THE CREST OF THE WAVE: ADVENTURES IN OCEANOGRAPHY

By Willard Bascom 1988, 318 pp., \$19.95, hardbound, Harper and Row, New York

If your buckles need swashing, look no further.

THE second World War ushered in a new era of oceanography, championed by entrepreneurs, driven by national needs, and fueled by federal dollars. The new protagonist was invariably male, ruggedly handsome, and chafing to go forth and tame the sea. Explorers and adventurers were our unsurpassed heros, and oceanographers worth their salt had the right stuff, although at the time nobody knew what to call it.

Willard Bascom is a post-war oceanographer. His new book chronicles adventures that begin underground in Colorado mines, where he drills and blasts through the hard rock of youth, shrugging off dangers and wishing for more. One night, fate intervenes, in the person of John Isaacs, who offers cosmoline cocktails in lieu of black powder boilermakers. Bascom succumbs to siren songs of the sea, and soon he is surveying Pacific beaches, crashing and bashing through twenty-foot combers in a surplus amphibious Army "dukw." Manly endeavors, these; the timid and the cautious need not apply.

Bascom rapidly pushes seaward, fore-casting seismic waves, salvaging stranded ships, and helping the Navy with amphibious landings. Tales of exotic islands and languid archipelagoes emerge against a backdrop of Scripps Institution's Capricorn Pacific expedition, during which Bascom serves as chief entrepreneur and head grenadier, with Isaacs hovering nearby as revered scientific guru. The book paints a threadbare but probably accurate picture of ironman oceanography, with rough-and-

David A. Brooks, Department of Oceanography, Texas A&M University, College Station, 77843.

Editor's Note: In addition to reviews of scientific books, we will occasionally publish thumbnail sketches of works that may have wider appeal. This category could include, for example, brief reviews of novels, biographies, and historical anecdotes - the only requirements are relevance to the ocean and interest to the reader. We solicit well-prepared reviews in either the scientific or the thumbnail vein; the latter will carry the banner "Short Takes."

tough camaraderie the order of the day and women mostly relegated to pastimes of the port. If you identify with Chuck Yeager and envy Red Adair, if John Wayne is your role model, you'll feel right at home with Bascom's to-hell-with-the-sharks approach to oceanography. He is Rambo of the deep, the high priest of nautical big-think.

The author's work with seismic waves led him to a first-hand involvement in the Pacific nuclear tests of the 1950s, and through his eyes the explosions that decimated Bikini and other atolls are freshly awesome and horrific. We hear of the naiveté of the personnel who watched the tests, and we are reminded of innocent fishermen who died from radiation poisoning. From close range, Bascom vividly describes searing fireballs unleashed on a world unprepared to deal with them. Tough-guy scenes before an atomic blast starkly contrast with a poignant image of "a pair of fairy terns, blinded by the explosion, stumbling about in a clearing." Reminded of the madness, readers can only hope to escape the terns' fate.

The final third of the book continues with greater velocity but lesser impact. After the bomb tests, Bascom successively applies his special talents to deep-ocean drilling, diamond mining off Africa, treasure-hunting in the Bahamas, and windpowered research vessels. Each of these is a tale in itself, each farther from mainline oceanography, and each an example of the author's swashbuckling style. In a few cases—for example, during the search for Spanish gold—plans go awry, and the acid residue can be tasted in the text. On the other hand, the early drilling program and its quest for the "Moho" lead directly to the presently successful ocean drilling program. And one cannot fail to be impressed by the author's creative response to the last energy crisis: a grand research schooner, fourmasted, computer controlled, and named, with characteristic modesty, the R/V Willard Bascom.

Bascom's latest book reflects a time when raw energy, inventive talent, and personal charisma carried the day. The book is a sequence of adventures drawn from the author's experiences, written in the style of an embellished diary; it is not a sea story or a novel, with developed characters and connective tissue. *The Crest of the Wave* offers an insightful and entertaining view of oceanography when it was rapidly developing in the United States. Some readers may be put off by the author's abundant hubris, but many will appreciate his unbounded enthusiasm for new ideas.

ENRICHING THE GRADUATE EXPERIENCE

By Michael McClain & Charles Harden

URADUATE school is a training ground for prospective scientists, a gateway between the classroom and the scientific community. It is during this tutelage that students develop their most prominent skills: the ability to ask the right question; answer that question through scientific investigation, and communicate their results to colleagues and the public. The mastery of these skills is essential in the development of a creditable scientist, and the extent to which these skills may be developed in an institution is a measure of the quality of that institution. Training in these skills, however, need not be the responsibility of the institution alone, but may come from the students themselves. Such is the case at the Rosenstiel School of Marine and Atmospheric Science (RSMAS) where, as in other institutions, students are augmenting their own education.

The Rosenstiel School is a relatively autonomous branch of the University of Miami, consisting of approximately 160 graduate students and 70 faculty members. Ongoing research at the RSMAS is in the sub-disciplines of marine biology and living resources, marine geology and geophysics, marine and atmospheric chemistry, meteorology and physical oceanography, applied marine physics, and marine affairs.

The training of students in the marine sciences is naturally a prime objective at the RSMAS, one which has been met with

Michael McClain, Division of Marine Geology and Geophysics: Charles Harden, Division of Biology and Living Resources: Rosenstiel School of Marine and Atmospheric Science, 4600 Rickenbacker Causeway, Miami. FL 33149

Editor's Note: We continue to solicit brief articles describing programs, activities, interests and concerns of graduate or undergraduate oceanography students, who are also reminded of the Telemail bulletin board GRAD.STUDENTS that has been graciously provided for their benefit by Omnet, Inc.

great success during the forty-five years since the school's founding. The resources available to students in the form of facilities, curriculum and faculty are extensive. The RSMAS library is accessible to students 24 hours a day, 365 days a year. Each student receives nearly unlimited time on the school's computing system, which includes links to a variety of academic and research networks. And, of course, individual divisions provide facilities equipped to satisfy research needs within their respective sub-disciplines. The small student-tofaculty ratio (~2) enables students to work closely with their advisors and to play an active role in research. These factors and more come together at the RSMAS to create an exceptional educational environment.

Despite the excellent provisions of the RSMAS, students have gone a step further and established two organizations to address student needs and concerns. These are the Marine Science Graduate Student Organization (MSGSO) and the Organization of Tropical Marine Science Students (OTMSS). Soon after the founding of the RSMAS, the MSGSO was established to insure student representation within the University. It has remained an active voice throughout the school's history. A representative of the MSGSO occupies a voting position on the school's Academic Committee and participates in the formulation of policy regarding students. The MSGSO also provides a number of services such as short-term, no-interest loans and new student orientation intended to help with the problems of "student life." As a means of promoting student-faculty exchange as well as student-student interaction, the MSGSO operates a commons complete with music and a full bar. Finally, the MSGSO has created a travel fund program to provide financial assistance to students presenting the results of their research at scientific meetings.

Monies allotted to this fund annually are matched by the Office of the Dean. Excluding the Dean's matching funds, the MSGSO receives no monetary support from the University, and all of its annual budget is met through fund-raising activities. Chief among these is the Annual MSGSO Student Auction, an event in which businesses and individuals donate their services and merchandise. The donations are auctioned with earnings going to the MSGSO. Last year the event raised nearly \$8,000.

The Organization of Tropical Marine Science Students was established in 1986 to promote activities which contribute directly to the education and training of marine science students.

The OTMSS sponsors a number of field trips to various environments in South Florida and the Caribbean, stressing the importance of an interdisciplinary approach in the marine sciences. Through these organized trips, students gain direct exposure to, and an increased appreciation of, the sub-disciplines of their fellow students. Field trip leaders are faculty members or students with specialties in the areas to be visited. Beginning this fall, the OTMSS will sponsor a series of workshops directed at improving students' presentation skills.

THE SOUTH ATLANTIC

[CONTINUED FROM PAGE 17]

Revealed by Inverted Echo sounders. *J. Geophys. Res.*, 92, (C2), 1914-1922.

Gordon, A. L., 1986: Inter-Ocean Exchange of Thermocline Water. J. Geophys. Res., 91(C4): 5037-5046.

Gordon, A. L., J. R. E. Lutjeharms and M. L. Gründlingh 1987: Stratification and Circulation at the Agulhas Retroflection. *Deep-Sea Res* 34(4), 565-599.

Olson, D. B. and R. H. Evans, 1986: Rings of the Agulhas Current. *Deep Sea Res*, 33, 27-42.

Ou, H.W. and W. de Ruijter, 1986: Separation of an

SATELLITE ALTIMETRY CONTINUED FROM PAGE 11]

References

- Bernstein, R.L., G.H. Born and R.H. Whritner, 1982: Seasat altimeter determination of ocean current variability. *J. Geophys. Res.*, 87, 3261-3268.
- Born, G.H., M.A. Richards and G.W. Rosborough. 1982: An empirical determination of the effects of sea-state bias on the SEASAT altimeter. *J. Geophys. Res.*, 87, 3221-3226.
- Chelton, D.B., 1988: WOCE/NASA Altimeter Algorithm Workshop, U.S. WOCE Tech. Rep. No. 2. U.S. Planning Office for WOCE, College Station, TX., 70 pp.
- Cheney, R.E., J.G. Marsh and B.D. Beckley, 1983: Global mesoscale variability from collinear tracks of Seasat altimeter data. *J. Geophys Res*, 88, 4343-4354.
- Cheney, R.E., and L. Miller, 1988: Mapping the 1986-1987 El Niño with Geosat altimeter data. Eos Trans. Amer. Geophys. Union. 69, 754-755.
- Douglas, B.C., R.E. Cheney and R.W. Agreen, 1983: Eddy energy of the Northwest Atlantic and Gulf of Mexico determined from Geos-3 altimetry. *J Geophys. Res.*, 88, 9595-9603.
- Douglas, B.C., D.C. McAdoo and R.E. Cheney, 1987: Oceanographic and geophysical applications of satellite altimetry. Rev. Geophys., 25, 875-880.
- Fu. L.-L., 1983: Recent progress in the application of satellite altimetry to observing the mesoscale variability and general circulation of the oceans. *Rev. Geophys. Space Phys.*, 21, 1657-1666.
- Fu, L.-L., J. Vasquez and M.E. Parke, 1987: Seasonal variability of the Gulf Stream from satellite al-

The importance of effective communication is fully recognized among students at the RSMAS, and the planned workshops will combine expert instruction with practical experience. Individual workshops will cover written and verbal skills, and will be lead by selected faculty members noted for their presentation skills.

The above are just a few of the ways that graduate students at the University of Miami's Rosenstiel School of Marine and Atmospheric Science are enriching the educational experience for themselves and their fellow students. We encourage other students to share their successes.

- inertial boundary current from an irregular coastline, *J. Phys. Oceanogr.*, *16*, 280-289.
- Rintoul, S., 1988; Mass, heat and nutrient fluxes in the Atlantic Ocean determined by inverse methods. Ph.D. thesis, Massachusetts Institute of Technology/Woods Hole Oceanographic Institute Joint Program, 287 pp.
- Roden, G., 1986: Thermohaline fronts and baroclinic flow in the Argentine Basin during the austral spring of 1984. *J. Geophys. Res.*, 91, 5075-5093.
- Whitworth, T. and W. Nowlin, 1987: Water masses and currents of the Southern Ocean at the Greenwich meridian. *J. Geophys Res.*, 92, 6462-6476
 - timetry. J. Geophys. Res., 92, 749-754.
- Fu, L.-L., and D.B. Chelton, 1985: Observing largescale temporal variability of ocean currents by satellite altimetry: with application to the Antarctic Circumpolar Current. J. Geophys. Res., 90, 4721-4739.
- Marsh, J.G., (and 19 other authors), 1988: A new gravitational model for the earth from satellite tracking data: GEM-T1. J. Geophys Res., 93, 6169-6215.
- Mazzega, P., 1985: M2 model of the global ocean tide derived from SEASAT altimetry. Mar. Geod., 9, 335-363.
- Parke, M.E., R.H. Stewart, D.L. Farless and D.E. Cartwright, 1987: On the choice of orbits for an altimetric satellite to study ocean circulation and tides. *J. Geophys. Res.*, 92, 11,693-11,707.
- Tai, C.-K., and C. Wunsch, 1984: An estimate of global absolute dynamic topography. J. Phys Oceanogr., 14, 457-463.
- Tapley, B.D., G.H. Born, and M.E. Parke, 1982a: The SEASAT altimeter data and its accuracy assessment. J. Geophys. Res., 87, 3179-3188.
- Tapley, B.D., J.B. Lundberg and G.H. Born, 1982b: The SEASAT altimeter wet tropospheric range correction. J. Geophys. Res., 87, 3213-3220.
- Topex Science Working Group, 1981: Satellite altimetric measurements of the ocean. Doc. 400-111, Jet Propul. Lab., Pasadena, Calif.
- Woodworth, P.L., and D.E. Cartwright. 1986: Extraction of the M2 ocean tide from SEASAT altimeter data. *Geophys J Roy. Astro. Soc.*, 84, 227-255.
- Yunck, T.P., S.C. Wu and S.M. Lichten, 1985: A GPS measurement system for precise satellite tracking and geodesy. *J. Astronaut. Soc.*, 33, 367-380.