Plumbing the depths

Peter J. Smith

Water Baby: The Story of *Alvin*. By Victoria A. Kaharl. *Oxford University Press: 1991. Pp.356. £15, $21.95.*
Fire Under the Sea: The Discovery of the Most Extraordinary Environment on Earth — Volcanic Hot Springs on the Ocean Floor. By Joseph Cone. *William Morrow: 1991. Pp.287. $25.*

WHEN the custodians of marine nomenclature came snooping round, they were told that the vessel's name was a corruption of that of its conceptual father. In fact, it was named after a cartoon chipmunk popular in the 1950s. But there the joke ended. The deep-diving submarine *Alvin* has proved to be one of the great technological and scientific achievements of the post-war era, even though it is a wonder that it ever got built at all.

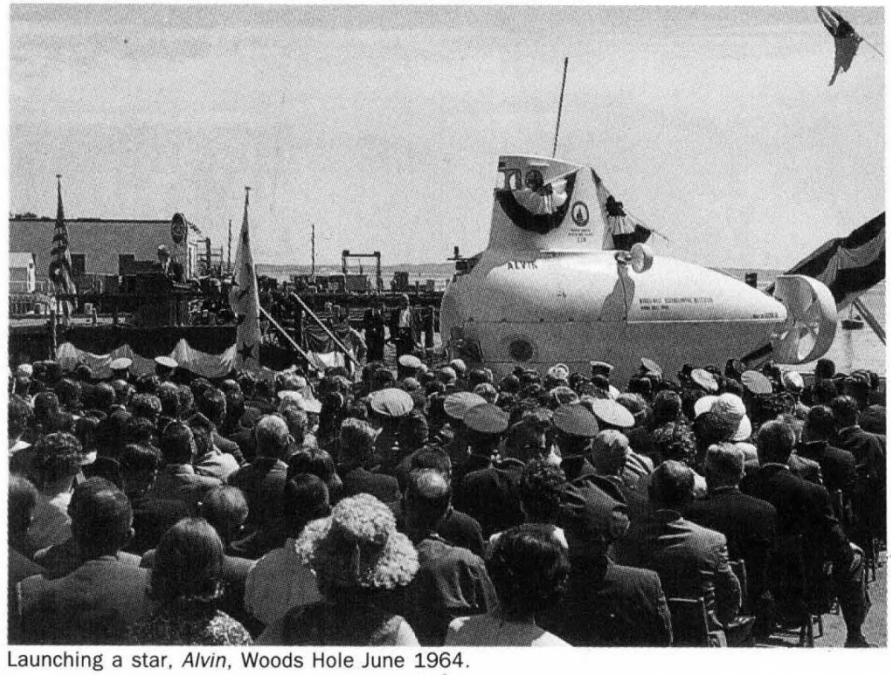
When, at a meeting of oceanographers in 1956, Allyn Vine proposed direct exploration of the deep-ocean floor (average depth about 3,900 metres), many of those present did not take him seriously. Most oceanographers (especially those at the Scripps Institution of Oceanography) could not see the point and many never did, the US Navy had no interest in anything below 750 metres, the Bureau of Ships (builder of all US Navy vessels) did not fancy having its authority usurped, and in any case it was by no means clear that the technology was up to it. But a small group of enthusiasts based at the Woods Hole Oceanographic Institution pressed on with faith, technical inventiveness, creative accountancy, some much rarer creative bureaucracy and a little chicanery. There were elements of Ealing comedy about it, not least because the vessel was designed and built by General Mills, the makers of 'Wheaties' and 'Cheeri-oats' — but it worked. *Alvin* was commissioned on 5 June 1964.

The rest is history, but not entirely scientific history. *Alvin* revealed the nonphotosynthetic animal communities around deep hydrothermal vents in the Pacific Ocean and elsewhere, examined the vents' white and black 'smokers' and their associated mineral deposits, collected geological specimens, carried out geophysical observations, photographed phenomena on the ocean floor that had never before been seen, obtained deep-water samples, and discovered modern lithoherms. But it also located the H-bomb that fell into the sea off Spain in 1966, monitored underwater military 'listening posts', examined the state of sea-bottom nuclear dumps, and detected and explored the *Titanic*. The US Navy soon changed its mind.

Victoria A. Kaharl has produced a gripping account not only of *Alvin*'s birth, life and work, but also of the underside: the perpetual hustling for funds, the arguments between can-do and here-are-ten-reasons-why-you-can't-do-it bureaucrats, the sheer human nastiness that arises when scientific egos compete for priority, the continual need to keep undercapitalized technology going with sealing-wax, and the sexual harassment of female oceanographers at sea. The best compliment I can pay Kaharl is to report that one night while reading the book I forgot time and coffee, and suddenly found it was 5.00 a.m. The Woods Hole Oceanographic Institution should also be applauded for appointing a science-writer-in-residence in the first place.

A curious sense of dislocation comes from reading Cone after Kaharl, for he covers part of the same *Alvin* story (that of the investigation of hydrothermal vents) but largely from the point of view of different scientists and different ocean ridges. It is a bit like going to the theatre to see familiar faces and finding understudies in charge, although the effect would no doubt have been the same had the books been read in reverse order. Nor, despite the restricted scope, does one learn much more from Cone about hydrothermal vents, because — and this is a positive point — he provides a much more comprehensive scientific background to the study of vents: how they fit into the global-tectonic scheme of things, and so on. Kaharl, by contrast, is strong on *Alvin*'s technology and operations.

So take your pick: *Alvin* as chief character or the vent story in its wider scientific context. Both approaches have their merits. Both books, it must also be said, take the modern US purplish approach, seeking to impart a sense of authenticity by the use of much extraneous detail and what purports to be direct speech from anything up to 25 years ago. Such literary devices are a matter of taste; and who can complain if they 'bring science alive' to hordes of nonscientists? Nevertheless, puritans will be uncomfortable with direct speech in historical contexts. How do they *know* what words were used? They do not, of course. I was hoping to catch out Kaharl and Cone by finding them quoting the same supposedly direct speech formulated in different words, but if they did it I missed it. □



Launching a star, *Alvin*, Woods Hole June 1964.

Peter J. Smith is in the Department of Earth Sciences, The Open University, Milton Keynes MK7 6AA, UK.

New-year editions

■ Published today by The Johns Hopkins University Press is the revised edition of Jurg Ott's highly acclaimed *Analysis of Human Genetic Linkage*. Price $47.50, £30.

■ The second edition of *The Structure of Nematodes* by Alan F. Bird and Jean Bird, first published 20 years ago, is issued from Academic Press. The book reviews the structures of all types of nematodes, both free living and parasitic, and now includes a chapter on nematode pathology. Accompanied by 100 photographs, price $65.

■ Oxford University Press have published the second edition of Wolfgang Rindler's superb *Introduction to Special Relativity*. The book is more conceptually and mathematically than experimentally oriented. Price £30, $59 (hbk); £15, $29.95 (pbk).