

AMERICAN ASSOCIATION FOR
THE ADVANCEMENT OF SCIENCE

Science serves its readers as a forum for the presentation and discussion of important issues related to the advancement of science, including the presentation of minority or conflicting points of view, rather than by publishing only material on which a consensus has been reached. Accordingly, all articles published in *Science*—including editorials, news and comment, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are affiliated.

Editorial Board

ROBERT L. BOWMAN	WILLARD F. LIBBY
MELVIN CALVIN	GORDON J. F. MACDONALD
JOSEPH W. CHAMBERLAIN	EVERETT I. MENDELSON
FARRINGTON DANIELS	NEAL E. MILLER
JOHN T. EDSALL	JOHN R. PIERCE
DAVID R. GODDARD	COLIN S. PITTENDRIGH
EMIL HAURY	KENNETH S. PITZER
ALEXANDER HOLLAENDER	ALEXANDER RICH
ROBERT JASTROW	DEWITT STETTEN, JR.
EDWIN M. LERNER, II	EDWARD L. TATUM
	CLARENCE M. ZENER

Editorial Staff

Editor

PHILIP H. ABELSON

Publisher

DAEL WOLFLE

Business Manager

HANS NUSSBAUM

Managing Editor: ROBERT V. ORMES

Assistant Editors: ELLEN E. MURPHY, JOHN E. RINGLE

Assistant to the Editor: NANCY TEIMOURIAN

News and Comment: DANIEL S. GREENBERG, JOHN WALSH, ELINOR LANGER, MARION ZEIGER, ROSEMARY GALLI

Europe: VICTOR K. McELHENY, Flat 3, 18 Kensington Court Place, London, W.8, England (Western 5360)

Book Reviews: SARAH S. DEES

Editorial Assistants: ISABELLA BOULDIN, ELEANORE BUTZ, BEN CARLIN, SYLVIA EBERHART, GRAYCE FINGER, NANCY HAMILTON, OLIVER HEATWOLE, ANNE HOLDSWORTH, MARCIA JODLBAUER, RUTH KINGERLEE, KATHERINE LIVINGSTON

Advertising Staff

Director

EARL J. SCHERAGO

Production Manager

RAYMONDE SALAMA

Sales: New York, N.Y., 11 W. 42 St. (212-PE-6-1858): RICHARD L. CHARLES, ROBERT S. BUGBEE

Scotch Plains, N.J., 12 Unami Lane (201-889-4873): C. RICHARD CALLIS

Chicago, Ill., 6 W. Ontario St. (312-DE-7-4973): HERBERT BURKLAND

Los Angeles 45, Calif., 8255 Beverly Blvd. (213-653-9817): WINN NANCE

EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Phone: 202-387-7171. Cable: Advancesci, Washington. Copies of "Instructions for Contributors" can be obtained from the editorial office. ADVERTISING CORRESPONDENCE: Rm. 1740, 11 W. 42 St., New York, N.Y. 10036. Phone: 212-PE 6-1858.

The Continental Shelf

A new international Convention on the Continental Shelf gives to each coastal state sovereign rights over the adjoining seabed and subsoil out to wherever the sea is 200 meters deep, and, beyond that limit, for as much farther as it can exploit the natural resources of the undersea area. To a depth of 200 meters the right is exclusive; no other state can stake a claim within this limit. At greater depths, possession goes with ability to exploit. This new convention applies only to the land beneath the sea, not to the waters and not to the airspace above. It was drawn up in 1958 at the U.N. Conference on the Law of the Sea, but went into effect only recently, upon ratification by the necessary number of states.

The legal concept of the continental shelf had its first important formulation in 1945 when President Truman proclaimed U.S. ownership of the natural resources of the adjoining continental shelf. While there has been fairly general acceptance of this doctrine, the new convention constitutes an important codification that gives agreed form and certainty to the law governing rights to the seabed and subsoil, to mineral and other nonliving resources beneath the sea, and to living organisms that at the harvestable stage are either immobile or unable to move except in contact with the seabed or subsoil.

The granting of these rights is not intended to interfere with navigation or fishing rights, obligations to conserve living organisms of the sea, or the right of access for unclassified scientific research. Nor is there yet clarification of the confused problem of the extent of territorial seas. The U.S., in 1793, adopted the 3-mile limit, as have many other countries, but not all. The Scandinavian countries claim 4 miles; some of the Mediterranean countries, 6 miles; and others, 9 or 12.

But the right to subsea resources is now clear. In 1959, the year after this convention was written, the discovery in Holland of one of the world's largest gas fields raised hopes that more riches might lie under the 220,000 square miles of the shallow (average depth = 50 meters) North Sea. Under license from the six bordering countries, 50 companies in various joint ventures are prospecting for North Sea oil and gas deposits. Off the California coast, drilling for oil is already going on at a depth of almost 200 meters. The Mohole project and other crustal drillings for scientific purposes will provide experience that will help to extend present commercial limits to much greater depths. The recent National Academy of Sciences report on oceanography reports current exploitation of submarine diamond, tin, iron, and sulfur resources, as well as oil and gas, and predicts early mining of gold off the Alaska shore. Phosphates, chromite sands, and other material seem promising possibilities. The same report points out that wherever modern beaches have potentially valuable mineral content, there is good likelihood that the drowned Pleistocene beaches farther offshore have similar content.

The 3-mile limit was defined, partly at least, in terms of 18th-century technology, the estimated range of land-based artillery. But the definition was pessimistic and inflexible. The new convention also involves a technological definition, but a flexible and more optimistic one. The seabed is available for each coastal state to exploit as far as it can. The limit will move farther and deeper as technology advances.

—DAEL WOLFLE