electric Co., Ltd. and China Light and Power Co., Ltd., donated the sum of HK\$3.1 million to the institute to build, deploy and study an Experimental Artificial Reef at Hoi Ha Wan, Hong Kong's first Marine Park.

The grant provided research scholarships for three higher degree students to be based at the Swire Institute of Marine Science and to work on the project, as a team, for three years. The following students undertook the research and are at present completing their higher degree theses.

Mr. Albert Y.W. Leung. A Fisheries Officer with the Agriculture and Fisheries Department of the Hong Kong Government, Albert is completing a study of the fish fauna of the artificial reef.

Ms. Katherine K.Y. Lam. A graduate in Environmental Science from The University of Hong Kong, Katherine is completing a study of the colonization of the artificial reef by corals and other organisms.

Mr. K.F. Leung. A graduate in Environmental Science from The University of Hong Kong, Kim Fung is completing a study of the leaching of trace metals from the reef blocks and their uptake and transport within the marine life of the artificial reef.

The final report on the project has been completed in January 1997 by Albert W.Y. Leung, K.F. Leung, K.K.Y. Lam and Brian Morton, with the title of "The Evaluation of an Experimental Artificial Reef for Marine Habitat Rehabilitation and the Feasibility of Using Stabilized Coal Combustion Solid Residues for Reef Construction". Copies are available from the Secretary of the institute.

HONG KONG'S CORALS AND FISHES

In 1997, Mr. Peter R.J. Collinson obtained his Ph.D. for his research on Hong Kong's corals. Ms. Tracy Clark has completed her research on the distribution of corals within the Cape d'Aguilar Marine Reserve and compared coral transplants from Hoi Ha Wan with those of Cape d'Aguilar. This research was supported by the volunteer diving team headed by Mr. Paul Hodgson who is currently mapping the

sea bed of the reserve. Ms. Katherine Lam is completing her research on corals settling on the experimental artificial reef at Hoi Ha Wan. Ms. Denise McCorry, Dr. Robyn Cumming and Mr. Andrew Cornish now study the biodiversity of Hong Kong corals and coral fish, funded by a grant to the institute of HK\$1.83 million from the Hong Kong Jockey Club Charities Trust. Mr. Ng Wai Chuen is researching the rockfish *Sebasticus marmoratus*. This research was recently supported by the donation of an underwater video camera and housing plus other diving equipment from Larco Products Ltd.

The biodiversity baseline study of Hong Kong's corals funded by the Hong Kong Jockey Club is now nearing the end of the second year of research. Baseline studies of coral communities is underway, using underwater video transect techniques. To date, 15 sites have been quantitatively surveyed. Information on the distribution of corals has been obtained from a questionnaire to the recreational diving community of Hong Kong. One of the most interesting results was the location of several sites that were once thriving coral communities. Five permanent monitoring sites within different water quality zones have been established and photoquadrats of permanently marked transects have been carried out every six months since October 1996. This work will continue until June 1998.

Shoreline construction at Ping Chau, Mirs Bay caused acute and chronic damage to the coral community. Quantitative survey work indicates Ping Chau as the richest coral area in Hong Kong with high coral cover (>63%), high species richness (19-35 species) and large coral colony size. In March 1997, a temporary pier was constructed on the corals north of the existing ferry pier. An area approximately 60x60m was disturbed with extensive coral damage. Large concrete blocks had been placed on top of large colonies of *Platygyra sinensis* (brain coral) and many other coral species had been broken, overturned or buried by large rocks. Coral rehabilitation work was carried out by the Agriculture and Fisheries Department of the Hong Kong Government with assistance from Maritime Mechanics Limited and the Swire

Institute of Marine Science (Andy Cornish and Denise McCorry). The main offending debris was located, buoyed off and removed over a two day period. This included removal of a large cement block, 2-3 tonnes of rock, a fender made from a large commercial truck tyre and 30m of heavy duty steel cable. Overturned and fragments of corals were relocated and stabilised. Research is underway to assess recovery of this site.

Coral bleaching was recorded at ten sites this summer and quantitative assessments of the bleaching were carried out at four sites. The summer of 1997 was a stressful period for coral communities with record rainfall reducing inshore salinity for a prolonged period. In addition, there was a catastrophic local coral die-off, with the coral community at Sham Wan, South Lamma Island, suffering 100% mortality between the depths of 0-4m below C.D. Transect data and water quality data are presently being analysed to ascertain the reason for the extensive bleaching and localised death of corals this year.

THE CHINESE HORSESHOE CRAB

In 1995, China Light & Power Co., Ltd. made a donation to the Institute of HK\$900,000 to fund a Ph.D. student to undertake research on the Chinese horseshoe crab. From 1 May 1997, Dr. Helen M.C. Chiu has been appointed as a Post-doctoral Fellow to undertake this research in co-operation with Dr. Huang Qin. Once common on Hong Kong's beaches and in coastal waters, Chinese horseshoe crabs, are now threatened by pollution and overfishing and rarely seen. This project aims at understanding the taxonomy and ecology of the crab with a view to making recommendations as to its conservation locally. Assistance with this research is being provided by the Agriculture and Fisheries Department and the Environmental Protection Department of the Hong Kong Government.



Dr. Helen Chiu with juvenile horseshoe crabs recently discovered at Pak Nai Beach, Northwest New Territories.

HONG KONG'S DOLPHINS

The first documented sighting of the so called Chinese White dolphin or Chinese Humpback dolphin (*Sousa chinensis*) in the Pearl River estuary was made in 1637. There appears to have been little interest in the population until the late 1980's, when the development of the new airport at Chep Lap Kok threatened the dolphin's habitat. Public attention was drawn to the possible future plight of the dolphins by the World Wide Fund for Nature Hong Kong and The Hong Kong Marine Conservation Society. The Hong Kong Government funded a study of this species in 1993 with a grant of HK\$2 million to the Swire Institute of Marine Science.

The study began in December 1993 and two students, Ms. L.J. Porter and Mr. E.M. Parsons, registered for a Ph.D. degree. Mr. Parsons completed his Ph.D. in 1997 and Ms.

Porter is currently completing her thesis. This research is co-ordinated through a Dolphin Working Group chaired by Prof. B. Morton. The Ocean Park Conservation Foundation is a supporter of the project.

Ms. Connie H.Y. Lai has recently been appointed as research student to continue the work on the Chinese white dolphin and to study its behaviour in greater detail.

A MARINE GIS DATABASE FOR HONG KONG

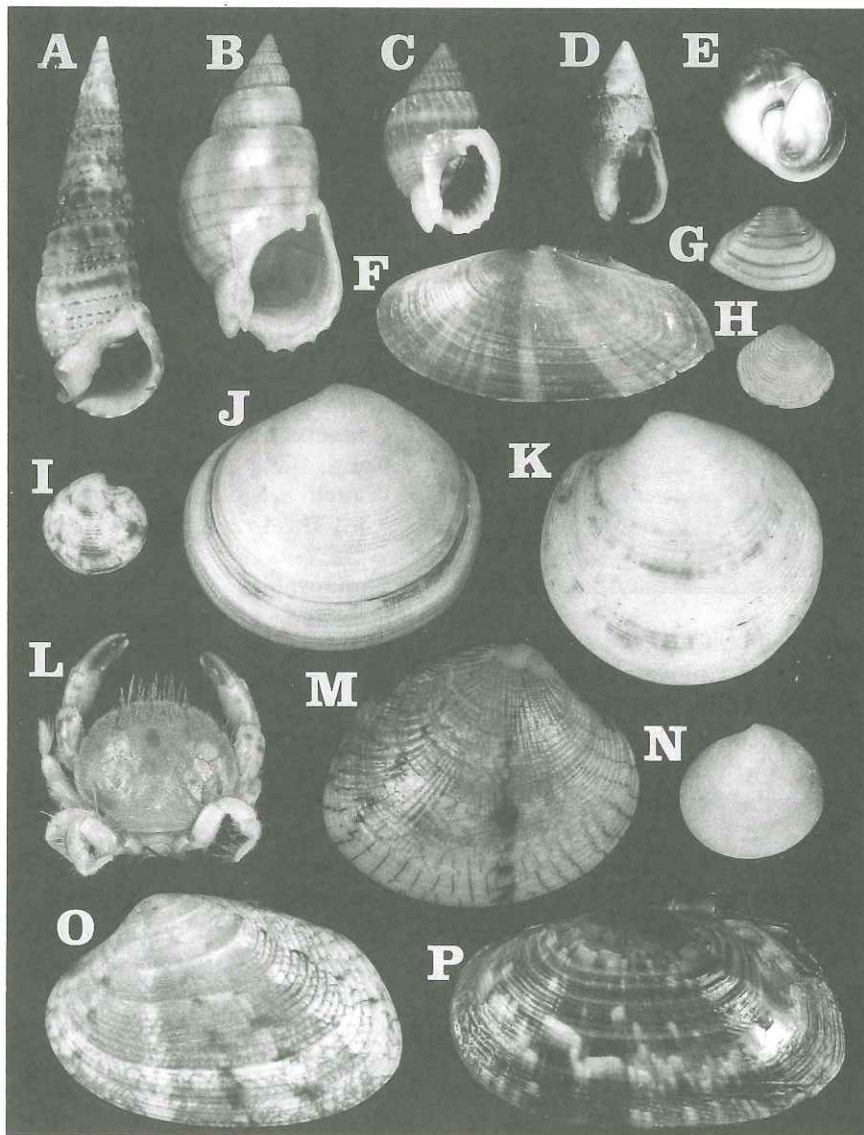
In 1994, the Education Trust of John Swire and Sons Ltd., approved the establishment of a Third Scholarship in Wetland Ecology at the institute. The aim of the scholarship is to create a G.I.S. Marine Database for Hong Kong, to develop new ways of computer-imaging the data and to formulate a Marine Conservation Management Plan for Hong Kong. The scholarship was awarded to Ms. Winnie S.M. Tang, a graduate in Geography from The University of Hong Kong.

The project was further supported by a donation of software from Environmental Systems Research Institute Inc., U.S.A., and by the donation of computer hardware from the Caltex Green Fund. Ms. Tang is currently completing her Ph.D. thesis.

After three years of information compilation and database construction, the Marine GIS Database will be made available after December 1997. It will contain useful information such as the distribution and taxonomy of more than 300 molluscs, *E.coli* concentrations, and turbidity levels of Hong Kong waters, as well as displays of different phases of dredging and reclamation. The Database also contains information from the specimen reference collection in the institute. A wide range of features will be available for displaying species information in the database, interactively accessing the bibliography, museum, nomenclature

database, and manipulating maps on screen. A database of species records, for which the locality coordinates have been entered in latitude/longitude, UTM, and/or Hong Kong 1980 Grid formats, can be mapped automatically using a variety of symbols. A bibliography database containing more than one thousand literature references relevant to local marine research has also been created. The MGIS represents a new way to visualize the marine environment by simultaneously displaying and analyzing maps, text, pictures and sound information in an integrated GIS environment.

To maintain the currency of the information in the Database, continual input from marine researchers will be needed. To help with data input, a standard data log-in form has been prepared, which was first used at the 1995 Marine Flora and Fauna Workshop for the input of new marine ecological information collected from field work. In the future, it is hoped that all marine researchers will utilize the Database for their work to provide updated information to the Database using the institute's data log-in form.



The newly discovered community of burrowing animals from the sands of Lobster Bay in the Cape d'Aguilar Marine Reserve. (A, *Rhinoclavis sinensis*; B, *Nassarius glans*; C, *Nassarius nodiferus*; D, *Nassarius reeveanus*; E, *Natica gaulteriana*; F, *Gari radiata*; G, *Anisocorbula venusta*; H, *Dosinia* sp.; I, *Dosinia caerulea*; J, *Semele sinensis*; K, *Dosinia histrio*; L, *Paralepida nitida*; M, *Gafrarium divaricatum*; N, *Codakia fibula*; O, *Tapes literatus*; P, *Gari maculosa* (all x 1.5)).

WORLD WIDE FUND FOR NATURE HONG KONG

Staff of the institute sit on various committees of WWF Hong Kong to help promote local environmental awareness.

In particular, our researches provide information and advice on management procedures for The Mai Po Marshes Nature Reserve and the Hoi Ha Wan Marine Park. Educational materials for the Island House Conservation and Field Studies Centre and the proposed Marine Life Centre at Hoi Ha Wan are also produced by the institute staff and students.

THE MARINE BIOLOGICAL ASSOCIATION OF HONG KONG



The patrol boat of the Country and Marine Parks Authority keeps a regular patrol of the Cape d'Aguilar Marine Reserve.

Founded in 1982, The Marine Biological Association of Hong Kong has some 110 members and holds regular meetings and other events, some of which are held at the Swire Institute of Marine Science. The Association produces its own international scientific journal, *Asian Marine Biology*. The Association's library is housed at the Swire Institute of Marine Science.

Dr. S.F. Leung is Chairman of the Association. Mr. K.F. Leung is the Membership Secretary and Prof. B. Morton is Secretary of the Association and Editor of *Asian Marine Biology*.

THE HONG KONG MARINE CONSERVATION SOCIETY

Founded in June 1991, The Hong Kong Marine Conservation Society has some 120 members and holds regular meetings and other events, some of which are held at the Swire Institute of Marine Science. It also produces a Marine Conservation Newsletter.

Ms. L.J. Porter is Membership Secretary of the Society.

CAPE D'AGUILAR AS HONG KONG'S FIRST MARINE RESERVE

The shores and inshore sea areas around the institute, already designated a Site of Special Scientific Interest, were recommended by the Marine Parks and Reserves Committee, chaired by Prof. B. Morton with Dr. S.Y. Lee as a member, of the Country and Marine

Parks Board, to be of sufficient importance to constitute Hong Kong's first marine reserve.

On 31 May 1995, Hong Kong's Legislative Council passed the Marine Parks Bill and on the 5 July 1996, the Cape d'Aguilar was formally designated. It was officially opened on the 30 September 1996 by Mr. Bowen Leung, Secretary for Planning, Environment and Lands of the Hong Kong Government.

Staff and students of the institute are actively engaged in research of the reserve and its shores so as to assist in its present and future management.

HOW CAN I UNDERTAKE RESEARCH AT THE SWIRE INSTITUTE OF MARINE SCIENCE?

FUNDING OPPORTUNITIES⁺

- A. If you have a good honours degree from a recognized tertiary institution, you will be eligible for award of a Studentship by The University of Hong Kong which will allow you to undertake research for either an M.Phil. or a Ph.D. degree at The Swire Institute of Marine Science. Non native-English speaking students are required to obtain a TOEFL score of 550 points prior to admission. Application forms are available from The Registrar, The University of Hong Kong, Hong Kong.
- B. Overseas students and scientists can apply to the laboratory for award of a Short-Term Visitorship which offers free accommodation at the institute and a modest per diem allowance. Such visits are normally for less than one month.
- C. Postgraduate students who are full members of The Marine Biological Association of Hong Kong can apply for award of a research grant that would help them either undertake research at the institute or attend local and overseas conferences.*
- D. The Director can, at his discretion, make a single annual award from an "Intertidal Trust Fund" established in 1982 to a postgraduate or post-doctoral overseas applicant who writes with details of a research project that would enhance understanding of Hong Kong's intertidal ecology by using the facilities of The Swire Institute of Marine Science.
- E. Established in 1992, the Laurence Caplin Scholarship in Marine Biology, offers grants which allow young overseas scientists to undertake research at The Swire Institute of Marine Science for periods of up to 3 months.
- F. Established in 1995, the Cape d'Aguilar Trust Fund offers grants which allow local and overseas students and scientists to undertake short periods of research on the proposed Cape d'Aguilar Marine Reserve, at the Swire Institute of Marine Science.

+Further details of all such funding possibilities can be obtained from The Director, The Swire Institute of Marine Science, The University of Hong Kong, Cape d'Aguilar, Shek O, Hong Kong.

* Details of this grant can be obtained from: The Secretary, The Marine Biological Association of Hong Kong, c/o The Swire Institute of Marine Science, The University of Hong Kong, Cape d'Aguilar, Shek O, Hong Kong.

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