

# THE SWIRE INSTITUTE OF MARINE SCIENCE ANNUAL REPORT FOR 1994



Chinese Humpback dolphins (*Sousa chinensis*) north of Chek Lap Kok, Lantau Island.  
Photo: L. Porter



The University of Hong Kong

# The Swire Institute of Marine Science Annual Report for 1994



Photo: E. Stokes

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 fourth year of research activity and development.

This Annual Report covers the period from 3 November 1993 to 2 November 1994.

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

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### Research and other activities in marine science

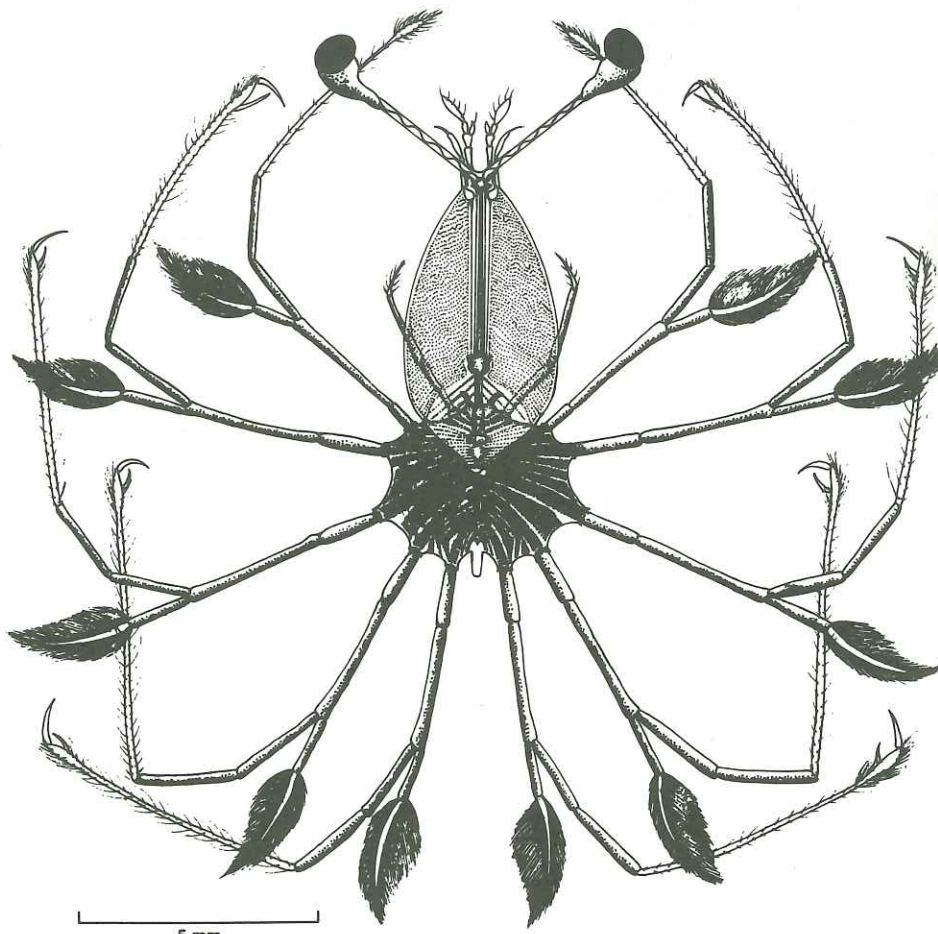
- Bermuda Biological Station for Research
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### How can I undertake research at The Swire Institute of Marine Science?

Publications by staff and students  
(1993-1994)

Publications by research associates and  
visitors to the Institute (1993-1994)

Acknowledgements



*Phyllosoma larva of a lobster: Bermuda 1993*

# 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 establishment of a new name - The Swire Institute of Marine Science - in recognition of its growing importance as an international centre for advanced marine research.

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 institute provides facilities 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 people in either single or double rooms, The Residence also has a lounge/dining room, kitchen, sun balcony and spectacular views to the east and south. A second Residence is being built adjacent to the original one and will be capable of housing up to sixteen additional students and guests.

The institute has two vehicles, a five seater field truck and a seven seater van. There are also two (six and ten man), "Zodiac", inflatable vessels for diving research.

## STAFF

The staff of the laboratory are:  
Professor Brian Morton, Director  
Dr. S.Y. Lee, Resident Scientist

Dr. Gray A. Williams, Resident Scientist  
Dr. Yvonne Sadovy, Resident Scientist  
Miss Diana K.F. Ip, Secretary  
Mr. James C.T. Hui, Laboratory Technician  
Mr. Albert C.C. Au, Technician  
Ms. Kelly L.Y. Lau, Technician  
Ms. Louise W.H. Li, Technician  
Mr. Cheung Ming, Driver/Boatman  
Mr. Patrick P.C. Chan, Leading Artisan  
Ms. Priscilla S.H. Fung, Clerical Assistant  
Mr. K.K. Wong, Artisan/Caretaker  
Ms. K.P. Chan, Cleaner/Caretaker

## RESEARCH PROFILE

In its fourth year of operation, the institute has solved many of its early teething problems and the ability of its resident staff and students to do research has grown apace. The staff of the institute look forward to 1995 with confidence.

The ecological research begun in 1991 of the surrounding shores will continue, largely under the supervision of Dr. G.A. Williams. Mr. Sven Kaehler is completing a study of intertidal algae, Ms. Kate Harper is completing a study of the chiton *Acanthopleura japonica* while Mr. Robin Kennish (co-supervised with Dr. S.Y. Lee) and Mr. Mak Yiu Ming are studying rocky intertidal crabs and littorine snails, respectively.

Additional emphasis is now, however, being placed on the subtidal, in particular the corals that grow in Lobster Bay adjoining the institute and rock pools. Mr. Albert W.Y. Leung has completed his study of the fish fauna of the bay. Ms. Susan Hawkins is studying its productivity while Ms. Tracy Clark (a Commonwealth Scholar) is studying the corals of Lobster Bay and the pool, all under the supervision of Prof. B. Morton. Ms. Alice L.C. Chan is completing a study of the zooplankton of Hong Kong's southern waters, while Dr. R.G. Ong-Che (Research Associate) is completing studies of the benthos of Tai Tam Bay and surrounding shores.

Dr. S.Y. Lee and his students continue to

work on various aspects of mangrove ecology at the Mai Po Marshes Nature Reserve. Ms. Winnie P.W. Kwok studies herbivorous crabs, Ms. Josephine K.Y. Yang (co-supervised with Dr. Williams) studies mudskipper ecology and Mr. Steve McChesney is completing a study of the mudflat community at Mai Po. Ms. Pauline Tong studies herbivory upon local mangroves. Mr. Vincent C.S. Lai is studying the predatory crab, *Thalamita*, on various shores in Hong Kong, also under the supervision of Dr. S.Y. Lee, while Ms. Carmen Anderson is completing a study of the Mai Po mangrove under the supervision of Prof. B. Morton.

Prof. B. Morton and his students also work at Hoi Ha Wan, proposed as Hong Kong's first Marine Park. Mr. Peter R.J. Collinson is completing a study of the corals at Hoi Ha. Mr. Albert W.Y. Leung, Mr. K.F. Leung and Ms Katherine K.Y. Lam have begun a three-year study of an Experimental Artificial Reef, also at Hoi Ha.

Prof. B. Morton and Dr. S.Y. Lee also supervise Mr. Alan W.L. Chan and Ms. W.C. Sze on their studies of industrial pollutant effects on marine life, while Ms. Chan King, under the supervision of Prof. B. Morton, is studying the effects of pollutants, including TBT, on the intertidal snail *Nassarius festivus*.

The sea and shores around the institute were designated a Site of Special Scientific Interest in 1991. It is anticipated that they will achieve Marine Reserve status towards the end of 1994, controlling access to Lobster Bay, thereby minimizing disturbance and further allowing us to better understand natural versus unnatural changes in water quality and shore ecology.

Two students, Mr. E.M. Parsons and Ms. L. Porter, arrived at the institute in December 1993 to begin a study of the Chinese Humpback dolphin, *Sousa chinensis*, in the northwestern waters of Hong Kong. These studies are being financed by a grant from The Hong Kong Government.

A third Swire Scholarship in Wetland Ecology was established this year and its holder, Ms. Winnie S.M. Tang, commenced work on a marine coastal GIS database for Hong Kong in which the marine flora and fauna is to be inventoried with the ultimate aim of producing a marine management plan and better maps and other visual aids to interpret Hong Kong's coastal communities. This

project is locally unique in that it is being supervised by Prof. B. Morton (Science) and Mr. J.W. Bradford (Architecture).

## NEW DEVELOPMENTS

Over the last six months the institute has been undergoing expansion and re-development. This has been achieved by the donation of HK\$6 million to The University of Hong Kong from the Swire Group Charitable Trust. The institute is scheduled for re-opening on the 10 November 1994.

Equipment ordered recently includes an Image Analysis System for a new Leitz microscope and a Scanning Electron Microscope. This equipment is to be installed in a special Microscopy Laboratory in the extension to the institute.

Similarly, ICP trace metal analysis equipment is to be installed in a new Analytical Laboratory in the extension.

Work has proceeded over the summer to catalogue and computerize the infant Reference Collection of Hong Kong's Marine Flora and Fauna. With the establishment of the Reference Collection, all workers at the institute will be required to lodge voucher specimens in it to ensure conformity of identification and to build up our knowledge of the local marine flora and fauna. To facilitate this important research, Environmental Systems Research Inc., USA, donated copies of Workstation Arc/Info 7.0, Workstation Arc/View II and PC Arc/View II software worth ~HK\$0.5 million to the institute in November 1994. These are the software packages most widely used to develop geographic information systems.



Participants in the China/Taiwan/Hong Kong meeting, in Guangzhou, China, on co-operation in marine mammal research.

## FUTURE PLANS

During 1995, the staff will consolidate the recent structural and infrastructural developments at the institute so that its, now, various activities and facilities are integrated into a research strategy that reflects the future needs of Hong Kong in the field of marine research. 1995 will also be the year that legislative control of the proposed marine reserve will, hopefully, come into effect and efforts will have to be directed towards its management, in co-operation with the Hong Kong Government.

Preliminary plans have been formulated for 1996 that propose building of a Marine Interpretation Centre adjacent to the institute. This will serve as a public and school facility to allow us to offer a marine educational programme to the groups of local people which already visit the institute and the many more who would like to. Such a centre would also act as a Management Office for the proposed marine reserve and accommodate the growing library and reference collection, allowing wider public use and releasing space in the institute for further research developments.

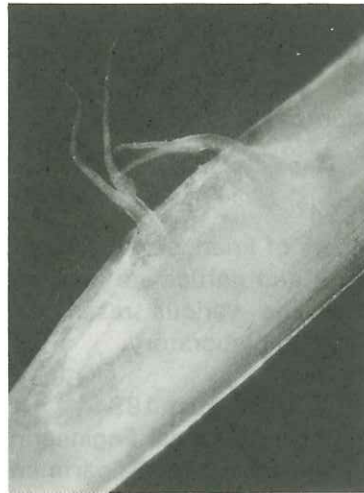
There is also a need for a more substantial vessel to replace the present Zodiac inflatables and to link this with improvements to the ramp and the provision of a winch.

## THE LIBRARY

The Library Committee of The University of Hong Kong made allocations of HK\$15,000 and HK\$40,000 in 1991/1992 and 1992/1993, respectively. In 1993/1994, this allocation increased to HK\$50,000, to allow continued purchase of research books. The institute is still, however, far from fulfilling a basic aim of providing a comprehensive marine library for staff, students and visitors and a setback to this aim was realised in 1994/1995 when the Committee declined to make an allocation of funds to the institute.

Upon his retirement from the Chair of Zoology at The University of Hong Kong in 1990, Professor B. Lofts generously donated runs of a number of important journals to the institute. In 1993, the widow of the late Professor R.D. Purchon also donated part of

her husband's library to the institute. We also benefit from lodgement at the institute 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 110 titles through this exchange and have back runs of most Chinese marine journals.



The stigmata of the female flowers of the seagrass, *Zostera japonica* from Tung Chung, north Lantau Island.

## HEALTH AND SAFETY

The institute has a comprehensive Health and Safety Policy which is spelt out clearly in a Health and Safety Manual that is issued to everyone working at the institute. Mr. P.P.C. Chan is the First Aid Officer and Mr. J.C.T. Hui is the institute's Safety Officer.

## EVENTS

This year has seen a reduction in the number of events organized by the institute. This has been unavoidable because of the redevelopment of the institute's facilities and which have closed down, albeit temporarily, parts of the research laboratory and the seminar room.

22 December 1993

Thirty five students and two teachers from the Lui Cheung Kwong Lutheran College: to tour the institute and clean up the beach.

3 January 1994

Thirty five students from the B.Sc. Environmental Science degree programme,

The University of Hong Kong: to attend a seminar, clean up the beach and have a barbeque.

24 February 1994

The Marine Parks & Reserves Working Group of the Country Park's Board: to tour the institute and inspect the proposed Cape d'Aguilar Marine Reserve.

20 March 1994

Forty-five people from a charitable organization called 'Our Planet': to tour the institute.

9 April 1994

Ten members of Friends of the Earth: to tour the institute and participate in an afternoon seminar on the various research projects underway at the laboratory.

18 July, 8 & 11 August 1994

Staff of the Geotechnical Engineering Office of the Civil Engineering Department, Hong Kong Government: to conduct a geological survey of Cape d'Aguilar for school students.

25 August 1994

Twenty students from Fu Shin Lutheran Children and Youth Centre: to tour the institute and clean up the beach.

## OFFICIAL VISITORS

6 November 1993

Forty members of The Royal Asiatic Society, Hong Kong, to tour the institute and have a seminar on its development.

5 November 1993

Mr. and Mrs. James Adams, Staff Co-ordinator, John Swire & Sons (HK) Ltd.: to tour the institute and have a barbeque on the institute's 3rd Anniversary.

15 December 1993

Mr. C.C. Lay and Mr. Y.K. Chan from the Agriculture & Fisheries Department of the Hong Kong Government, Mr. K. Shaw from the New Airport Projects Co-ordination Office, and Mr. S. Leatherwood from Ocean Park Ltd.: to have a co-ordination meeting on the Chinese Humpback dolphin project.

17 December 1993

Mr. M.K. Cheung from the Agriculture & Fisheries Department of the Hong Kong Government: to have discussions on water

monitoring in Hong Kong's proposed marine parks and reserve.

18 January 1994

Mr. D. Chan and Dr. E. Chan from the Environmental Protection Department, Mr. M.K. Cheung from the Agriculture and Fisheries Department, Mr. P. Whiteside from the Natural Resources and Secretariat/Fill Management Committee, Planning Division, Civil Engineering Services Department, Mr. G. Andreassend and Mr. H. Chan from the Survey and Mapping Office, Lands Department, and Mr. S.T. Chiu from the Antiquities and Monuments Office of the Hong Kong Government: to attend an Advisory Committee meeting on Ms. Winnie S.M. Tang's GIS Database, Map & Virtual Reality Interface project.

23 February 1994

Prof. and Mrs. Burkhardt Muller, Secretary General of the Deutsche Forschungsgemeinschaft and, previously, Chancellor of the University of Aachen; Prof. Werner Gocht, Dean of the Business School, Economics and Geology, the University of Aachen and Dr. Jost-Gert Glombitza, twenty years in the DFG, and now Head of International Scientific Relations: to tour the institute and have discussions.

24 February 1994

Dr. and Mrs. G. Edward-Jones, SAC Rural Resource Management, Scotland: to tour the institute.

24 March 1994

Prof. W. Patrick and Dr. Wang Zheng Ping, Louisiana State University, U.S.A.: to tour the institute.

15 April 1994

The "Birdbrains", The University of Hong Kong's team for the WWFHK Big Bird Race: to stay at The Residence and birdwatch.

27 April 1994

Dr. Reimi Kinoshita, Veterinary Hospital, Ocean Park Ltd.: to visit the institute.

18 May 1994

Mrs. J. Woodford, England: to tour the institute and meet students.

4-8 June 1994

Prof. Pan Pei Jin, Director, and Prof. Zou Ren Lin, Deputy Director, South China Sea Institute of Oceanology, Academia Sinica, Guangzhou, China: to visit the institute and

have discussions.

28 June 1994

Prof. Li Fu Xue, Department of Oceanography, Xiamen University, China: to tour the institute.

2 July 1994

Dr. P. Pockley, University of Technology, Sydney, Australia: to tour the institute and interview staff and students for a radio programme.

2 September 1994

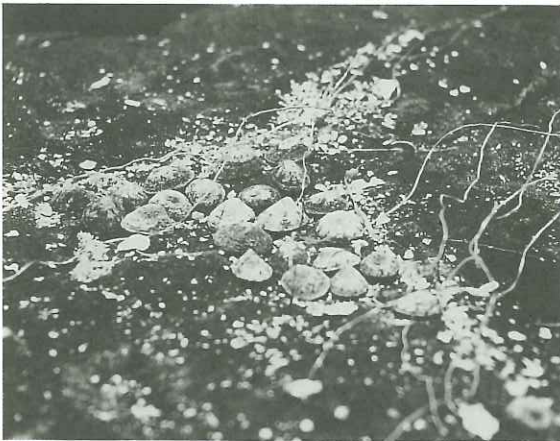
Prof. M. Gordon, Department of Biology, University of California, Los Angeles, U.S.A., and Dr. P. Chow, Department of Anatomy, The Chinese University of Hong Kong: to visit the institute.

20 October 1994

Mr. and Mrs. D. Barratt, England: to tour the institute.

31 October 1994

Prof. Jia Hang and a delegation of eight scientists from the Institute of Vertebrate Palaeontology and Palaeoanthropology, Academia Sinica, and the Institute of Geology and Palaeontology, Nanjing, China: to tour the institute with staff of the Hong Kong Museum of History.



Limpets, *Cellana grata*, 'wired up' on the shore of Lobster Bay to study the effects of thermal stress.

## RESEARCH VISITORS

From 7-13 November 1993

Mr. Lian Jian Sheng, South China Sea Institute of Oceanology, Academia Sinica,

Guangzhou, China. To undertake research on intertidal rocky shore ecology in Hong Kong.

From 9 February to 30 March 1994

Prof. B. McMahon and Mr. and Mrs. C. Airriess, Department of Biological Science, University of Calgary, Canada. To undertake research on the physiology of crabs.

From 14 March to 3 April 1994

Dr. E. Harper, University of Cambridge, U.K. To undertake research and co-operate with Prof. B. Morton in the writing of a book on the geology and biology of the proposed Cape d'Aguilar Marine Reserve.

From 15 March to 16 April 1994

Mr. R. Owen, School of Ocean Sciences, University of Wales, Bangor, U.K. To undertake research on growth banding patterns in Hong Kong barnacle shells, under the terms of the Tripartite Link.

From 19-21 July 1994

Mr. Li Hui and Mr. Cai Zeping, South China Sea Institute of Oceanology, Guangzhou, China. To undertake research under the terms of the Tripartite Link.

From 14 August to 3 September 1994

Prof. Xu Zhen Zu and Prof. Huang Jia Qi, Xiamen University, Xiamen, Fujian, China. To undertake research with Ms. Alice Chan on the identification of zooplankton in the southern waters of Hong Kong.

From 12 September to 4 October 1994

Mr. Lian Jian Sheng, South China Sea Institute of Oceanology, Guangzhou, China. To undertake research on intertidal rocky shore ecology in Hong Kong.

From 5 September to 15 October 1994

Mr. J. Erlandsson, Tjarno Marine Biological Laboratory, Sweden. To undertake research with Dr. G.A. Williams on intertidal ecology under the auspices of the Laurence Caplin Scholarship in Marine Biology.

From 3-15 October 1994

Mr. V. Kostylev, Tjarno Marine Biological Laboratory, Sweden. To undertake research with Dr. G.A. Williams on intertidal ecology using fractals under the auspices of the Laurence Caplin Scholarship in Marine Biology.

From 3-14 October 1994

Prof. P. Colin, Mrs. L. Colin and Mr. R. Sjoken, Coral Reef Research Foundation,



U.S.A. To work with Dr. Y. Sadovy on the chemical constituents of marine organisms.

From 5-8 October 1994

Dr. A. Hodgson, Department of Zoology, Rhodes University, South Africa. To work with Prof. B. Morton and Dr. Liu Jianhua on bivalve pallial eyes and limpet sperm morphology.

From 11 October to 11 November 1994

Prof. Dai Ai Yun and Mr. Cai Yi Xiong, Institute of Zoology, Academia Sinica, Beijing, China. To work with Dr. S.Y. Lee on the crab fauna of Hong Kong.

From 20-27 October 1994

Mr. Li Hui and Mr. Cai Ze Ping, South China Sea Institute of Oceanology, Guangzhou, China. To undertake research under the terms of the Tripartite Link.

## 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 up until 30 September 1994 amounted to HK\$78,720; proceeds from the sale of books was HK\$34,535. This year, the scheme has funded eight short-term visitors from China to the institute.



The Director and members of the Royal Asiatic Society pose for a group photograph during their visit to the Institute on the 6 November 1993.

## VISITOR STATISTICS

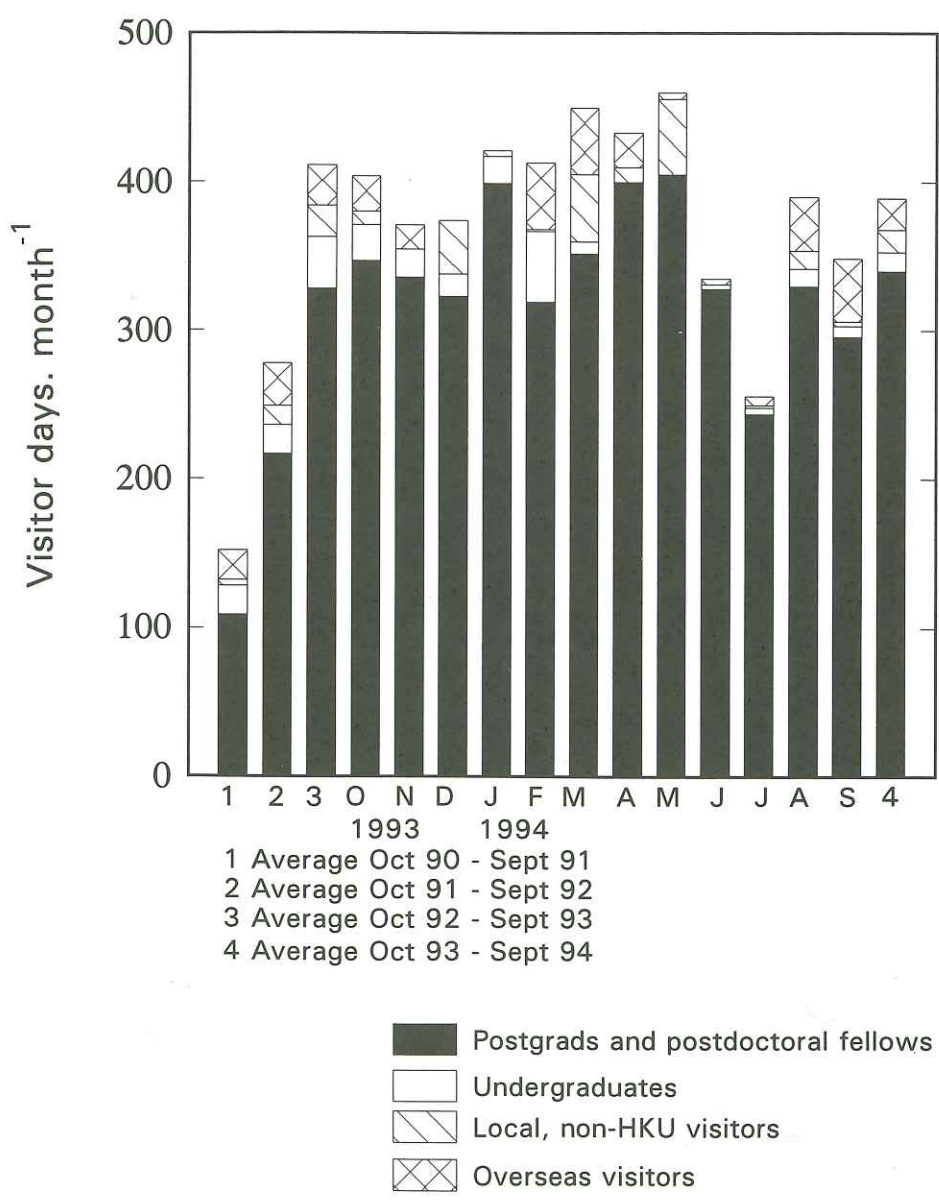
In addition to providing research facilities for local academics, students and visitors, the institute also entertains educational visits by public groups and welcomes volunteers to help with beach clean ups and other activities. The institute also provides a conference venue for University personnel and organizations with an interest in marine biology. Local diving clubs also make use of the institute's diving facilities and are helping staff and students with their research projects.

Visitor days.month<sup>-1</sup>

Date	Postgraduates and postdoctoral fellows	Undergraduates	Local, non H.K.U., visitors	Overseas visitors	Total
<hr/>					
<b>Average: October 1990 - September 1991</b>	<b>109</b>	<b>19</b>	<b>4</b>	<b>20</b>	<b>153</b>
<b>Average: October 1991 - September 1992</b>	<b>217</b>	<b>19</b>	<b>13</b>	<b>29</b>	<b>279</b>
<b>Average: October 1992 - September 1993</b>	<b>328</b>	<b>35</b>	<b>21</b>	<b>27</b>	<b>414</b>
<hr/>					
October 1993	347	24	9	24	404
November	336	19	0	16	371
December	323	15	36	0	374
January 1994	399	18	4	0	421
February	319	48	1	45	413
March	352	8	45	45	450
April	400	0	10	23	433
May	405	0	51	4	460
June	328	3	0	4	335
July	244	4	2	6	256
August	330	12	12	36	390
September	296	7	3	43	349
<hr/>					
<b>Average: October 1993 - September 1994</b>	<b>340</b>	<b>13</b>	<b>15</b>	<b>21</b>	<b>389</b>
<hr/>					

A present there is 1 postdoctoral fellow and 26 postgraduate students undertaking research at the Laboratory; of these 12 reside at The Residence.

## Occupancy of The Laboratory



## THE RESIDENCE STATISTICS

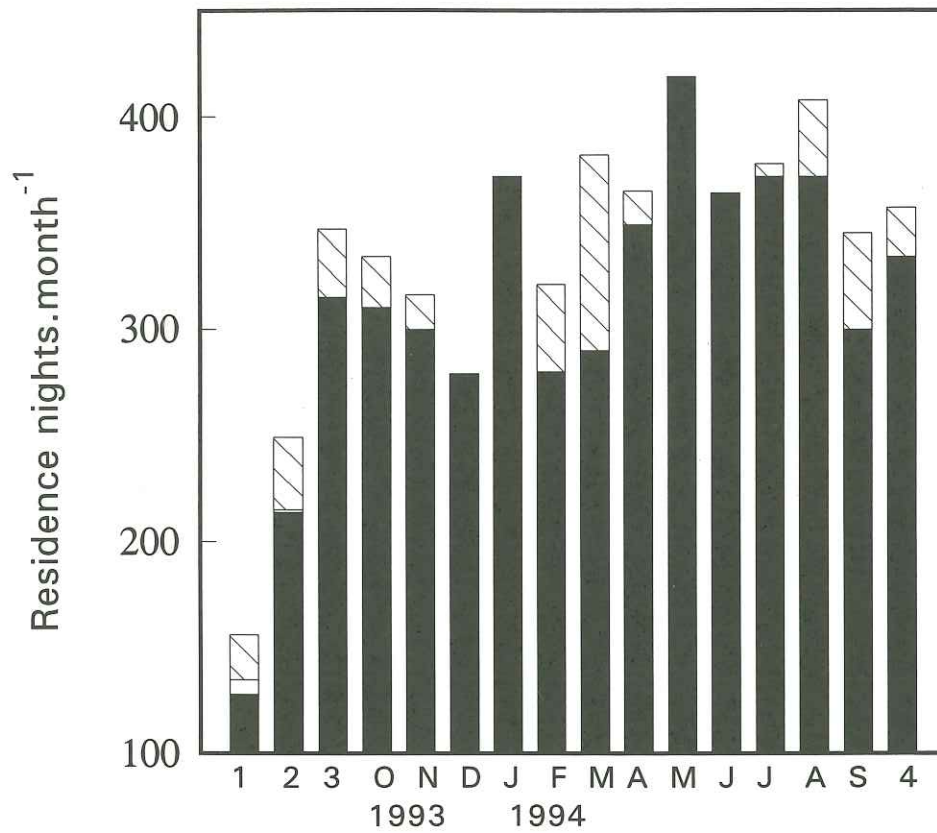
Over the past year, The Residence has well served its purpose of providing good residential accommodation for scientists and students to stay and work at the institute. The Residence, comprising ten bedrooms, of which four have *en suite* shower and toilets, is a self-contained facility. With its own lounge, cooking and washing facilities and a sun balcony with magnificent views, The Residence is popular with local and visiting scientists. In 1994, a second Residence will be completed, providing 6 new student rooms and two more visitor's rooms, one of which is a suite.

Residence nights.month<sup>-1</sup>

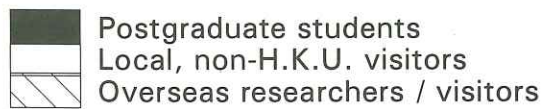
Date	Post-graduate Students	Local, non-H.K.U., visitors	Overseas researchers/Visitors	Total	%	%
<b>Average: October 1990 - September 1991</b>						
	128	7	21	158	26	(53)
<b>Average: October 1991 - September 1992</b>						
	214	1	34	248	41	(83)
<b>Average: October 1992 - November 1993</b>						
	315	0	32	348	58	(116)
October 1993	310	0	24	334	56	(112)
November	300	0	16	316	53	(106)
December	279	0	0	279	47	(94)
January 1994	372	0	0	372	62	(124)
February	280	0	40	320	53	(106)
March	290	0	92	382	64	(128)
April	349	0	16	365	61	(122)
May	419	0	0	419	70	(140)
June	364	0	0	364	61	(122)
July	372	0	6	378	63	(126)
August	372	0	36	408	68	(136)
September	300	0	45	345	58	(116)
<b>Average: October 1993 - September 1994</b>						
	334	0	23	357	60	(120)

Note: The % figures represent the proportion of the total available bed spaces, i.e., 20 bed spaces x 30 nights.month<sup>-1</sup> = a total of 600 residence nights. Since, however, most students and visitors require a room to themselves, occupancy rates based on 10 bed spaces x 30 nights.month<sup>-1</sup> = a total of 300 residence nights are also given in brackets.

## Occupancy of The Residence



- 1 Average Oct 90 - Sept 91
- 2 Average Oct 91 - Sept 92
- 3 Average Oct 92 - Sept 93
- 4 Average Oct 93 - Sept 94



## ACADEMIC ACTIVITIES

### STAFF

Professor B. Morton

- (i). Predatory gastropods of Cape d'Aguilar shores (with Dr. J.D. Taylor, London).
- (ii). Predation by *Apollon natator* (with Dr. J.D. Taylor, London).
- (iii). The geology and intertidal ecology of the Cape d'Aguilar Marine Reserve (with Dr. E.M. Harper, Cambridge).
- (iv). The biology of marine Bivalvia.

Dr. S.Y. Lee

- (i). Ecology of the Mai Po Marshes Nature Reserve.
- (ii). Predation by shore crabs with (Prof. R. Seed, Bangor).

Dr. Y. Sadovy

- (i). The reproductive biology of two fish species at Cape d'Aguilar, the Wrasse, *Halichoeres nigrescens*, and the Rockfish, *Sebasticus 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.



Professor B. McMahon, University of Calgary, carrying out research at the institute on the physiology of crab swimming.

### POST-DOCTORAL FELLOW

Dr. Liu Jianhua

- (i) Growth bands of limpets (with Dr. C.A. Richardson, Bangor).
- (ii) Competition among barnacles and limpets on rocky shores.

### RESEARCH ASSOCIATES

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

Dr. M.W.M. Yipp M.Phil., Ph.D (H.K.U.), Department of Applied Science and Chemical Technology, Hong Kong Polytechnic.

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

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

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

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

Prof. R. Cowan Ph.D (New South Wales), Department of Statistics, The University of Hong Kong.

Dr. S.G. Cheung Ph.D (H.K.U.), Department of Biology and Chemistry, The City Polytechnic of Hong Kong.

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

Dr. R.G. Ong Che Ph.D (H.K.U.), Applied Science, the Vocational Training Council Technical College.

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

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.

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

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

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

Mr. J.W. Bradford M.Arch (U.S.A.), Department of Architecture, The University of Hong Kong.

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

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

## HIGHER DEGREE STUDENTS

Ms. Carmen A. Anderson (Ph.D.)  
The productivity of the Mai Po mangrove.

Ms. Winnie P.W. Kwok (Ph.D.)  
Interactions between mangroves and grapsid crabs at the Mai Po Marshes Nature Reserve.

Ms. Alice L.C. Chan (Ph.D.)  
The zooplankton of Tai Tam Bay.

Mr. Sven Kaehler (Ph.D.)  
The ecology of epilithic crustose algae on Hong Kong shores.

Miss Kate D. Harper (Ph.D.)  
The ecology of *Acanthopleura japonica* on Hong Kong's exposed rocky shores.

Mr. Sanjay Nagarkar (Ph.D.)  
The ecology of intertidal, epilithic, cyanobacteria.

Mr. Peter R.J. Collinson (Ph.D.)  
The ecology, growth and reproduction of Hong Kong corals.

Ms. Susan Hawkins (Ph.D.)  
The productivity of Lobster Bay.

Mr. Y.M. Mak (Ph.D.)  
The ecology of rocky shore littorines.

Mr. Robin Kennish (Ph.D.)  
Crab herbivory on the shores of Cape d'Aguilar.

Ms. Huang Qin (Ph.D.)  
Shell and isoenzyme polymorphism of the Neritidae.

Mr. Albert W.Y. Leung (Ph.D.)  
Fisheries enhancement potential of the Hoi Ha Wan Artificial Reef.

Ms. Katherine K.Y. Lam (Ph.D.)  
Coral colonization of the Hoi Ha Wan Artificial Reef.

Mr. K.F. Leung (Ph.D.)  
Leaching of trace metals from the Hoi Ha Wan Artificial Reef.

Ms. Helen S.M. Chiu (Ph.D.)  
Energetics of the rock oyster *Saccostrea cucullata*.

Ms. Winnie S.M. Tang (Ph.D.)  
A coastal GIS database, maps and virtual reality computing.

Ms. Tracy Clark (Ph.D.)  
The ecology of Lobster Bay corals.

Ms. Chan King (Ph.D.)  
Effects of pollution on the life history strategy of *Nassarius festivus*.

Mr. Steve McChesney (M.Phil.)  
The intertidal mudflat community at the Mai Po Marshes Nature Reserve.

Mr. Alan W.L. Chan (M.Phil.)  
Retention and depuration of trace metals by commercial bivalves.

Miss Phoebe W.C. Sze (M.Phil.)  
Bioenergetics and accumulation of copper in *Perna viridis* and *Septifer virgatus*.

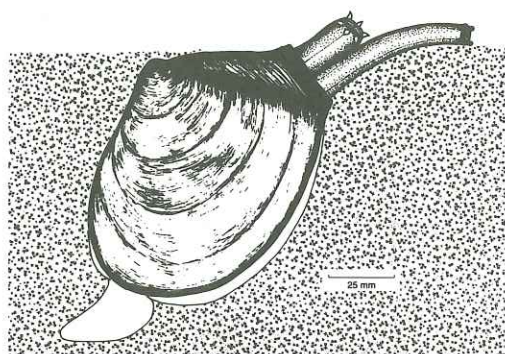
Miss Josephine K.Y. Yang (M.Phil.)  
Ecology of the mudskipper *Boleophthalmus pectinirostris* at the Mai Po Marshes Nature Reserve.

Mr. Vincent C.S. Lai (M.Phil.)  
Feeding strategies of the crab *Thalamita danae*.

Ms. Pauline Y.F. Tong (M.Phil.)  
Herbivory in local mangroves.

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

Mr. Patrick P.F. Lau (M.Phil.)  
The reproductive biology of Threadfin sea bream.



*Trigonothracia jinxingae*, Xiamen, China, 1994.

## NEW ARRIVALS

Ms. Winnie S.M. Tang. To read for a Ph.D. degree under the supervision of Prof. B. Morton and Mr. J. Bradford, (Department of Architecture) on a coastal GIS database, maps and virtual reality computing.

Ms. Chan King. To read for a Ph.D. degree under the supervision of Prof. B. Morton on the energetics of a scavenging snail and the effects of tributyltin upon it.

Ms. Tracy Clark. To read for a Ph.D. degree under the supervision of Prof. B. Morton on the corals of Lobster Bay and the rock pool.

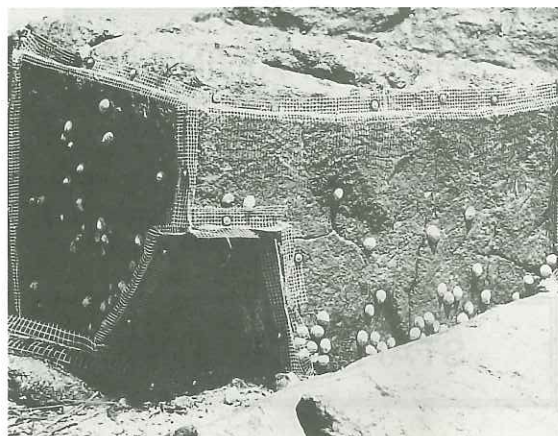
Mr. Terence C.W. Fong. To read for a M.Phil. degree under the supervision of Dr. S.Y. Lee on seagrass ecology.

Mr. Patrick P.F. Lau. To read for a M.Phil. degree under the supervision of Dr. Yvonne Sadovy on the reproductive biology of the Threadfin sea bream.

Mr. Albert C.C. Au was appointed a Technician in the laboratory from the 1 March 1994 and works under the direction of Prof. B. Morton.

Mrs. Priscilla S.H. Fung was appointed Clerical Assistant in the institute from the 1 November 1994 and is now the Receptionist.

Mr. and Mrs. K.T. Wong were appointed as Artisan and Cleaner, respectively, with effect from the 1 November 1994 and both reside at The Residence where they also act as Caretakers.



A caging experiment on the shores of Lobster Bay to assess the effects of shading and, thus, temperature on limpets.

## UNDERGRADUATES

During 1993-1994, Ms. D.S.C. Wong completed a final year undergraduate project on "Activity and foraging patterns of *Cellana grata* under laboratory controlled tidal regimes", under the supervision of Dr. G.A. Williams.

During 1993-1994, Mr. Leonard T.F. Wong completed a final year undergraduate project on "The ecology of the Cape d'Aguilar sea arch", under the supervision of Dr. G.A. Williams.

During 1993-1994, Ms. Queenie Y.C. Ng and Ms. Yip Yin completed their final year undergraduate projects on "Aspects of mangrove leaf litter decomposition", under the supervision of Dr. S.Y. Lee.

Ms. Rita S.H. Leung is undertaking her final year project (1994-1995) on "Microhabitat variation in refuges of *Cellana grata*", under the supervision of Dr. G.A. Williams.



## SUMMER STUDENTS

The following four students undertook summer work.

Ms. Leung Shui Hing and Ms. Chan Wai Man were appointed as Student Research Assistants to the GIS database project.

Mr. Lee Tsan and Ms. Law Man Kwan were appointed as Student Research Assistants to the Chinese Humpback dolphin project.

## STAFF TRAINING

Mr. Cheung Ming

During June - August 1994, Mr. Cheung undertook the First Aid course organized by the St. John's Ambulance Association.

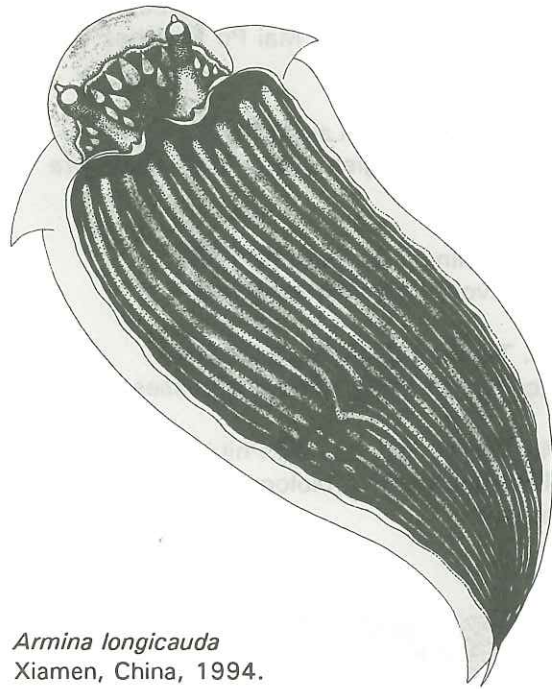
## STAFF ACTIVITIES

From January 8-16 1994, Prof. B. Morton visited the Third Institute of Oceanography at Xiamen, Fujian Province, China, where he undertook research on *Thracia jinxingi*, had discussions on co-operative research and was made an Honorary Professor and Member of the Academic Committee of the Institute. He also visited the Department of Oceanography and the Centre for Environmental Research of Xiamen University where he gave seminars and discussed co-operative research possibilities.

January 24-26 1994

Prof. B. Morton and Dr. S.F. Leung visited the South China Sea Institute of Oceanology, Academia Sinica, Guangzhou, China, where they had discussions with senior staff on future research co-operation. Specific areas for discussion included funding for publication of the Proceedings of the 1993 International Conference on the Marine Biology of the South China Sea, the convening of a Dolphin Workshop in May 1994 and an exchange of students to work on each other's artificial reef at Hoi Ha Wan in Hong Kong and Sanya in Hainan Island.

From May 28-31 1994, Prof. B. Morton, Ms. L.J. Porter and Mr. E.M. Parsons visited the South China Sea Institute of Oceanology,



*Armina longicauda*  
Xiamen, China, 1994.

Guangzhou, China, where they had a meeting with dolphin researchers from China and Taiwan. They were accompanied by Mr. S. Leatherwood of Ocean Park Ltd. and the visit was sponsored by the Ocean Park Conservation Foundation.

From 14 July - 15 August, 1994, Prof. B. Morton was appointed Honorary Professor in the Department of Biology, University of the Azores, Portugal, and where he undertook research on intertidal ecology.

From 1-14 August 1994, Dr. Y. Sadovy visited the Marine Resources Division of the Palau Government to discuss local research and management of groupers.

In August 1994, Dr. G.A. Williams visited the University of Wales, Bangor, U.K. and gave a seminar on "Factors structuring communities on seasonal tropical rocky shores".

From the 2-12 April 1994, Mr. P. Collinson visited Nha Trang Marine Biological Research Station, Vietnam, to undertake growth studies on corals and train local scientists in coral reef survey methods.

From 6-15 August 1994, Dr. Liu Jian Hua was invited to visit the First Institute of Oceanography, State Oceanic Administration, Qindgao, China. She presented two papers: "Marine Biology in Hong Kong" and "The effects of physical factors and grazing by limpets on the intertidal algal community at

Cape d'Aguilar, Hong Kong". She also undertook research on rocky shore ecology in Qingdao.



Members of the Marine Parks and Reserve Working Group of the Country Parks Board visited the institute on the 24 February 1994.

### 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.

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

Member: WWF Hong Kong, Projects Committee.

Chairman: 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: Endangered Species Advisory Committee. The Hong Kong Government.

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

Member: Planning and Management Committee, The Country Parks Board.

Chairman: The Marine Parks and Reserves Working Group, The Country Parks Board.

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

Member: United Nations Environment Programme: United Kingdom Committee.

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

Member: 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.

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*.

Dr. S.Y. Lee

Member: Marine Parks and Reserves Working Group, The Hong Kong Government.

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

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

Member: WWF Hong Kong, Hoi Ha Wan Committee.

Member: Standing Committee on Mangrove Ecological Research, Ecological Society of China.

Mr. K.F. Leung

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

Ms. L.J. Porter  
Secretary: The Council of The Hong Kong  
Marine Conservation Society.

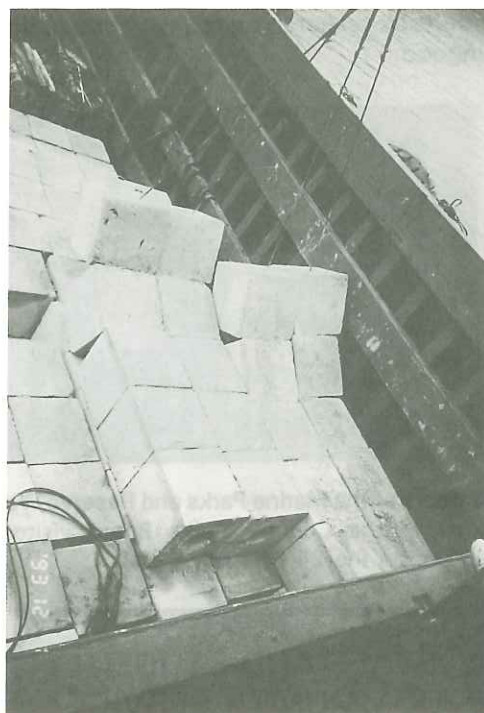
Dr. Y. Sadovy  
Member: Hong Kong Government Working  
Group on Shark Attacks.

Ms. Winnie S.M. Tang  
Editor: *GIS Asia/Pacific Journal*.

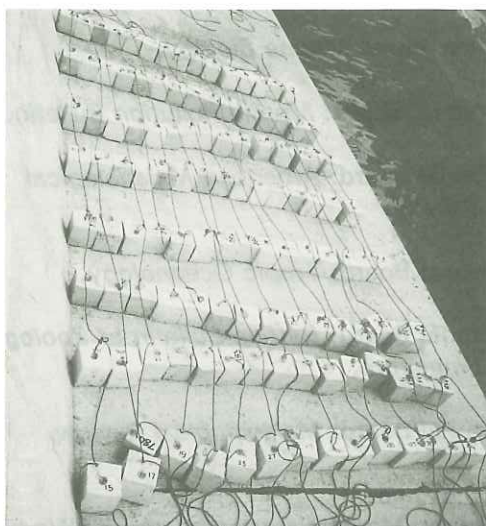
Conference Secretary: International  
Symposium on Geoinformatics 1995: RRS,  
GIS, GPS in Sustainable Development and  
Environmental Monitoring.

Dr. G.A. Williams  
Member: WWF Hong Kong: Hoi Ha Wan  
Committee.

Member: The Council of The Hong Kong  
Marine Conservation Society.



A barge carried the reef blocks to Hoi ha Wan on  
the 3 December 1993.



Strings of experimental blocks sorted and waiting  
to be put on the artificial reef at Hoi Ha Wan.



Mr. Albert W.Y. Leung supervising the placement  
of the artificial reef blocks at Hoi Ha Wan.



Strings of twenty reef blocks are lowered into the  
sea at Hoi Ha Wan.

## CONFERENCES AND WORKSHOPS

From 26-29 October 1993, Dr. Y. Sadovy attended the International Workshop on Tropical Groupers and Snappers, Campeche, Mexico, and presented a paper entitled "Reproduction in an aggregating grouper, the Red hind, *Epinephelus guttatus*", with A. Rosario and A. Roman.

From 28 November to 4 December 1993, Dr. Y. Sadovy attended the Fourth Indo-pacific Fish Conference in Thailand. She presented a paper entitled "Sexual development and sexuality in the Nassau grouper, *Epinephelus striatus*", with Dr. P. Colin, Coral Reef Research Foundation.

From 2-7 June 1994, Dr. Y. Sadovy attended the American Society of Ichthyologists and Herpetologists, Los Angeles, California, U.S.A. She presented a paper entitled "Peculiarities of the male urogenital apparatus of grunt species (Haemulidae)", with Dr. M.B. Rasotta, University of Padova, Italy.

From 7-9 November 1993, Prof. B. Morton attended the Workshop on Regulatory Toxicology organized by the Environmental Protection Department of the Hong Kong Government. On the 8 November, he chaired the Session on "Protection of the Aquatic Environment".

The 12th Annual Scientific Meeting of The Marine Biological Association of Hong Kong was held on Saturday 18 December 1993. The following staff and students presented talks.

Dr. J. H. Liu. "Competitive interactions between two limpets, *Cellana toreuma* and *Patelloida saccharina* co-occurring on a intertidal rocky shore at Cape D'Aguilar, Hong Kong".

Ms. M.W. Cha. "The physiological ecology of *Tapes philippinarum* in Starfish Bay, Hong Kong".

Mr. W.L. Chan. "Uptake, retention and depuration of trace metals from some commercial bivalves in Hong Kong".

From the 8-11 June 1994, Prof. B. Morton and Dr. S.Y. Lee represented The University of Hong Kong at the Association of Southeast Asian Institutions of Higher

Learning (ASAIHL) Seminar on Sustainable Development of Tropical Marine and Coastal Ecosystems at the Universiti Sains Malaysia, Penang, Malaysia, and presented the following papers.

Prof. B. Morton. "The history and future of coastal conservation in Hong Kong".

Dr. S.Y. Lee and Prof. B. Morton. "Coastal marine reserve management in Hong Kong: conservation in the face of traditional exploitation and development".

From 22-26 August 1994, Ms. K.D. Harper and Dr. G.A. Williams attended the VI International Congress of Ecology in Manchester, U.K. Ms. Harper presented a paper entitled "Temporal changes in the vertical distribution of species on a semi-exposed tropical rocky shore".

Dr. Williams chaired a session in the Marine Ecology Symposium and delivered a paper entitled "Seasonal changes in community structure on rocky intertidal shores in Hong Kong".

From the 4-8 July 1994, Mr. P. Collinson attended the PACON Pacific Asia Congress at James Cook University, Australia, and presented a paper on "The coral communities of Hong Kong: survival in a metropolis".

From the 8-12 July 1994, Mr. P. Collinson attended the International Society for Reef Studies/Australian Marine Science Association Conference at James Cook University, Australia, and presented a paper "Growth and density banding in the coral *Porites lobata* from the marginal environment of Hong Kong".

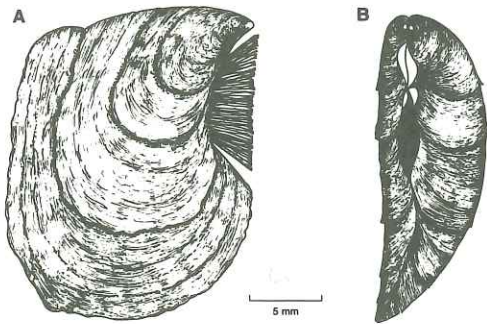
In June 1994, Mr. S. Kaehler visited the Herbarium of The Natural History Museum, London, and Dr. R. Fletcher at Portsmouth University, U.K. to study the taxonomy of encrusting algae.

From the 14-16 September, Ms. Winnie S.M. Tang attended the First Arc/Info China User Conference in Beijing. She presented a paper entitled "Utilizing Arc/Info for natural resource management in Hong Kong" and presented a map on "A new geographic information systems approach in making the first

vegetation map of Hong Kong".

From the 20-23 September 1994, Ms. Winnie P.W. Kwok attended the conference Coastal Zone Canada 1994 at Halifax, Canada, and made a poster presentation entitled "The role of grapsid crabs in nutrient recycling at the Mai Po Marshes Nature Reserve, Hong Kong".

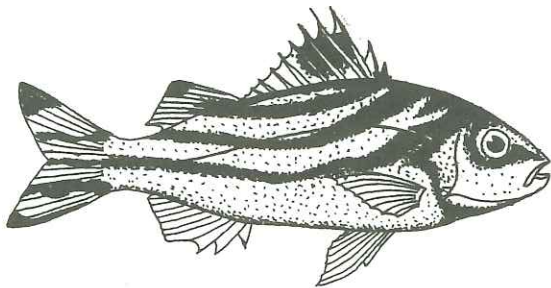
From the 14-18 October 1994, Dr. S.Y. Lee participated in a Workshop on Decapod Behaviour: the Potential for Experimental Manipulation at the University of Wales, Bangor, U.K. and presented a paper entitled "Cheliped size and structure: the evolution of a multi-functional decapod organ".



*Isognomon legumen*, Lobster Bay, 1993. A, side view; antero-ventral view.



Ms. Phoebe Sze, Mr. E.M. Parsons and Ms. K. Chan and staff of the Bermuda Biological Station for Research, 1994 with Mr. and Mrs. R.E. Moore.



*Therapon jarbua*, Lobster Bay, 1994.

## STUDENT AND STAFF SUCCESSES

Mr. L. Young obtained his Ph.D. for a thesis entitled "The ecology of Hong Kong Ardeidae (Aves) with special reference to the Chinese Pond heron at the Mai Po Marshes Nature Reserve".

Ms. M.W. Cha obtained her Ph.D. for a thesis entitled "The ecology of *Tapes philippinarum* (Bivalvia: Veneridae) in Starfish Bay, Hong Kong, and its potential as a biological indicator of coastal pollution".

Mr. A.W.Y. Leung obtained his M.Phil. for a thesis entitled "The fish fauna of Lobster Bay, Cape D'Aguilar, Hong Kong".

Ms. Alice L.C. Chan has been awarded a Post-doctoral fellowship by the Croucher Foundation to undertake research at the University of Wales, Bangor, U.K., on plankton.



Ms. Winnie S.M. Tang receives her Caltex Green Fund Environmental Award from the Governor of Hong Kong, the Hon. Christopher Patten.

## AWARDS

In February 1994, Ms. Winnie S.M. Tang won an Environmental Award from The First Hong Kong Green Project Awards Competition sponsored by The Caltex Green Fund and The South China Morning Post. She was also presented with a special Judges' Merit Award to develop a multimedia GIS database for Hong Kong.

From 14 to 16 September, Ms. Winnie S.M. Tang won an Award for Excellent Cartography, which was voted upon by participants at the Map Design Competition of the First Arc/Info Conference in Beijing.

From September 26, 1994, Prof. B. Morton was made an Outstanding Foreign Expert of Fujian Province by the Foreign Affairs Office of Xiamen Municipal Government, Xiamen, China.

#### TRIPARTITE EXCHANGE SCHEME

Established in 1992 and supported by The Swire Group of Companies and the British Council, the exchange scheme forges 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, is for three years and facilitates exchange of staff and students.

In 1994, the following exchanges were approved:

From Hong Kong:

From 4 July to 27 August 1994, Mr. Y.M. Mak visited the University of Wales, Bangor, U.K. to undertake research on the feeding behaviour of high shore littorinids and gave a talk on the ecology of Hong Kong littorinids.

From Bangor, U.K.:

Mr. R. Owen: to visit Hong Kong from the 14 March to 16 April 1994 to undertake research on growth banding patterns in Hong Kong barnacle shells. Also, to visit Guangzhou and give seminars.

From Guangzhou, China:

From the 19-21 July 1994, Mr. Li Hui and Mr. Cai Zeping: on route to Bangor where they worked with Prof. R. Seed and Dr. D. Grove, respectively.

Proposals for visits under the exchange scheme for 1994-1995 are invited and should, in the first instance, be made to the Chairmen of the Co-ordinating Committees in Hong Kong (Professor B. Morton), Bangor (Professor R. Seed) and Guangzhou (Professor Zou Renlin).

#### LAURENCE CAPLIN SCHOLARSHIP IN MARINE BIOLOGY

In memory of Laurence Caplin (7 November 1914 - 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.

In 1993-1994, two awards were made to Mr. J. Erlandsson and Mr. V. Kostylev from Sweden and Russia, respectively, to undertake a research project on movement complexity in intertidal gastropods with Dr. G.A. Williams. This project investigated behaviour patterns in intertidal animals of the proposed Cape d'Aguiar Marine Reserve.

The project uses fractal dimensions to measure complex shapes, such as substratum roughness, species distributions and trial complexity. The application of this procedure to other areas of marine biology, such as tidal variations and seaweed morphology, were also explored with other workers at the institute.



Mr. J. Erlandsson (Sweden) and Mr. V. Kostylev (Russia), recipients of 1993/1994 Laurence Caplin Scholarships discuss their research at Cape d'Aguiar.

## RESEARCH AND OTHER ACTIVITIES IN MARINE SCIENCE

### BERMUDA BIOLOGICAL STATION FOR RESEARCH

The Bermuda Biological Station for Research Far Eastern Trust this year sponsored three graduate students from The Swire Institute of Marine Science to go to Bermuda and participate in an advanced course on "Analysis and Assessment of Marine Contaminants".

The three students selected were Ms. Chan King, Ms. Phoebe Sze and Mr. E.M. Parsons who visited Bermuda from 3-24 July 1994.

### AN ARTIFICIAL REEF AT HOI HA WAN

Hong Kong Electric Co.Ltd. and China Light and Power Co.Ltd., donated in 1993 the initial sum of HK\$2.7 million to the Institute to build, deploy and study an Experimental Artificial Reef at Hoi Ha Wan, Hong Kong's first proposed Marine Park. The artificial reef has been constructed from several mixes of PFA (pulverized fuel ash) and cement, the former being a by-product of power generation from coal-burning power stations in Hong Kong. The reef comprises 1000 blocks each of 0.5 x 0.5m<sup>2</sup> plus 1000, smaller, experimental, blocks made up of four different PFA and cement mixes. The reef was laid on the seabed at Hoi Ha on the 30 November and 3 December 1993. The aims of the reef project are:

1. To ascertain whether or not such a structure can be used safely to rebuild marine habitats in Hong Kong which have been progressively destroyed by shore reclamation and pollution.
2. To determine whether or not such structures will act as either fish aggregating or breeding devices to stimulate fisheries production in Hong Kong's coastal waters.
3. To understand the processes of marine life colonization of the artificial reef by

encrusting organisms, with particular reference to corals. That is, can corals, in particular, be encouraged to grow on the reef and thereby create a new coral reef.

4. To research the leaching of trace metals from the reef blocks and their uptake by encrusting marine life, coral and fish.

The grant provides research scholarships for three Ph.D. 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 have taken up the scholarships.

Mr. Albert Y.W. Leung. Formerly a Fisheries Officer with the Agriculture and Fisheries Department of the Hong Kong Government, Albert supervises field work at Hoi Ha Wan and researches the fish fauna of the artificial reef.

Ms. Katherine K.Y. Lam. A graduate in Environmental Science from The University of Hong Kong, Katherine researches 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 researches the leaching of trace metals from the reef blocks and their uptake and transport within the marine life of the artificial reef.

This research is co-ordinated by an Artificial Reef Working Group chaired by Prof. B. Morton and which meets every six months. This year, Hong Kong Electric Co.Ltd. and China Light & Power Co.Ltd. increased their donation to the project by 0.4 million to allow for more detailed studies of PFA breakdown in seawater.

### SEAGRASS REHABILITATION

Dr. S.Y. Lee was awarded in 1993 the contract (HK\$200,000) for a Seagrass Rehabilitation project for *Zostera japonica* beds to be affected by the New Airport construction work at Tung Chung, Lantau

Island. The objectives of the research are to assess the stress levels experienced by the seagrass and propose measures to minimize construction impacts.

A second award of HK\$630,000 was made by the Government in April 1994 to sponsor basic research into the community ecology of local seagrasses. The project is jointly conducted by Dr. S.Y. Lee and Prof. R.S.S. Wu (City Polytechnic of Hong Kong).

## CORAL SPAWNING

From the 26 May to 2 June 1994, spawning of the staghorn coral *Acropora humilis* was recorded and researched by Mr. Peter R.J. Collinson, Ms. Katherine Lam and volunteer helpers at The Swire Institute of Marine Science. Coral colonies spawned over a number of nights, with the greatest numbers of gametes released on the 8 June from 2100 to 2120 hr. Fertilization experiments were conducted to test self and cross fertilization rates amongst colonies.

## 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. Although there is little information available thereafter, it seems certain that the dolphin has been a resident since that time. 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, who are doing the Ph.D. level research, are investigating the biology of the dolphins, their behaviour and ecology and the impacts of pollution and stress upon them. The goal of the project is to determine the

best conservation policy for Hong Kong's resident dolphin population.

This research is funded by the Hong Kong Government and is co-ordinated through a Dolphin Working Group chaired by Prof. B. Morton and which meets every six months. Ocean Park Ltd. is a supporter of the project. Helicopter time for surveys was recently sponsored by a donation of HK\$60,000 to the institute from Memotime (H.K.) Ltd.

## BIRD SIGHTINGS

Mr. Richard Lewthwaite of the Hong Kong Birdwatching Society reports that at Cape d'Aguilar on 12 September 1994 during typhoon Luke he saw twelve adult Aleutian terns, thirty nine Common terns, three adult Bridled terns and 117 other terns of which four were possibly Greater crested terns and fifty were possibly Roseate terns. A flock of about fifty small, unidentified, waders also flew by. Such records result from the birds being blown ashore by typhoon winds.



Sediment traps ready to be placed in Lobster Bay as part of the researches of Ms. S. Hawkins.



Volunteer divers help Ms. S. Hawkins place her sediment traps in Lobster Bay.



## 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 GIS 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 database is being cross-linked with the Reference Collection of Hong Kong's Marine Flora and Fauna now being developed at the institute.

The project has been 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.

## WORLD WIDE FUND FOR NATURE HONG KONG

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

In particular, our researches provide information on and management procedures for The Mai Po Marshes Nature Reserve and the proposed Hoi Ha Wan Marine Park and educational materials produced by the Island House Conservation and Field Studies Centre.

## THE MARINE BIOLOGICAL ASSOCIATION OF HONG KONG

Founded in 1982, The Marine Biological Association of Hong Kong has some 100 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 journal, *Asian Marine Biology*. The Association's library is housed at The Swire Institute of Marine Science.

Dr. S.Y. Lee is Chairman of the Association, Mr. K.F. Leung is the Membership Secretary and Prof. B. Morton is a Council member and Editor of the association's annual scientific journal, *Asian Marine Biology*.

## THE HONG KONG MARINE CONSERVATION SOCIETY

Found in June 1991, The Hong Kong Marine Conservation Society has some 90 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 Secretary of the Society and Dr. G.A. Williams is a member of the Council.

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

The inshore sea areas around the institute, already designated a Site of Special Scientific Interest, have been recommended by a Country Parks Board Marine Parks and Reserves Working Group as of sufficient importance to constitute Hong Kong's first marine reserve. On 8 October 1993, the Governor of Hong Kong announced that the Executive Council had, in principle, approved the establishment of marine parks and reserves.

Draft legislation will go before the Legislative Council in late 1994.

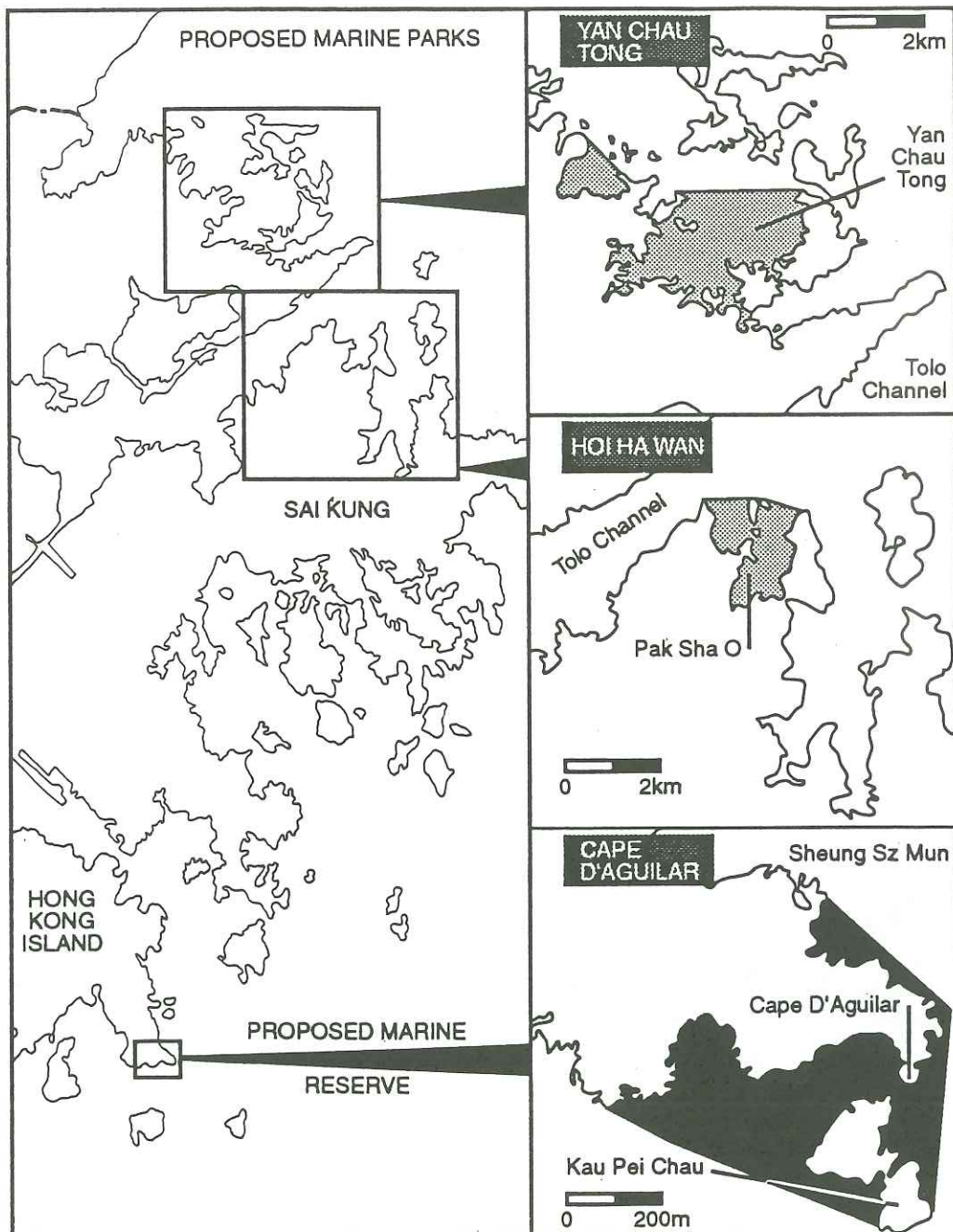
## HONG KONG'S 5TH and 6th HOI HA WAN UNDERWATER PHOTOGRAPHIC SHOOTOUT

The Fifth Hoi Ha Wan Underwater Photographic Shootout Competition took place on the 6-7 November 1993 with Mr. Peter R.C. Collinson and Ms. Susan Hawkins participating as the "Cape Crusaders" team.

The Sixth Hoi Ha Wan Underwater Photographic Shootout Competition took place on the 22-23 October 1994 with Ms.

L.J. Porter (and Mr. R. Parry Jones) and Mr. E.M. Parsons (with Ms. C.L. Nightingale) participating as the "People with a Porpoise" and "Tweedledum and Tweedledummer" teams.

The coral-fringed bay of Hoi Ha in the north-eastern New Territories has been proposed as Hong Kong's first marine park. Sponsored by WWF Hong Kong, The Marine Biological Association of Hong Kong and The Hong Kong Marine Conservation Society, the annual shootout raises public awareness and funds to publish educational material about the bay and Hong Kong's marine life.



Hong Kong's proposed marine parks and reserves.

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

### FUNDING OPPORTUNITIES<sup>+</sup>

- A. If you have a good honours degree from a recognized tertiary institution, you will be eligible for award of a Scholarship 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. 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 residence at the institute and a modest *per diem* allowance. Such visits are normally for less than one month.
- C. Postgraduate students who are 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" 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 a grant which allows young overseas scientists to undertake research at The Swire Institute of Marine Science for periods of up to 3 months.



Photo: E. Stokes

The Residence

+ 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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