

News of the Marine Option Program University of Hawaii at Manoa

Seawords November 25, 1986 Vol II No. 10

For a career in oceanography

# MOP student values job experience

By Brett Lomont

Barry Choy is an undergraduate student with his foot firmly in the door of a career in oceanography. The University of Hawaii does not offer an undergraduate degree in oceanography, but through the Marine Option Program and the Blue-Water Marine Lab (BML), Choy has already found access to valuable experiences and opportunities in the diverse field of marine science.

Choy knows that he enjoys working at sea, based on his experience as a BML Cruise Leader and as an assistant for the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS).

His first job out of high school took him to Tern Island where he worked for the FWS, during the summer, doing a variety of tasks, which included collecting lobster larvae, studying bird populations and maintaining equipment.

Choy said, "That was my first exposure to the Northwest Hawaiian Islands. Tern Island is a beautiful place. I've wanted to go back ever since, and to see all of the other islands too."

That was in the summer of '83. This past summer, MOP Director Sherwood Maynard told Choy about a job opening with NMFS. Choy was hired by Dr. Gerrodette to assist with experiments on monofilament gill-nets



Barry Choy diving off Hancock Sea Mount. He is holding a bangstick and a squid gillnet drifts near by.

as part of the NMFS Entanglement Project. Their work took them out to the Hancock Seamount, about 200 miles northwest of Midway Island, aboard the National Oceanographic and Atmospheric Administration's 178-foot ship the R/V Townsend Cromwell.

The gill-nets they studied are the type used extensively in the commercial squid fisheries of the North Pacific.

# Currents Currents Currents



## Maui

MOP is looking for donations of equipment. They need a refrigerator and any diving equipment you can spare. Call Patti (242-1203) if you can help.

By the way, Happy Birthday Patti (December 29). She will finally be 21.

On November 30, MOPers and their families are going to La Perouse Bay to snorkle and cook-out. "It's good to get out of the class room," Patti said.

They are also going to take a field trip to Maalaea Bay to ID limu.

Randy Campbell's spiny lobster just had its second molting and is getting bigger.

## Manoa

MOP wants to thank Paul Wolcott for the great job he did at the MOP-in on November 7. He spoke about deep sea scuba diving. Everyone was very impressed with the barrel with the shark bite in it. Thanks Paul.

Randy Harr went as volunteer to Hawaii's next island, Loihi, aboard the R/V Moana Wave with Fred Dunnebier from HIG to collect data. During the four day trip the crew made a map of the sub-sea volcano using a sonar scanner and picked up bottom sound recorders that had been taping sounds of ocean life.

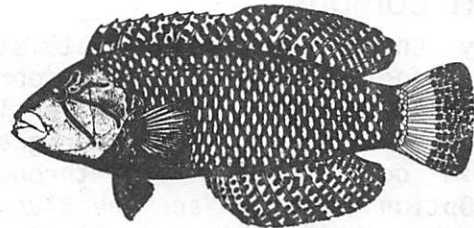
Welcome to the new PACON '88 coordinator Jessica St. George. The PACON office has moved to Crawford 322 but the phone number is the same, 948-6163.



## Windward

The MOP Student Study Center/Lounge is almost complete and Miki would like to thank Jim Szyper, Greg, Dennis, Steve, Joan, Emory, Dave, Seth, and Krupp for helping with the building.

Miki and Ligaya Stice are going to Lanai over the Thanksgiving holiday aboard the 50 ft., steel-hulled cutter Sunshine. Lobsters are in the plan.



## Hilo

MOP is revamping the 190 gallon aquarium in the campus center. Everything will be cleaned or replaced. A representative array of reef life will be collected to fill the aquarium.

On Nov. 19, MOP video taped the Kokua Hilo Bay Committee meeting. Several MOP students attended. The video will help inform the public about the bays pollution problems.



## Seawords



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Honolulu, Hawaii 96822

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## Fun and educational

# MOP Students Teach SCUBA

By Lani Teshima

A very popular and useful sport in Hawaii, SCUBA diving allows a person to experience the totally different world of underwater marine life. And several MOPers are helping people get acquainted with the sport.

Formed in 1982, the UH Aquanauts became a Registered Student Organization 14 months ago. According to UH Aquanauts' Club President and MOP member Richard Neumann, there are currently over 100 members.

Neumann said that three major problems a diver often encounters are: lack of diving gear, transportation and a diving partner, or buddy. The club tries to alleviate these problems by offering different services. For example, rental equipment is available to members at a discount.

Every Saturday, the club meets at Sinclair Circle at 8 a.m. to carpool to a dive site, usually returning by noon.

The club is open to anyone interested in the ocean, and Neumann estimates that one out of five club members is a MOP student.

One thing Neumann emphasized, is the fact that the ocean can be enjoyed by anyone. The club has an open-door policy, and will not turn someone away because he/she is not a certified SCUBA diver.

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*... Neumann estimates that one out of five club members is a MOP student.*

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In fact, according to Neumann, there are many people who go on the Saturday dives just to collect shells, beachcomb or snorkel.

"We live in the middle of the ocean," Neumann said, "and I would like people to



Safety Diver Dave Haney and Dive Team Leader Antonio Daroya are two MOP students shown here in HTW '86.

Photo by James Gonser

take advantage of it and at least get acquainted with the water."

People unaccustomed to SCUBA diving often feel threatened by all the equipment a diver must don. ("The man-from-Mars effect," Neumann said.) Because of this, the club is paying more and more attention to the snorkeler, who might just be getting used to the idea of being in the ocean. Rentals of snorkeling gear are also available through the club.

See page 4

# SCUBA

For those who would like to become a certified SCUBA diver, the Aquanauts even offers open water certification through PADI. Other more advanced certifications are also available through the club.

Another way to become certified is to take night classes conducted on the Manoa campus by Alan Hong at the pool for NAUI open water certifications. Hong is a MOP alumnus and an Ocean Recreation Specialist with the Department of Parks and Recreation.

In addition to diving classes, the Aquanauts also conduct Red Cross, First Aid and CPR courses once a year, at a discount for UH students.

These certificates could also come in handy for MOP students who are considering participating in a Transect Workshop, or a transecting survey (such as the one planned for next summer on Lanai). The First Aid, CPR and SCUBA certifications are all part of the requirements for a participant.

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*For safety reasons, the Aquanauts as a club will only conduct recreational dives.*

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According to Manoa MOP student Geoff Saint (who was involved in previous transect workshops and was Dive Master for the HTW), there are different positions available at the workshops, depending on the skill level of the diver. For example, each dive team has a safety diver, a team leader and regular divers.

For safety reasons, the Aquanauts as a club will only conduct recreational dives. Because of this, they will not go on deep dives that require decompression stops at specific depths underwater. According to Neumann, such dives should be left to those who are very knowledgeable about the topic.

One such knowledgeable diver is MOP alumnus Paul Wolcott. On most weekends, Wolcott goes on dives that are as deep as 230 feet. Saint, Hong and Neumann all agree that there is an incredible amount

of preparation that goes into the planning of such a deep dive, and that such dives should only be conducted by the most experienced divers.

"I keep telling Paul (Wolcott) to get himself a caddy for all the gear he has to carry," Hong said. Wolcott uses two tanks, with a back-up regulator in case his primary should fail. His weight belt looks more like a utility belt, with fluorescent powder packets, and three types of flares (smoke, light and aerial) for emergencies. Wolcott says that with his emergency gear, he can last up to three days in the ocean.

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*His weight belt looks more like a utility belt.*

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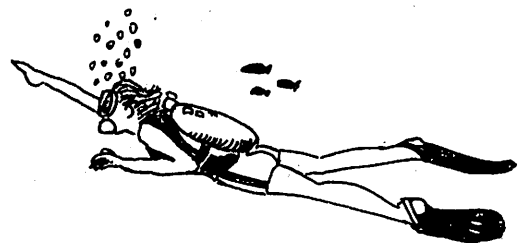
Such divers are not very common, and Neumann says that dives deeper than 60 feet are only conducted among the more experienced divers in the club, and not on the Saturday dives.

There are other dives sponsored by the Aquanauts as well, including neighbor island trips, boat and night dives. According to Neumann, the night dives are very popular because they allow people to dive in a large group led by experienced divers.

An Aquanauts' membership is \$5 per semester, and the club meets on the 2nd and 4th Tuesdays of every month at 5 p.m. in the Manoa Gardens courtyard.

They have a potluck lunch after every Saturday dive, and Neumann said this is where you meet your diving buddies.

The next orientation meeting for Hong's NAUI open water class will be listed in the MOP Calendar. According to Hong, an open water certification is a "license to learn," and the Saturday dives with the Aquanauts are good opportunities to do so.

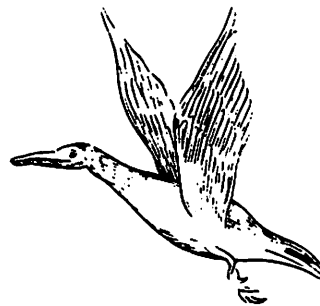


# UHM Class List

Here is a list of classes offered next semester (spring '87) that may be of interest to MOP students at UHM. We will list the other campuses in upcoming issues.

Botany 450, Natural History of the Hawaiian Islands  
European Languages 371, Europeans of the Pacific  
Ethnic Studies 221, Hawaiians - ES 320, Hawaii and the Pacific  
Geography 300, Intro to Climatology - 352, Geog. of Japan - 365, of the Pacific - 368, of Hawaii - 473, Marine Cartography  
Geology-Geophysics 101, Intro to - 102, Historical Geology - 200, of the Hawaiian Islands - 425, Geochemistry  
History 284, of the Hawaiian Islands - 482, Pacific Islands II - of the Hawaiian Kingdom 1819 - 1890  
Interdisciplinary Studies 261, Man, Ocean Environmental Crisis - 300 Field Study - 489 Environmental Practicum  
Meteorology 101, Intro to - 445, Tropical Meteorology  
Oceanography 201, Science of the Sea - 450 Aquaculture Production  
General Science 123, Hawaiian Environment  
Zoology 200, Marine Biology - 412 of Higher Invertebrates - 450 Natural History of the Hawaiian Islands - 466, Fisheries Science - 470, Limnology - 490 D, Behavior of Marine Animals - 490 E, Ecology - 691 H, Seminar: Marine Biology Health, Physical Ed and Recreation (HPER)  
103 Beginning Swimming - 104, Intermediate Swimming - 135, Volleyball (for the Sea Squirts) - 173 Waterpolo - 197 Scuba Diving: Beginning - 331, Water Safety Training  
Civil Engineering 330, Environmental Engineering - 432 Waste/Water Treatment Design  
Mechanical Engineering 322 Mechanics of Fluids  
Ocean Engineering 201, Ocean Tech-Man in the Sea

This is by no means a comprehensive list of all relevant classes for MOP students at UHM, it is just some of the more interesting ones being offered in the next semester.



## MOP Alumni/Graduation

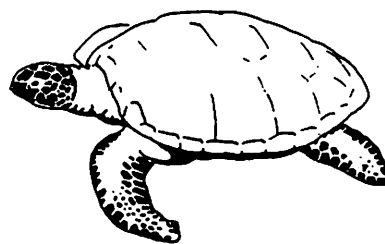
The excitement is mounting for the MOP alumni reunion. All MOP students and staff, from 1970 to the present, are invited to come to the Waikiki Aquarium on December 19 at 6:30 p.m. for the celebration.

The event will also be the graduation for about 12 MOPers.

We are looking for some volunteers to help out with music and man power. If you can help contact Annie at 948-8433.

More alumni keep calling and plan to attend so it will be a good chance to see old friends and catch up on what they've done since MOP.

\*\* A flier was sent to some people with the wrong date for the graduation/reunion, it is on December 19.




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## Symposium Deadline

All MOP students that are planning to present abstracts for the upcoming Symposium on Maui in March should know the due date is February 2.

If you need help writing your abstract talk to the MOP Coordinator on your campus.



# Job experience\_\_\_\_\_

from page 1

Choy said, "It's estimated that thousands of miles of the nets are laid out by fishermen every day; some of the individual nets are more than a mile long. Sometimes fishermen lose nets and it's thought that, altogether, several miles of nets are lost each day."

Choy said, "NMFS is concerned about the effects of these lost, drifting nets on wildlife. We did experiments to study what happens to a net after it is set to drift."

Choy's main job on the project was to assist in photographing and measuring the nets in the water to see if they folded up or stayed spread out as they drifted.

"Before we left Oahu, we had to develop a technique to use in the water," Choy said. "The original plan was to photograph from inside a shark cage, but the cage was too cumbersome.

"We found that it was more practical to free-dive and have a safety diver with a bang-stick for sharks. I felt more comfortable this way. I didn't see any sharks when I was diving anyway."

Another important piece of equipment was the radio transmitter system.

Choy explained, "The nets were to be fixed with dual-frequency radio transmitters so that we could locate them after they drift away. The transmitters were shipped to us and arrived a short time before our departure, but we found out that they didn't float in the correct position to transmit. I had to devise a floating collar and a weight for each one to make them float in a verticle position."

After all of the preparations were finished, Choy was flown to Midway Island aboard an Air Force C 141 jet out of Hickam Air Force Base. He said the jet was "cold, noisy--we had to wear earplugs, and there were no windows, but I didn't mind."

At Midway Island, he boarded the R/V Townsend Cromwell, which headed for the Hancock Seamount. On the way, the ship stopped at Lisianski Island and dropped off a group of scientists to study monk seals.

Other scientists who stayed on the ship were working on different projects from Choy's. The first day at the

seamount, a population survey of the armorhead fish was started. This was done by laying a bottom line (a line with many baited fishhooks) and calculating the fish population based on the number of fish caught.

The next day, Choy helped release nets varying in length from 50 meters to one kilometer. The next three days were spent photographing and measuring the nets.

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*"We found that it was more practical to free-dive."*

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To measure the nets, Choy used an optical ranging device which he said was "something like what hunters use to measure the distance from their targets." From one end of the net, Choy would aim the device at the other end and focus it to get a measurement of the distance.

"After about three days most of the nets shrank," said Choy. He said that by then they had drifted about 20 miles from the seamount.

The R/V Townsend Cromwell then left the nets (with their transmitter activated) and returned to the seamount for more fish population studies.

Choy learned that the armorhead, alfonsin, and other fish found in the area are valuable to the Japanese fishing industry. The seamount, where these fishes are abundant, is within the U.S. fishing territory (called the Exclusive Economic Zone--EEZ). But Japanese fishing companies have been allowed to fish there by special permit because the types of fish they take are unpopular (and therefore unmarketable) in the U. S.

After some time, however, the fish population declined to a point where the U.S. decided to put a "kapu" on the area to allow the fish populations to grow for five years. The NMFS team was there to check on the progress of the fishes' repopulation.

"So I learned about a fish-counting

# Job experience \_\_\_\_\_

technique," said Choy. "The scientists were also trying to find out why these types of pelagic (open ocean swimming) fish are so abundant in that area." he said.

Another type of fish research conducted later in the voyage involved an attempt at "strip spawning" ehu, a type

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*"I try to look for the  
positive side of whatever*

*I'm working on."*

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of bottom-fish prized in Hawaii. The idea was to obtain eggs from a female fish, inseminate them by a male fish, and bring the larvae back to be hatched and raised in an aquaculture facility.

After about ten days of working on these projects, the team was able to find the nets using a fix from a satellite and a homing beacon.

The dual-frequency transmitters on the nets sent one signal to the satellite and the other is picked up by a receiver on the ship once it's within six kilometers.

Choy said, "By this time, some of the larger nets had spread out again and the smaller ones had shrunk. There were some fish caught in the nets; a shark was in one. Also there was a nice mahimahi swimming around one net. This is a positive aspect of floating debris (that fish are attracted to floating objects) that interests me since I'm into fishing. I try to look for the positive side of whatever I'm working on."

Choy also learned about a theory of up-welling currents associated with the seamount area. That discussion got too technical for this reporter to grasp, but the point is that Choy learned a great deal on this trip that he wouldn't have learned otherwise.

He also had a great time. He said, "I really enjoyed it. I learned a lot, but it wasn't all hard work either, we had some time to relax. The food was

good and we even watched movies on video. I'd definately do it again."

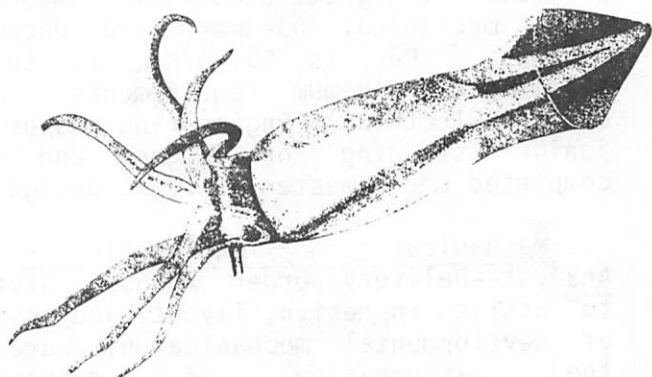
Choy is now working for NMFS again on a different project. He is involved with research on Hawaiian monk seals at the NMFS Marine Mammal Lab at Kewalo Basin, which is headed by William Gilmartin.

Choy said he enjoys any work related to oceanography. "To be an oceanographer, you need a wide range of knowledge," he said. "I've learned a lot at my marine science jobs, but experience from ordinary odd-jobs I've had has been helpful too."

His advice to anyone who wants a career in marine science is, "Get your foot in the door! There are plenty of opportunities. When my job ended last summer at NMFS, they wanted me to help find some other people to help; I couldn't even find anyone! The openings are there for those who want to work. If you can't find a paying job, volunteer, and when you work at sea, be very careful. Safety is a major problem with oceanography. They want someone who is a safe worker."

Choy pointed out the Manoa MOP bulletin board and Seawords as places to find jobs. He even saw one he's interested in on the bulletin board in the HIG building about a cruise to explore Loihi seamount.

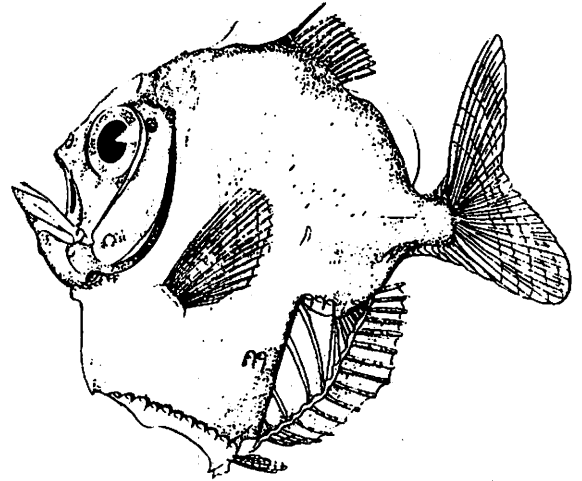
He said, "If you want a career in oceanography, the best way to get employed, I think, is to have experience. I'll bet it counts even more than grades for getting a job."



# Of Interest

## Monk Seal and Friend

Have you seen that postcard of a Hawaiian monk seal and a Hawaiian green turtle sleeping together on the beach? The seal has his flipper on the turtle's back and they look like close friends (cute). This photo is available as a postcard from the Hawaii Audubon Society. The cards cost \$6.00 for a packet of 50. Proceeds support the Hawaii Chapter. Send checks to: The Hawaii Audubon Society, c/o Marjorie F. Ziegler 45-636 Liula Place, Kaneohe, HI 96744



## NOSC Opportunities

The following jobs are offered at the Naval Ocean Systems Center, Kaneohe Lab, which is at the Kaneohe Marine Corps Air Station. Applicants must be full-time students with a minimum GPR of 2.0 and be U.S. citizens. To apply, UHM students must go to the Student Employment Office, and then to the UH MOP office. All others inquire at: UH Marine Option Program, 1000 Pope Rd., Room 229, Honolulu HI, 96822. Use the Delivery Order # to inquire about the specific positions.

### Electrical Engineering

Analyst--Delivery Order #0054. Student to assist in the design, breadboard, and testing of developmental electronic circuits for the Datalink of the TOV project. Integrate electronic components with mechanical hardware and document designs. Pay is \$5.60/hr, 16 to 20 hours/week. Minimum requirements: must be an Electrical Engineering major of junior standing or higher and have completed one semester of logic design.

### Mechanical Engineering

Analyst--Delivery Order #0058. Student to assist in design, layout, and testing of developmental mechanical hardware and the integration of mechanical

and electronic components to balance form and function of remotely-piloted vehicles for the TOV project. Pays \$5.60/hour, maximum of 20 hours/week. Minimum requirements: must be of junior standing or above in Mechanical Engineering with one semester of mechanical design.

### Electronic Engineering

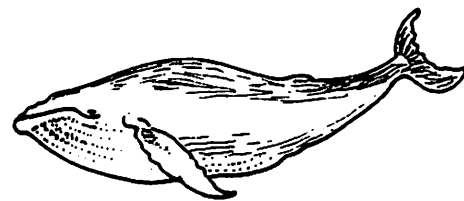
Analyst--Delivery Order #0069. Student to assist SEARAY project through the following tasks: development of prototype electronic hardware; design of both analog and digital circuits given basic circuit functions and requirements; fabrication, assembly and checkout of prototype circuit boards; test circuits for performance, stability and frequency response. Pays \$5.60/hour, 16 to 20 hours/week. Minimum requirements: undergraduate in Electronic Engineering with coursework in logic design (EE 120) and basic circuit analysis (EE 211).

### Electronic Engineering

Analyst--Delivery Order #0070. Student to assist project AGUN through the following tasks: Design of prototype electronic hardware and software; design fabrication, assembly and checkout of both analog and digital circuits given basic circuit functions and requirements; test circuits for performance, stability, and frequency response; integration of image processor hardware and software with a local area network. Pays \$5.60/hour, 16 to 20 hours/week. Minimum requirements: undergraduate in Electrical Engineering, coursework in logic design (EE 120) and a basic circuit analysis (EE 211).



# Of Interest \_\_\_\_\_



Electronic Engineering  
Analyst--Delivery Order #0071. Student to work with fiber optics in following tasks: Design, layout, and testing of fiber optic hardware; measuring critical specifications of optical fibers using computerized test equipment; inserting test data into a computerized data base and manipulate graphics programs to display test results. Pays \$5.60/hour, maximum 20 hours/week. Minimum requirements: sophomore or higher undergraduate in Electrical Engineering, one semester of circuit design or equivalent.

To order the book, send \$10.95, your mailing address and phone number to: The CEIP Fund, 332 The Arcade, Cleveland, Ohio 44114, tel. (216) 861-4424

## Student Preferred

The Job Location and Development (JLD) Program has the following position listed: JLD Job #1016-s-1. A marine science student is preferred for a job that involves reviewing research articles to be filed in a computer program for a company in downtown Honolulu. The employer is willing to work around student's schedule from 8:30-5:30 M-F. Classified UHM students may inquire at the JLD Program office, Student Services Center.

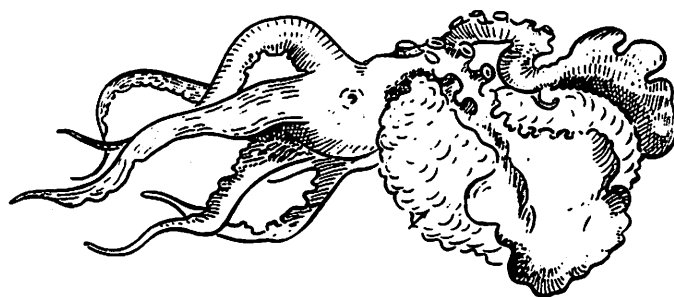
## Environmental Internships

The Center for Environmental Intern Programs (CEIP) Fund will be offering over 300 paid, short-term jobs with corporations, government agencies and nonprofit organizations.

The positions cover a wide range of environmental and conservation-related areas and draw upon a variety of academic disciplines. The jobs are offered throughout the year and are typically 12 or 24 weeks in length with salaries ranging from \$250-350.00 per week.

The deadline for applications is Feb. 3, 1987. Applications are available at the UHM MOP office or by writing: The CEIP Fund, Inc., 68 Harrison Avenue, Boston, MA 02111.

Also, available in December will be The CEIP Fund publication "Becoming an Environmental Professional--Strategies for Career Planning". The book is co-sponsored by the University of Michigan School of Natural Resources and is based on information presented at a conference on environmental careers, which was held at the U of M.



## Sea Life Park Tours

Sea Life Park is now offering a special Behind-the Scenes tour featuring its six-month old false killer whale (the only one born in captivity) and the "Whophin" (now 1-1/2 years old). This tour is limited to 16 participants and consists of a personalized 40-minute excursion behind-the-scenes. It is offered five times daily for a modest fee in addition to the park's regular admission. For more information call 259-7933.

# Of Interest \_\_\_\_\_



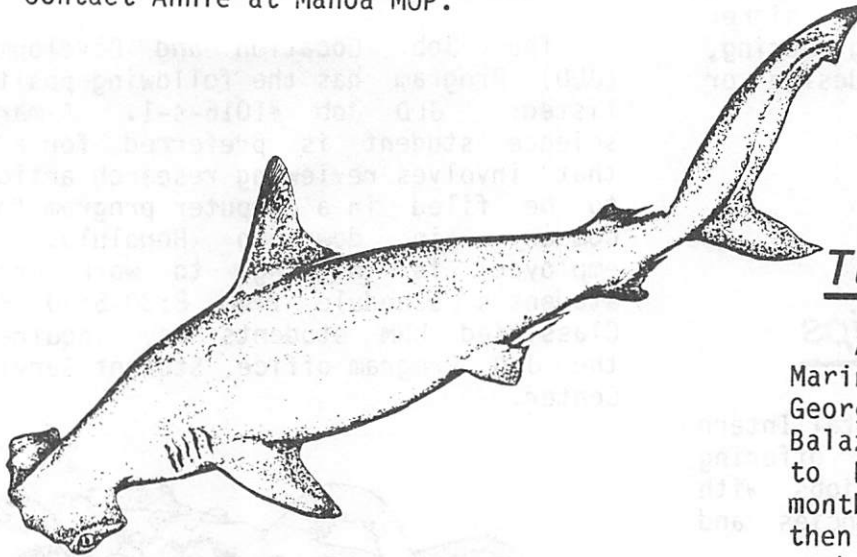
## Skill Project Pays

Skill Project--

Dr. George Boehlert of NMFS (Dole St. Lab) needs help with his Plankton Distribution Study. Learn to identify, sort and curate samples; analyze data; write technical reports; and possibly work at sea. A stipend of \$220/month is available from Nov. 1, 1986 to June 30, 1987; possibly longer pending funding. Contact Annie at Manoa MOP.

## Apologies

Our sincere apologies to George Balazs for spelling his name incorrectly so many times in the last Seawords.



## Turtle Research Assistant

A student is needed by the National Marine Fisheries Service (NMFS) to help George Balazs dissect sea turtles. Balazs needs someone who isn't squeamish to help him on Friday afternoons once a month (the turtles are frozen until then). The position is unpaid, but hours worked are documented as a federal job. Call George Balazs at 943-1221 (NMFS)

## State Aquaculture Position

An Aquaculture Specialist is sought by the State Department of Land and Natural Resources for a permanent position--salary is negotiable.

Candidate must be interested in working with and between government and the private sector. Highly motivated, articulate individual with strong background in environmental planning, environmental engineering, marine biology, ecology or agricultural science.

Send resume or inquiry to John Corbin, Manager, Aquaculture Development Program, 335 Merchant Street, Room 359, Honolulu, HI 96813 tel. (808) 548-5495

## Aquarium Expert

The Waikiki Aquarium needs an Aquarium Scientist to design new aquariums, maintain existing ones, organize and supervise collecting expeditions, conduct research and publish results.

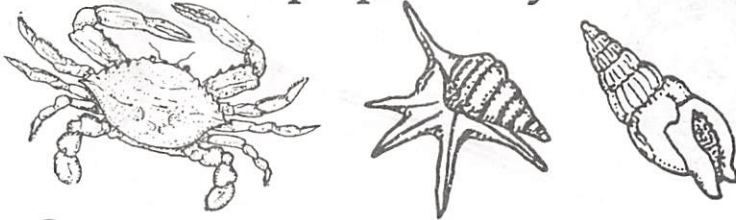
Required is a bachelor's degree with coursework in ichthyology, invertebrate zoology, and ecology. Applicant also needs SCUBA and aquarium-related experience. Minimum salary is \$1,116.00/month. To apply contact Reid Withrow at Waikiki Aquarium, tel. 923-9741. Closing date is Nov. 21, 1986.



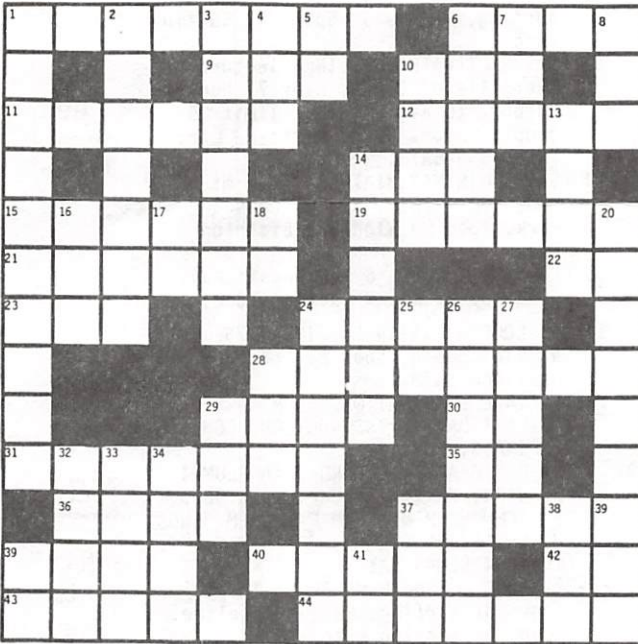
# THE BEACHCOMBER

A potpourri from the sea

By Lani Teshima



## Seawords Crossword



**ACROSS**

- 1 French diver
- 6 Sandwich filler
- 9 Maria
- 10 No-no
- 11 Lava
- 12 Chicken dish
- 14 Spanish aunt
- 15 Moderately
- 19 Turned on, but going nowhere
- 21 Bivalve mollusk
- 22 For
- 23 Soak flax
- 24 Unau
- 28 Maynard
- 29 Gifts to fathers
- 30 To go (Span.)
- 31 Big Island Hi-tech product
- 35 Steamship (abbr.)
- 36 Wind instrument
- 37 Marine mammal
- 39 Change for five
- 40 Park feature
- 42 Rocky greeting
- 43 Shows affection
- 44 Desired

**DOWN**

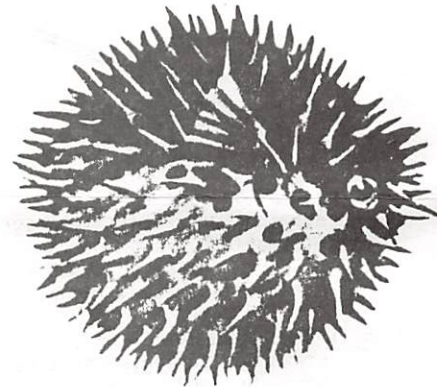
- 1 Coastal state
- 2 Straighten
- 3 One who gossips
- 4 Adam's mate
- 5 A digraph
- 6 Before pool or current
- 7 Card game
- 8 Fret
- 10 Verbalized
- 13 Not straight
- 14 Names
- 16 Affirmative
- 17 Right (abbr.)
- 18 Period of time (abbr.)
- 20 Manoa graduation need
- 24 Vertically
- 25 Either
- 26 Natural menace
- 27 Portion of earth's crust
- 28 Taboo
- 29 Digit
- 32 U2 man
- 33 Assist
- 34 Misplace
- 37 Harem room
- 38 Sight organ
- 39 Overdose (abbr.)



Answers to last issue's puzzle.

Answers to this issue's puzzle will appear in the next issue.

## Fish Facts




Diodon hystrix

Common name: Spotted spiny puffer

Hawaiian name: 'O'opu kawa

Size: Up to 24 inches.

Diet: Crustaceans, mollusks, echinoderm and polyps.

When threatened, this fish puffs itself up to three times its original size. They are often dried in this blown-up condition and hung as ornaments or lanterns. Considered a delicacy in Japan, "fugu" is prepared by certified fugu cooks, who are trained to take out the organs and flesh that contain tetrodotoxin, a poison which is considered 60% fatal. 

## Trivia Corner

QUESTIONS

- 1 Who wrote 20,000 Leagues Under the Sea, and when was it written?
- 2 What does the acronym SCUBA stand for, and who invented it when?
- 3 If you blew up a balloon underwater at a depth of 99 feet, then brought the balloon to the surface, how much more will the balloon have expanded?
- 4 Where did Sherwood go to for his present trip, and when is his expected return date?

- December 6.
- 1 Jules Verne, 1876.
  - 2 Self Contained Underwater Breathing Apparatus. Invented by Jacques-Yves Cousteau in 1943.
  - 3 Four times.
  - 4 Paris and Pakistan. He plans to return on

ANSWERS

# The MOP Calendar



November

- 26 (W)-LAST DAY FOR MIDTERM EXAMS, UHM  
 27 (TH)-HOLIDAY, THANKSGIVING DAY  
 28 (F)-NONINSTRUCTIONAL DAY,  
 29,30-MOREY HAW'N PRO QUALIFYING  
 BODYBOARDING CONTEST, Makapu'u  
 Beach, Spon. by Hon. Bodysurfing  
 Club.  
 30 (S)-TEAM HAWAII PRO-AM TRIATHLON:  
 800 M. Swim, 14 mi Bike, 4 mi Run,  
 Kailua Bay, Spon. by Team Hawaii

- 10 (W)-LAST DAY OF INSTRUCTION, UHM  
 11,12-STUDY DAYS, UHM  
 12-19-TRIM WORLD CUP; Triple crown of  
 surfing, Haleiwa. Spon. by Surfing  
 Entp.

- 13 (SA)-SALT WATER SAILING; lecture at  
 the Falls of Clyde, Pier 7, Hon.  
 Harbor. 10 a.m. - noon, limit 25  
 people. Spon. by HI Maritime Ctr.  
 Info: 536-6373.

- 13 (SA)-CHRISTMAS BIATHLON: 2.7 mi  
 run, 800 M swim, Ala Moana Beach  
 Park, Spon by Windward Biathlon  
 Assoc.

- 13 (SA)-KAYAK RACE: 6 mi, Hawaii Kai.  
 Spon. by HI Kayak Racing Assoc.

- 14 (S)-LOOONG DISTANCE SWIM: 4.75 mi,  
 Waikiki Beach. Spon by Looong  
 Distance Swim Comm.

- 15-19-FINAL EXAMINATIONS, UHM

- 16 (T)-LAST DAY OF INSTRUCTION, COM.COL.

- 17-22-FINALS, COM.COL.

- 19 (F)-MOP GRADUATION AND 15th ALUMNI  
 REUNION, Waikiki Aquarium, 6:30 p.m.

- 21 (S)-COMMENCEMENT; UHM FALL SEM. ENDS

- 24 (W)-CHRISTMAS EVE

- 25 (TH)-CHRISTMAS DAY

- 20-30-MARUI OFFSHORE MASTERS: Triple  
 crown of surfing, Banzai Pipeline.  
 Spon. by Surfing Entp.

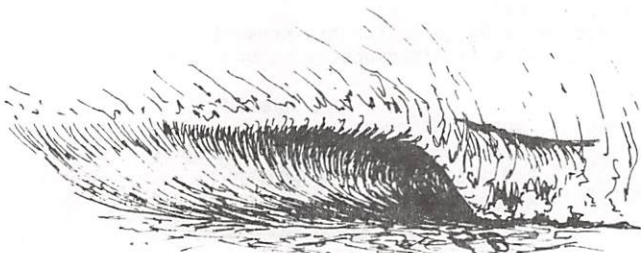
 Denotes MOP/BML activity.

December

- 1 (M)-LAST DAY TO SUBMIT CREDIT BY  
 examination results to Records  
 Office, UHM  
 1-7-HI NORTH SHORE PRO CLASS TRIALS,  
 site to be announ., Spon. by  
 Surfing Entp.  
 5-11-BILLABONG HAWAII PRO, triple  
 crown of surfing, Sunset Beach.  
 Spon. by Surfing Entp.  
 6 (SA)-SEA CREATURES AND CRAFTS --  
 Whales and Dolphins; Sea Life Park,  
 1:30 - 4:00 p.m., Ages 6 - adult.  
 Spon. by Sea Life Park Ed. Dept.  
 Info: 259-7933.  
 6,7-NSSA OPEN SEASON #4; Surfing at  
 Makaha  
 7,14,21-KAILUA SANTA'S SLALOM;  
 Windsurfing, spon. by Haw'n Amateur  
 Windsurfing Assoc Int'l Inc. Info:  
 Steve Crocker, 235-4893.

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