SCIENCE

31 January 1969
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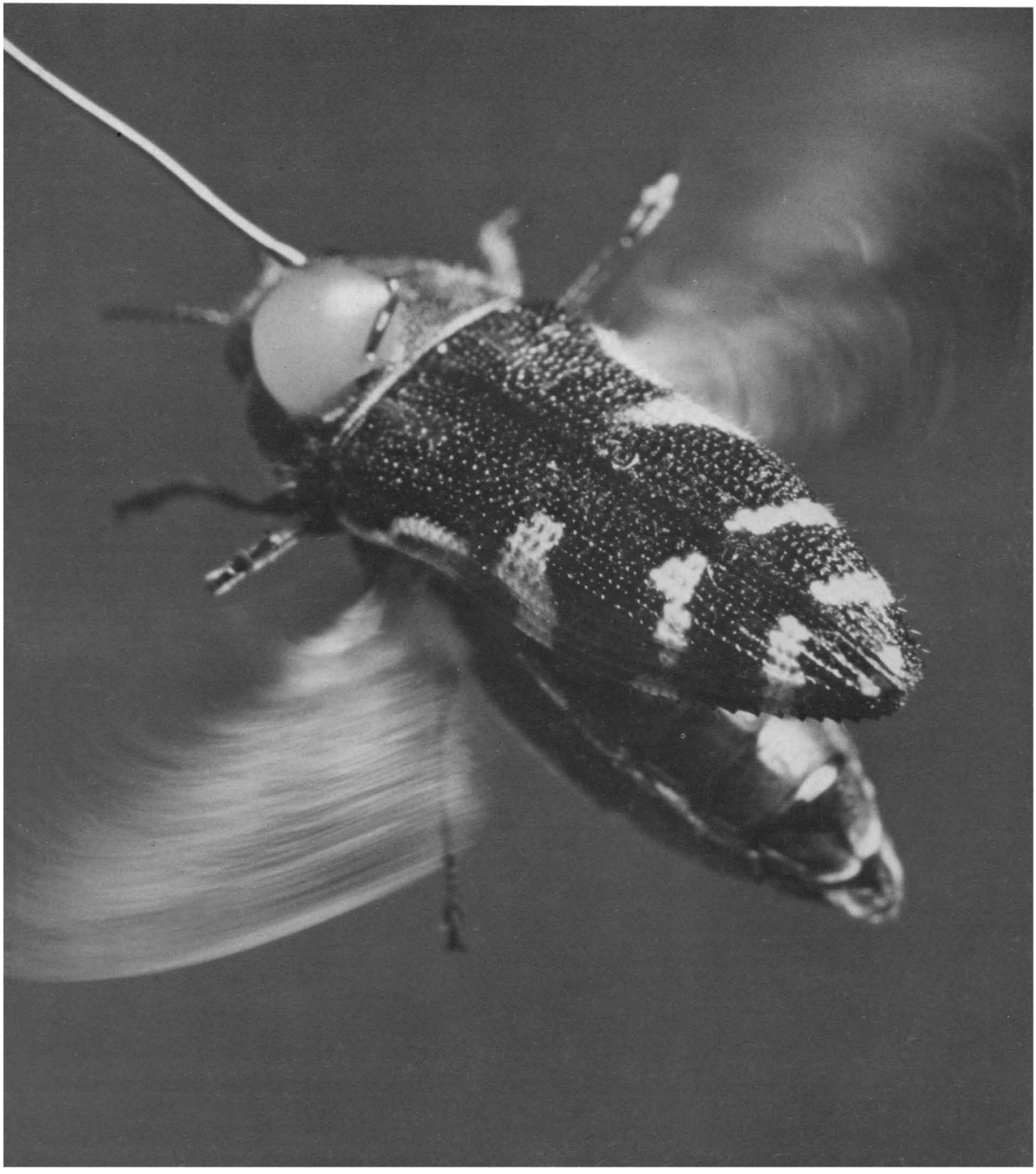

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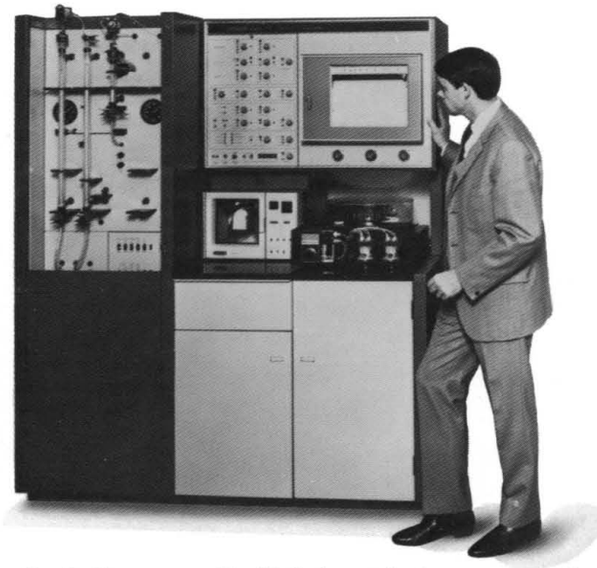

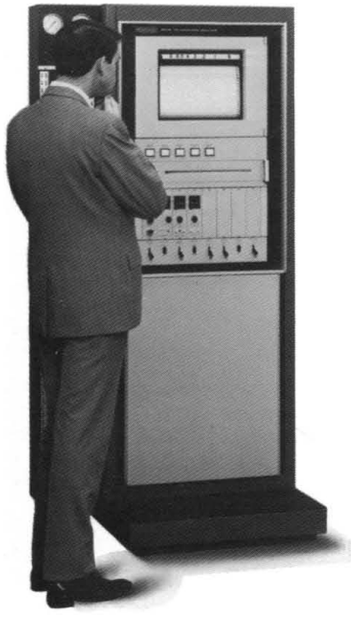

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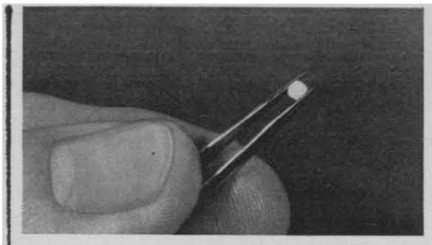

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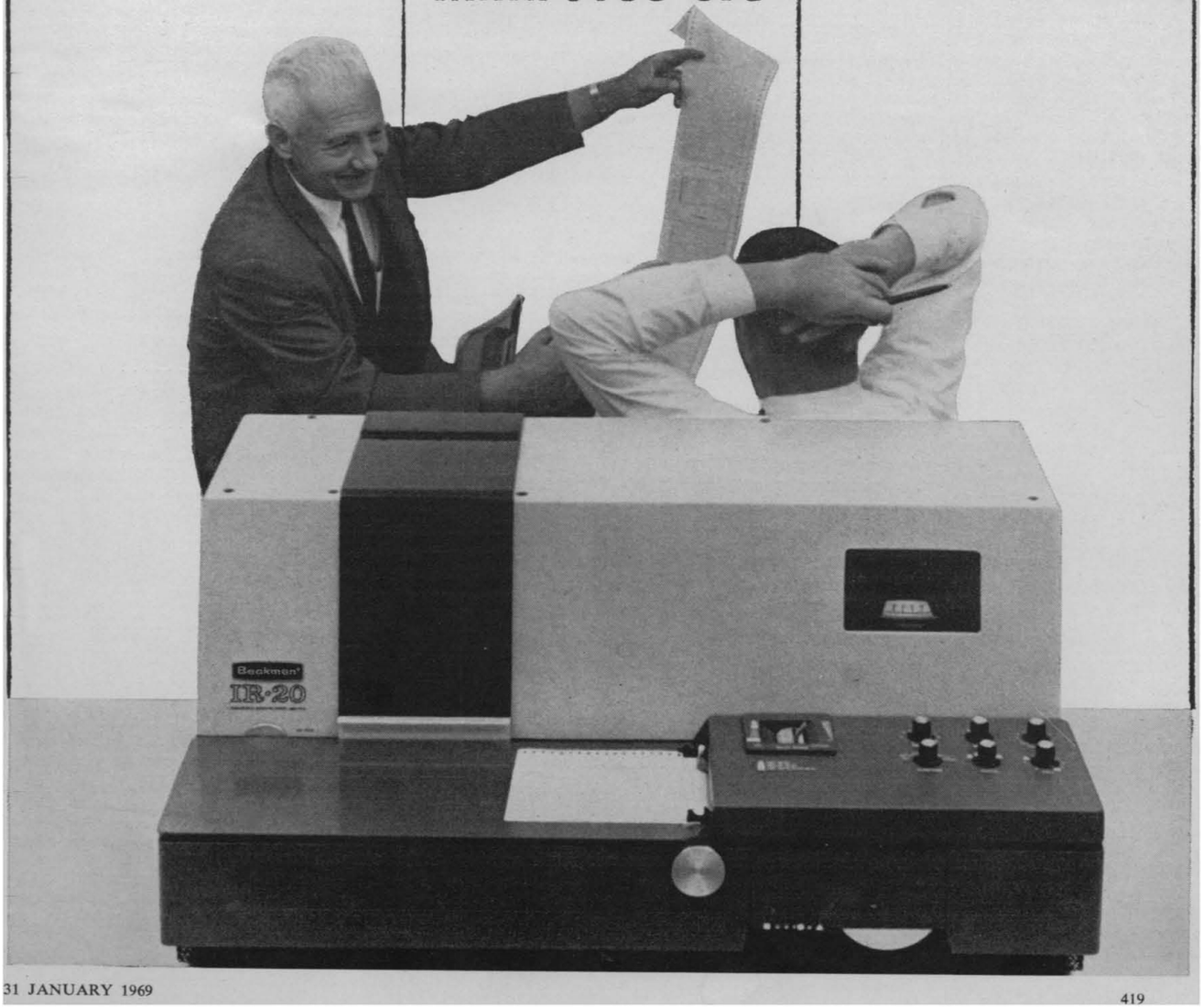

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COVER

Beetles of the genus *Acmaeodera* mimic bees and wasps in flight by flying with their membranous hindwings only and by having their forewings adorned with the color markings of Hymenoptera. Specimen shown is tethered to a wire (about × 14). See page 486. [R. Silberglied and T. Eisner, Cornell University]

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their objections to the planned visit of the *Silas Bent*. Thereupon, just 3 days before the meeting was to begin, the society hastily canceled its invitation to the *Silas Bent* in order to prevent a threatened student riot.

Subsequently at the meeting many oceanographers informally expressed their disappointment at being deprived of an opportunity to explore the *Silas Bent*—a modern research vessel currently operating in Asian waters and one which has made very extensive and interesting oceanographic studies. "Student power" had effectively destroyed an important aspect of the meeting for 800 members of the society and also, because of the last minute nature of the protest, had prevented the members from even conducting a referendum of their own wishes in the situation.

The implications of this incident are ominous. Until now, oceanography has enjoyed a most cosmopolitan atmosphere. Many countries invite foreign oceanographers to participate in their oceanographic expeditions. International cooperation has been our theme. We cannot afford to quibble about political differences as we study oceans which are truly international and under the jurisdiction of no one country. I hope oceanographers everywhere will join to preserve the peaceful immunity from national controversy which it has had heretofore.

P. KILHO PARK

Department of Oceanography, Oregon State University, Corvallis 97331

Albert Tyler

Albert Tyler, embryologist and professor of biology at the California Institute of Technology, died 9 November 1968 in San Marino at 62. Tyler was the first student to receive a Ph.D. in biology at the Institute, and he was the last graduate student of Thomas Hunt Morgan. His career spanned the years which witnessed the transformation of experimental embryology, a branch of classical zoology, into modern developmental science, whose strongest influences come from genetics and molecular biology. Tyler actively participated in this metamorphosis. Although thoroughly familiar with classical embryology (especially of marine invertebrates) and to an unusual degree appreciative of the historical foundations of contemporary biology, he welcomed novel approaches and new ideas. He was among the first to apply modern physiological and biochemical methods to the study of development. His first paper embodying this approach, "On the energetics of differentiation," was published in 1933 following a period of postdoctoral work in Warburg's laboratory.

Tyler's name is also closely associated with the chemistry and physiology of the fertilization process and with the fertilizin-antifertilizin theory. He and his students extended and refined Lillie's original hypothesis and proposed plausible mechanisms for the main features of fertilization. These concepts stimulated fruitful studies on reproduction in higher organisms and helped create the field of "immunoreproduction." During the last 10 years Tyler became involved, with characteristic drive and enthusiasm, in studies of the macromolecular events during embryogenesis in the sea urchin. He was especially interested in "masked messenger RNA," the synthesis of which he correlated with the onset of embryonic determination. He was convinced that informational RNA would some day be clinically useful, and he performed numerous experiments basic to that ultimate achievement. Related to the masked messenger concept was his interest in the properties and developmental role of cytoplasmic DNA, which he explored actively during his last years.

Tyler was a former president of the American Society of Naturalists and the Society of General Physiologists. He had a long association with the Marine Biological Laboratory at Woods Hole, of which he was a trustee for 14 years, and was active on numerous government committees and in the World Health Organization.

As former students or associates, we have lost a dear friend, and science has lost a devoted scholar.

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Q. From all the published research in which preparative ultracentrifuges were mentioned over the past 8 years or more, list the papers that give methods, gradients, rotors, speeds, and run times for the material of interest to you. (You have 5 minutes.)

A. _____

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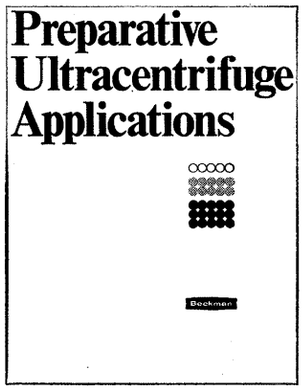

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SCIENCE

Our Nation and the Sea

The world has entered an era in which the oceans are commanding increasing attention. One expanding activity is the exploitation of undersea resources. During the past four years, production of petroleum from the U.S. continental shelves has doubled, and the output is now valued at more than $1 billion annually. To date, all production of offshore petroleum in commercial quantities has been from wells in waters 340 feet deep or less, but exploratory wells have been drilled at water depths of 1300 feet, and leases have been taken to 1800 feet. Already U.S. industry has spent $13 billion in exploiting domestic offshore petroleum resources, including $4 billion in lease bonus and rental payments to the government.

Alert to the growing importance of marine affairs, Congress has shown concern that national policies be adequate. Of special significance was the enactment of Public Law 89-454—the Marine Resources and Engineering Development Act of 1966. This law established a national policy to advance marine sciences and created a Cabinet-level council and advisory commission. The council, consisting of high-level government officials, has worked under a diligent chairman, Hubert H. Humphrey. It has dealt with substantive policy problems, involving marine science, that touched the jurisdiction of two or more government departments. The work of the council has resulted in 20 presidential policy statements. The council's staff, under its director, Edward Wenk, Jr., produced three excellent annual reports on marine science affairs, including one recently released.*

The Commission on Marine Science, Engineering and Resources has also reported recently on its activities.† The commission, consisting principally of nongovernmental members, served for 2 years, under the chairmanship of Julius A. Stratton. Its report contains much thoughtful comment and many recommendations. Naturally, it devotes considerable space to organizational and budgetary matters. About a score of federal agencies are involved in marine affairs, and no one agency has primary overall responsibility. The report recommends consolidation of many of the activities into one organization. Important matters considered in the report are questions of international rights to the sea and sea bottom, management of the coastal zone, the food resources of the seas, and means for increasing the national capability in marine affairs. The recommendations include establishment of national laboratories for marine science in universities, federal support of fundamental marine technology, and national projects for meeting challenging goals. The proposed fundamental technology includes development of special materials and of reliable power supplies capable of operating at great depths. The national projects are designed to force rapid advancement of knowledge and technology. Among the projects recommended are laboratories on the continental shelf and deep-exploration submersible systems capable of carrying men to a depth of 20,000 feet.

One project is of special significance to landlubbers. It is a proposed multifaceted effort to restore water quality in a lake of "manageable proportions." Lessons learned from such a study might be applicable to the Great Lakes.

The two new reports are of interest to many scientists. By reason of their sponsorship they will probably affect national policy. They could well serve as models for other aspects of science relating to public policy.

—PHILIP H. ABELSON

* *Marine Science Affairs—A Year of Broadened Participation* (Government Printing Office, Washington, D.C., 1969). † *Our Nation and the Sea* (Government Printing Office, Washington, D.C.; publication date, 5 February).

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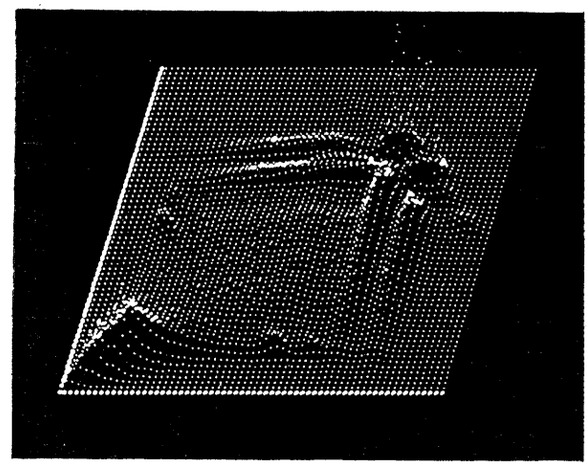

This isometric display of Co^{60} coincidence spectra was generated by an HP 5406A Multiparameter Analyzer System using 64 x 64 channels.

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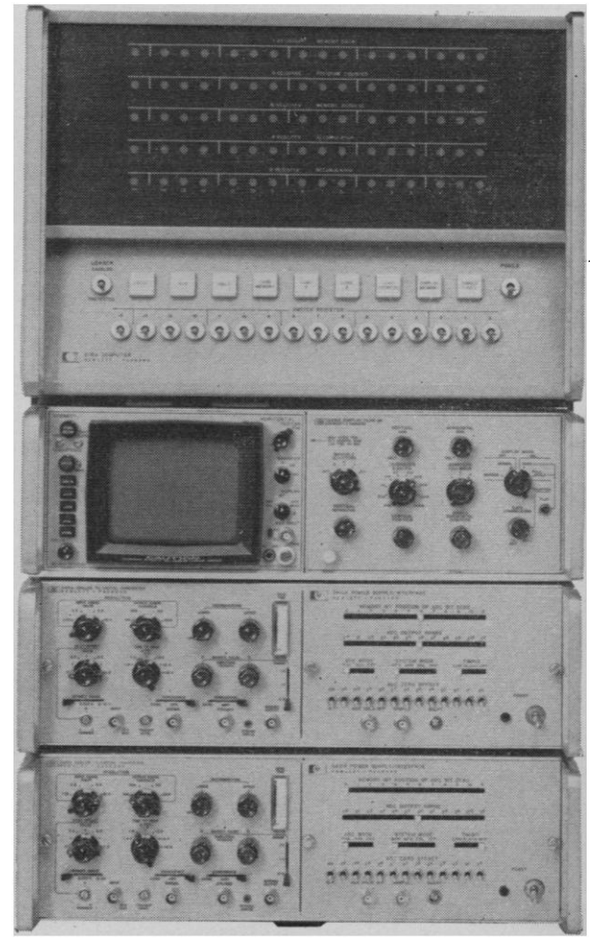

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