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HABEAS MARINUS: A PROPOSAL IN OCEAN LAW

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"We must ensure that the deep seas and the ocean bottom are, and remain, the legacy of all human beings."

President Truman, 1945 Continental Shelf Proclamation

The lawyer and the social scientist must anticipate the problems arising from man's technical expansion.

Submarine colonialism is not yet a major international issue, but it could become one in the 1970's. The term refers to a possible race among nations to appropriate the sea-bed — and the riches lying over and under it. The incentive for such appropriation becomes stronger with every advance in man's ability to live and work under the ocean's surface.

Illustrative of the treasures waiting to be tapped in the future is the rich concentration of gold, silver, zinc and copper ores recently found in just one area under the Red Sea at a depth of 7,000 feet. A very conservative estimate puts the value of ores in this deposit alone at about 1.5 billion dollars.

There is no reason to suppose that this find is unique. On the contrary, much evidence suggests that more mineral wealth lies under the seas and oceans than under the world's present area of dry land. It is now neither technically feasible nor profitable to attempt commercial mining operations under depths like that at which the Red Sea gold has been found. But in an era when men routinely send rockets to the moon, there can be little doubt that mining the sea bed under 7,000 feet of water — or even at deeper levels — will some day be both possible and economical. If that were true today the Red Sea states would almost certainly be arguing acrimoniously about ownership of this sea-bed.

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An attractive proposal to avoid such quarrels was suggested at the World Peace Through Law conference in Geneva in July, 1967. The more than 2,000 lawyers who met there urged the United Nations General Assembly to assume "jurisdiction and control" over the huge mineral resources in the oceans and under them. Such a move would ultimately make it possible for the United Nations to have its own independent income and to use for the benefit of all men and all nations riches that now belong to nobody and benefit no one. And such a resolution of the issue would forever prevent submarine colonialism from threatening the world's peace.

While the focus of technical wonderment has been the exploits in the outer atmosphere and the project to reach the moon, greater attention is now being placed on inner space: the use of the sea and the sea-bed. These developments are sure to create new legal problems. The sea has long been a subject of international regulation and control, culminating in the conventions adopted at the United Nations conference on the Law of the Sea in 1958 (ratified by the United States in 1964). In this paper, viewpoints will be presented of current and future uses of inner space, the relevance of contemporary international law, in dealing with these technical developments, and a consideration of possible changes in international law and practice to meet new situations.

I. TECHNOLOGY

The ocean bottom consists of the continental shelves, the continental slope, and the floor of the deep sea. The continental shelf is that region of the ocean bottom which extends outward from the coastline of the continents for varying distances and to an outer depth usually of 100 fathoms or 200 meters. The shelves begin at the tidelands and extend seaward as a gently sloping platform with the 100-fathom counter generally considered as the boundary between the continental shelf and the continental slope. Because of its shallow depth sunlight penetrates the shelf with plants abounding and on it is situated most of the world's fishing. Throughout the world, the continental shelves total 10,000,000 square miles in area, equal to one fifth of the dry land area of the world. The continental United States has 300,000 square miles of shelf, and Alaska has an additional 600,000 square miles. The shelves are rich in petroleum deposits. There are an estimated fifty billion barrels of petroleum in the Gulf of Mexico and the Persian Gulf alone.

Rachel Carson, in her book *The Sea Around Us*, well described the area beyond the continental shelf:

Once beyond the edge of the shelf, as we visualize the steeper declivities of the continental slope, we begin to feel the mystery and the alien nature of the deep sea—the gathering darkness, the growing pressure, the starkness of a seascape in which all plant life has been left behind and there are only the unrelieved counters of rock and clay, of mud and sand.

The continental slope extends as the declivity from the outer edge of the continental shelf. The slope extends to the sea-bed, the floor of the sea, where darkness prevails and rare species exist. The depths of the oceans are:

	<u>Depth Excluding Adjacent Seas</u>	<u>Depth Including Adjacent Seas</u>
Pacific Ocean:	2,340 fathoms	2,200 fathoms
Atlantic Ocean:	2,150 fathoms	1,820 fathoms
Indian Ocean:	2,180 fathoms	2,140 fathoms

The deep landlocked seas, such as the Gulf of Mexico, the Caribbean, the Mediterranean and the Black Sea, have comparable depths exceeding 2,000 fathoms in large areas. Trenches have been found in the Pacific Ocean with depths of over 6,000 fathoms.

The inner space may be said to comprise exploration in research on the continental shelf, the continental slope and the deep sea-bed. But, in the scientific sense, it cannot be limited merely to the ocean bottom. The sea bottom contains minerals, and on its surface are situated some types of organisms such as sponges and sea cucumbers which are used commercially. Their lives are interrelated with the total marine environment. The environment of a species is its cosmos, the *milieu* in which it lives and comprises an ecological unit. Moreover, the process of exploiting any resource in inner space may well have an effect on other resources in upsetting the balance of nature. Clearly the concept of inner space must encompass the entire benthonic and pelagic environment.

As *homo sapiens* continue to be fruitful and to multiply, the need for exploiting the resources of the sea and of inner space will become even more pressing. No longer will man be permitted to allow the riches of the sea to remain untapped. Today man's entire food crop of the sea is a mere fraction of one per cent of the full measure of growth in the sea. Man's utilization of sea food is most primitive, that of reaping without sowing as a primitive hunter. Nearly ninety per cent of the world's total vegetation is produced, largely unseen by man, beneath the salt surface of the sea. The oceans contain tiny plant and animal organisms called plankton, which bear much nutritive value if means could be developed

for their harvesting. Some writers visualize the placing of atomic reactors underneath the sea to destroy starfish and other species which eat the plankton and thereby deprive the edible fish of food. The possibility has been envisioned of fishermen operating tractors or other devices on the sea bottom with contacts with a mother ship for extended periods of time.

The production of living resources from the seas increased from about seventeen million tons in 1948 to a little more than forty-five million tons in 1965 and is still increasing. Regarding ocean fisheries, the greatest growth has been in the yield from herring-like or clupeoid fisheries. This trend has occurred since there are many more herring-like fish in the world than any other kind; they aggregate in large schools, enabling them to be caught efficiently and cheaply. They are an excellent source of animal protein. The potential harvest of the living resources of the sea could support six billion people, not quite double the present world population. Scientific calculations demonstrate that there is more than adequate wild stock of usable animals being produced by the ocean at present to satisfy our total animal protein needs and, in fact, the protein needs of a world population substantially larger. Increased protein may also be developed from the single cell plant algae.

Aquaculture, the marine equivalent of agriculture, has been regarded by some as a means for more efficient exploitation of ocean resources. But practical experience is lacking. The equivalent of cheap fencing on land is lacking. There has been some experimentation with acoustical fencing, and Maine sardine fishermen are using bubble fencing — simple holes through which compressed air is forced. Fish are not inclined to pass through these bubble fences. Japan has been the leader in marine aquaculture through the production of fish, shrimp and shell fish. Limited experiments on farming the sea in Scottish lochs have indicated that fish production can be increased sometimes as much as sixteen to eighteen times by fertilization. However, such efforts, aside from the development of certain species, may not be worth the unit cost. A conference of plenipotentiaries, convened by the Food and Agricultural Organization of the United Nations (FAO) met in Rio de Janeiro in May, 1966, to consider the rational utilization of tuna resources in the Atlantic Ocean. Conservation regimes are matters of international concern, involving problems of international jurisdiction.

The inner space contains great mineral wealth. The sea water contains salt, copper, gold, radium and other minerals. The seas are constantly being replenished, as 7,000 cubic miles of fresh water from rivers enter the sea each year bringing additional supplies of minerals, including an estimated 160,000,000 tons of common salt alone. The ocean floor

contains a vast supply of minerals. One square mile of ocean floor contains 6,000 tons of manganese, 4,000 tons of iron and 125 tons of nickel, as well as such other minerals as gold and uranium.

As the cost of obtaining minerals from the sea becomes less than the cost of exploiting the resources on land, the inner space will be utilized more and at increasingly deeper depths. Inner space, particularly the continental shelf, has already become a major source for petroleum. From 1960 to 1965, the percentage of the world's oil supply pumped from beneath the ocean increased from eight to sixteen per cent and may increase to forty per cent by 1970. The continental shelves of the United States in 1964 produced 204.2 million barrels of crude oil and 815.2 million cubic feet of gas. Offshore oil exploration has centered in the Gulf of Mexico, the Gulf of Paria — particularly the Trinidad side — and in the Persian Gulf. However, there have been explorations elsewhere, particularly in the North Sea, where petroleum exploitations are expected to have a widespread impact upon the economy of the coastal states. The pace of offshore drilling has been remarkable. Investments continue at a dizzying pace.

The offshore oil installations have included self-contained fixed platforms, self-contained floating barges, self-contained mobile units with submersible pontoons, self-contained and self-elevating mobile units, and fixed surface vessels for drilling in deep waters. The self-contained floating barges, first used off the coast of Louisiana and measuring 38 feet by 76 feet, were towed to a drilling location and the pontoons were flooded to sink to the bottom. The larger mobile units may be either submersible or self-elevating. The former, some of which are 204 feet by 202 feet, are towed to the desired location and the pontoons are flooded to sink to the bottom. Piles may be driven into the sea-bed for further support. The self-elevating type are lifted or lowered to the bottom by hydraulic or electric power. The derrick is carried in a movable structure placed over a slot in the barge on an elevator or caisson as the spud begins. When the well is drilled, water is pumped out by a drill pipe and then a coating of cement is placed around the well. Oil companies are in the process of constantly developing new equipment for deeper drilling, and devices are being developed which would eliminate the familiar platform drilling rig and locate the well head and drilling equipment on the ocean bottom. The undertaking of offshore operations has required the development of onshore auxiliary industries with supplies shipped to the installations by helicopter.

Aside from petroleum, diamonds have been dredged from the continental shelf off the coast of South Africa, and sulfur off the coast of Louisiana. Plans are being made for the exploitation of other minerals from the ocean floor.

Inner space may become a habitat for man. The eminent French scientist and adventurer, Jacques Yves Cousteau, has developed a device enabling him to live for a long period of time underneath the Mediterranean and speculates it may be possible to build cities and live underneath the sea. The possibility exists that by 1971 a vacationer could live in a glass home, which would be lowered into inner space. The design and idea have already been developed, and the materials are available. Buckminster Fuller has envisioned skyfloating geodesic spheres along with floating tetrahedrons, submarine islands and other new sites as new dwelling sites for man.

A stimulant to the utilization of inner space has been the increased efforts devoted to oceanic research. Biological investigations were first carried on by biological stations acting as extensions of university biology departments, such as the Naples Zoological station and the Marine Biological Laboratory at Woods Hole. Later, institutes directed to the study of the ocean as such were established, among the earliest of which were the Scripps Institution of Oceanography and the Woods Hole Oceanographic Institution. During the past thirty years there has been a marked increase in the number of oceanographic institutes with a permanent staff drawn from a wide range of basic scientific disciplines who are associated with universities. Government sponsored fishery laboratories have also undertaken research activities and industry has entered into this area. A concern has developed for training in oceanography, but a heavy financial burden is involved for the establishment of adequate facilities. Groups of universities may organize to undertake projects.

The United States Government has also become involved in oceanic research. The Navy, through the Office of Naval Research, has joined with the ocean-science community in the study of the ocean bottom, particularly regarding underwater detection and in recovery of devices from the sea-bed. The Navy has financed private research and made use of research facilities for its own purposes, such as the use of the *Alvin* — the deep research vehicle operated by the Woods Hole Oceanographic Institution — for the recovery of a nuclear device off the coast of Palomares, Spain. The *Alvin* is also being used to conduct research on the continental shelf by scientists of the Geological Survey and the Woods Hole Oceanographic Institution. Survey scientists, which had compiled the first detailed topographical map of the entire Eastern continental shelf, are using submarines to collect rock and sediment samples of the area where the shelf meets the ocean floor to determine how and when the shelf was formed and what mineral treasures it may hold.

Other devices developed by the Navy, such as the Controlled Un-

dersea Recovery Vehicle — CURV, and the *Sealab II*, have been useful for private oceanic research. The loss of the *Thresher*, a nuclear submarine, in 8,400 feet of water off the New England coast in 1963 led to the establishment of the Deep Submergence Research Group (DSRG) to analyze naval techniques relating to undersea operations. This led, in 1964, to the establishment of the Deep Submergence Systems Project to implement DSRG recommendations and to another project, SEABED. Private industries have been active in these projects and are in the process of constructing, or have constructed, deep ocean vehicles such as Lockheed's *Deep Quest*, General Dynamic's *Star Series*, Westinghouse's *Deepster*, and Reynolds' Aluminum *Aluminaut*.

The 89th Congress has further encouraged oceanic research by the enactment of the Marine Resources and Engineering Development Act of 1966 which established national policy for the development, encouragement and maintenance of a coordinated, comprehensive and long-range national program in the marine sciences, creating the National Council on Marine Resources and Engineering Development under the chairmanship of the Vice President, which is of temporary duration to lay the foundations for future oceanographic research. A report has been submitted.

Many private firms are eager to get in on the ground floor of oceanic research. They range in size from such corporate giants as Standard Oil Company of New Jersey, General Dynamics and Litton Industries, to a host of small specialty companies. Inner space also poses new challenges to the lawyer. Nigel Calder has compared it to a new "Wild West":

With so much wealth there is a wide scope for national and commercial rivalry. The day cannot be far off when the first ranch will be entailed, the first mining claim staked. Who will enforce a yet non-existent law in these huge territories which nobody owns? Nor is it just a matter of avoiding gun fights: in their enthusiasm, the first fish farmers could easily wrench the balance of nature in the sea.

Already there has been trouble. To the nuclear engineers, the ocean depths seemed a natural place to disembarass themselves of shiploads of radioactive wastes; only the fire of usually gentle oceanographers has outlawed that practice — for the time being. Now, too, the oceans are becoming part of the nuclear weapon system of the United States and Russia; the first missile carrying submarines are slipping out to sea, and fixed undersea missile bases and communications centers are a real possibility: the drums are beating for a new weird war dance among the fishes.

The story has all the traditional elements of a sea saga: the battle with winds, waves, and ice, the daring of exploration in bathoscopes at pressures where structural failure means instant death. It also has hard science and several embryo technologies. It has the promise of good fortune for all men; but it also has the threat of new stupidities and new cruelties. As man stretches his good spirit and greed, his scientific humility and his military pretension, into a new dimension, there are three quarters of the earth, almost virgin, to win, lose, or die for.

The invention of international institutions to cope with the problems of advancing science and technology has become a characteristic response of governments and scientific bodies as several hundred international organizations of varying sizes and forms have developed in such fields as the sea, outer space, weather control and nuclear energy. These are both governmental and nongovernmental and vary in geographical scope, functional compass and degree of institutionalization, constituting a vast network of decision-making bodies affecting the impact of science and technology on inter-state relations. Many of these decisions are taken through the assertion of unilateral claims and responses of governments involving reciprocity and allocation of spheres of national competence. This, as will be noted below, has been true of the law of the sea.

The advantages of this approach are that the decision makers are close to the facts and the lawmakers are the states which bear responsibility for action. However, the development of custom is inherently slow and is partial and uncertain. Adequate lawmaking must account for the range of factual situations likely to arise. In regard to the law of the sea, lawmaking has been sought through multilateral treaties. But procedures of treaty negotiation may stimulate claims for exclusive national competence which might not otherwise be made, as representatives of states, in making binding commitments having long duration and requiring parliamentary ratification, are impelled to press for national rights and to avoid concessions encroaching on sovereignty. Multilateral treaty-making procedures are long and protracted since there are delays in the process of ratification. In contrast, states may be more willing to adopt declaratory resolutions in the framework of international organizations because of their character as general statements without purporting to circumscribe state activity as much as detailed treaty commitments. Resolutions do not imply the degree of permanent commitment characteristic of treaties and can be changed by a later assembly. At the same time such resolutions, when realistically conceived and widely approved, may be sufficiently

controlling to provide a reliable guide to future state conduct. Such an approach permits flexibility in international rulemaking, so essential in anticipating technological change.

II. THE DEVELOPING LAW OF THE SEA

An aspect of international law which has been in a process of continuing development involves the regulation of the use of the sea. Rules have evolved regarding navigation, fishing, cable laying and the exploitation of the sea-bed. Many competing interests must yet be resolved, including the interest of the coastal states in security, the enforcement of criminal, customs and health regulations, the interests in conserving fisheries and other living resources, the interests in freedom of shipping and safety of navigation, the interests of the petroleum and mining industries, and the interests of oceanographers and other scientists in conducting scientific surveys. The rules of the sea seek to permit the maximum use of the sea by interest groups in a manner which minimizes conflicts with other groups. The criterion is that of reasonableness.

III. THE GROWTH OF CONTINENTAL SHELF PRACTICE

For the past two centuries, the principle has been generally established that the sea cannot be considered to be under the dominion of any single state or group of states, but is regarded as *res communis* — belonging to all states for the common use of the international community — or *res nullius* — subject to the ownership of nobody, because it is incapable of occupation. In accordance with either conception, all members of the international community may use the sea for fishing, navigation, cable and pipeline laying, flight in the air space over the sea, or for other uses, subject to the accommodation for the rights of other users. No single state may arbitrarily restrict or license such use. The authority of each coastal state is limited to a maritime belt adjacent to its coast — the territorial sea or territorial waters — over which it may assert the same full measure of authority as it asserts upon its land territory, subject, however, to the right of innocent passage by vessels of other states. Beyond the territorial sea, which generally varies in breadth from three to twelve miles, the coastal state may claim the right to assert its authority for special purposes, such as security, conservation and fiscal policy, customs, sanitation and law enforcement. As developed from 18th century hovering laws, such authority over contiguous zones, or zones of special competence, must accommodate the inclusive uses of the international community, being acceptable when it meets the test of reasonableness. Within

this context, exclusive claims have been asserted for the exploitation of the fishing and mineral resources of the sea.

In 1949, the International Law Commission of the United Nations, following suggestions of a memorandum from the Secretariat, decided to embark on an attempt to codify the international law of the sea and framed a series of draft conventions. In 1956, following the adoption by the Commission of a draft convention codifying the law of the sea, the General Assembly of the United Nations adopted a resolution calling for the convening of a plenary conference on the law of the sea. It convened at Geneva in 1958 and adopted four conventions: (1) the Territorial Sea and the Contiguous Zone, (2) the High Seas, (3) Fishing and Conservation of the Living Resources of the High Seas, and (4) the Continental Shelf along with an optional protocol on settlement of disputes and a number of resolutions. These instruments were subsequently ratified and have come into force. These conventions constitute the framework for the contemporary law of the sea, the Convention on the Continental Shelf being particularly relevant.

The work of both the International Law Commission and the Conference involved the making as well as the restating of international law. The work on the Convention on the Continental Shelf necessarily involved the formulating of new rules of international law. The Convention reflected the practice among states, developed following World War II, of claiming exclusive rights to the continental shelf.

From ancient times a number of states have claimed exclusive rights to exploit sedentary fisheries such as pearl fishing in the Persian Gulf and off the coast of Ceylon, while Australia has regulated the pearl shell and *beche de mere* fishing off its coast through legislation by state and federal authorities applying only to British and Australian ships. From time immemorial the Irish authorities have made rules governing the Wixford Coast Oyster beds. The Tunisian government has long claimed authority to regulate sponge fishing. The Venezuelan Pearl Fisheries Act of July 22, 1935 protects and regulates pearl fishing in zones beyond the territorial waters, and Panama has similar regulations. Britain and the Commonwealth countries have regarded the regulation of sedentary fishing on a different footing from other kinds of fishing. Another precursor to modern continental shelf practice is to be found in claims to tunneling by coastal states for the exploitation of subsoil resources situated adjacent to their coasts, as in a claim to coal mining by Britain. Similar claims were made by Canada, Chile and Japan, though often not exceeding the extent of the territorial sea. These claims were based upon the recognized right of a coastal state to occupy the subsoil under

the high seas by the extension of mining installations whose entrance was located on the coastal state or in its territorial waters. These claims did not use the words "continental shelf" because the term had not been invented. No hindrance to navigation was involved.

In 1910, the Portuguese government referred to the continental shelf in promulgating fishing regulations for depths of less than 100 fathoms. The Imperial Russian Government, in 1916, was the first to claim the continental shelf in claiming certain islands as "a natural extension of the continental platform of Siberia." But the theory of the continental shelf was not based in the contemporary sense. The right claimed by Russia was considered to be in relation to the theory of sectors involving claims to the Arctic.

The concept of the continental shelf first appeared in state practice in 1942 in the treaty between Venezuela and the United Kingdom delimiting the sea-bed and the subsoil of the Gulf of Paria, situated between Venezuela and Trinidad. Though the term "continental shelf" was not used, there was reference to offshore installations for the drilling of petroleum, and there were provisions assuring freedom of navigation. The treaty was a bilateral annexation by the two states based on the idea that the sea-bed beyond the limit of the territorial sea is a *res nullius*, subject to occupation. The matter was of little concern to other states, as the area was hemmed in by the two parties to the treaty.

The true catalyst for exclusive claims to the continental shelf were the two Truman Proclamations of September 28, 1945. One proclamation, which involved the mineral resources of the continental shelf proclaimed that:

[T]he United States regards the natural resources of the subsoil and sea-bed of the continental shelf beneath the high seas but contiguous to the coast of the United States as appertaining to the United States, subject to its jurisdiction and control . . . The character of high seas of the water above the continental shelf and the right to free and unimpeded navigation are in no way thus affected.

The preamble justified this claim, encompassing an area of 750,000 square miles, to encourage the discovery and the making available of petroleum and other mineral resources which underlie the continental shelf. The extension of jurisdiction by the contiguous nation was regarded as "reasonable and just" since the effectiveness of measures to use or conserve these resources was contingent upon cooperation and protection from the shore. Since the continental shelf may be regarded as an extension of the

land mass of the coastal nation and thus naturally appurtenant to it, these resources frequently form an extension of a pool or deposit lying within the territory. The United States claim was prompted by considerations of national defense and conservation. The uncertainty of oil entrepreneurs as to whether they would be subject to United States jurisdiction if they constructed installations beyond the territorial sea hindered exploration and exploitation. The Proclamation was also motivated by domestic politics — the controversy as to whether the states or the federal government should assert authority over these submarine areas, the tidelands. The Truman Proclamation followed the U.S. practice of claiming a narrow territorial sea while extending jurisdiction to contiguous zones for special purposes, such as customs, law enforcement and security. The claim was actually an assertion of jurisdiction rather than mere territory.

The second Truman Proclamation dealt with fisheries and asserted the establishment of conservation zones in areas of the high seas contiguous to the coasts of the United States where fishing activities have been or may be developed and maintained on a substantial basis by its nationals alone (where it would be proper for the United States to regulate the fishing of its nationals) and where such zones have been established by United States nationals and nationals of other states. Agreement is to be entered into between the United States and such other states as to regulation. Other states are also recognized to have a right to establish similar zones provided that corresponding rights of nationals of the United States are recognized. While the Proclamation as to the continental shelf asserts an exclusive claim to the mineral resources, the Proclamation on fishing is inclusive in that it recognizes the rights of nationals of other states. In implementing this policy, the United States entered into a number of agreements with Latin American and European states.

However, the U. S. position was confused by the United States Submerged Lands Act which, in conferring title to the states, defines "natural resources" as including fishing. In addition, the states have enacted legislation which is applicable beyond the three-mile limit. The State Department has contended that in the outer continental shelf the federal government incorporates and gives effect to the legislation of the littoral state and that this legislation is an internal matter having no bearing on relations with other states.

The U. S. precedent was followed by the United Kingdom as affecting offshore claims to certain overseas possessions, to claims by Saudi Arabia, Iran, Pakistan, India, the Philippines, Australia, Israel, the United Arab Republic, Iraq, and Bulgaria. Iceland and Korea used the continental shelf to assert zones of special competence for fishing. Cambodia, Ceylon and Burma claimed sovereignty over the continental shelf for sedentary and pelagic fishing.

Latin American claims to the continental shelf purport to reserve maritime areas for exclusive control to protect the living resources of the sea. The continental shelf was conceived by these states as a basis for asserting control over a wider maritime zone to conserve fisheries and necessitating the control of the superjacent waters. Chile, Ecuador and Peru, in a joint declaration in 1952 at Santiago de Chile, claimed "sole sovereignty and jurisdiction over the area of sea adjacent to the coast of its own country and extending not less than 200 nautical miles from the said coast," including the "sea floor and subsoil thereof." The right of innocent passage of all vessels through the zone was recognized. These principles were reaffirmed at Lima in 1954 and at Quito in 1955, when Costa Rica also acceded to them. These claims were justified to conserve natural resources with the argument that the cormorants eat the anchovies and deposit the excrement as guano, used as fertilizer; location of the anchovies being determined by the flow of the Humboldt Current, situated 200 miles from the coast. Since anchovies are also used as bait for catching tuna, conservation regulations are required. Fishermen are required to secure licenses to fish within the zone. These claims are based on the notion that the sea and its environment constitute an ecological unit. However, these claims have been criticized as being based on inadequate scientific data and because the governments have not conducted the necessary extensive investigations needed for formulating adequate conservation measures. U. S. tuna vessels have been seized, and the owners have been heavily fined. Negotiations to resolve the controversy have been unsuccessful. In 1954 Congress enacted the Reimbursement of Fines Act to reimburse ship owners and seamen where vessels were seized in situations involving territorial sea claims not recognized by the United States with the Secretary of State instructed to assert the claims against the seizing government.

The United States has contested the biological basis for these claims by contending that the relationship of the coastal communities to the sea is of an economical rather than a biological character. The products enter into trade and are consumed elsewhere. Furthermore, the ecological system is an essentially localized manifestation of major world-wide meteorological and oceanographic forces, such as the Humboldt Current, the several equatorial currents, and the California current. The stocks of fish, such as the tuna, roam wide over the oceans and do not respect the "bioma." Though the 200-mile claims have not been recognized by other states, they represent a tendency toward extension apparent in the practice of other Latin American states as well as in other parts of the world.

IV. THE CONVENTION ON THE CONTINENTAL SHELF

With the Truman Proclamation of 1945 as the catalyst, there has been an assortment of individual claims to the continental shelf. Since most of these claims were unopposed, there appeared to be a tendency to recognize them as part of customary international law through acquiescence. But it was doubtful that, on the eve of the Geneva Conference on the Law of the Sea in 1958, these claims had actually evolved into an established principle of international law. However, the evolution of state practice raised serious problems for preserving the freedom of the high seas as the continental shelf concept came to be merged with the extension of the territorial sea. Moreover, among states which claimed the sea-bed and subsoil there was the problem of maintaining freedom of navigation. Installations constructed for the extraction of mineral and petroleum deposits are obstacles to navigation. Leakages from such installations may hurt the living resources of the sea. Today, the basis for such claims and the basis for international law regarding inner space is the Convention on the Continental Shelf. Articles of the Convention pertinent to this study are discussed below.

A. Defining the Shelf

As defined by Article 1, the continental shelf refers:

(a) to the sea-bed and subsoil of the submarine areas adjacent to the coast and outside the area of the territorial sea, to a depth of 200 metres or beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas; (b) to the sea-bed and subsoil of similar submarine areas adjacent to the coasts of islands.

The reference to 200 meters presents a rough idea as to the conception of the continental shelf as distinguished from the deep sea floor, while the reference to exploitability permits flexibility. The two criteria are to be regarded as complementary. A coastal state is assured of its right to exploit the continental shelf contiguous to its coast up to a depth of 200 meters. If feasible, it is assured of exploiting at greater depths.

The regime of the continental shelf begins at the outer limit of the territorial sea. The most controversial issue is the outer limit of the territorial sea. The traditional limit, as asserted by the major maritime powers is three miles, a rule developed from the practice of the Scandinavian countries during the 16th and 17th Centuries in asserting a three-mile neutrality zone. Though the Scandinavians used a different

unit of measurement so that their claim was actually set at four miles, the three-mile limit became accepted practice. During the 19th century, three miles was generally recognized as the limit of the territorial sea; though Portugal and the Mediterranean countries claimed six miles. In 1912 the Imperial Government of Russia asserted a twelve-mile claim, which was reaffirmed by the Soviets. As was apparent at the Hague Codification Conference of 1930, the three-mile claim was no longer asserted by many states; and, following World War II, claims of more than three miles, and especially of twelve miles, became more widespread. The International Law Commission, after extensive deliberation, could not agree upon a formulation.

During the 1958 Geneva Conference, bitter debate erupted over the resolutions delimiting the territorial sea. The Soviet Union, motivated by security considerations, joined with the Arab, Asian and Latin American states in supporting resolutions setting the territorial sea at twelve miles. These resolutions would have allowed the coastal state to set the breadth of the territorial sea at limits of from three to twelve miles. The states which are members of N.A.T.O. failed to form a uniform bloc, as Iceland supported a twelve-mile territorial sea, while Canada sought an exclusive fishing zone. The maritime powers, notably the United States and the United Kingdom, opposed extending the territorial sea to twelve miles as impairing air and sea navigation. The United States also maintained that a twelve-mile extension would adversely affect national security by hampering the movement of submarines and battleships. But, aware that the three-mile limit would not be accepted by the Conference, the United States proposed, as compromise, to set the breadth of the territorial sea at six miles with the coastal states granted an exclusive fishing zone up to twelve miles subject to prior treaty arrangements and the rights of foreign fishermen who have fished in the area for the past five years. But though this proposal received the most support, it failed to gain the necessary two-thirds majority.

In 1960, a second conference was convened from March 17 to April 26 at Geneva for the specific purpose of establishing a rule as to the breadth of the territorial sea. Much of the discussion of the previous conference was repeated, and the United States and Canada presented a joint proposal limiting the territorial sea to six miles with a twelve-mile fishing zone measured from the same base line as the territorial sea. Any state whose vessels had made a practice of fishing in the outer six miles for a period of five years as of January 1, 1958, could do so for a period of ten years beginning October 31, 1960; articles 9 and 11 of the Convention on Fishing and Conservation of the Living Resources of the

High Seas would apply in the settlement of any disputes. This would not affect conventions or international agreements already in force. But this proposal failed adoption by one vote. The failure of the two conferences leaves the controversy unsettled, but the joint Canadian-United States proposal regarding fisheries has been implemented by bilateral and multilateral agreements undertaken by Britain. In the United States, pressure from fishing interests has led Congress to enact legislation extending American jurisdiction with regard to fishing to twelve miles. Pursuant to this legislation, a Russian trawler has been detained when fishing off the coast of Alaska and the captain fined for trespassing.

B. The Rights Conferred

Article 2 of the Convention on the Continental Shelf asserts that the coastal state "exercises sovereign rights" for the purpose of exploiting and exploring its natural resources. The rights conferred are exclusive in that, if the coastal state does not explore the continental shelf or exploit its natural resources, no one may undertake these activities or make a claim to the continental shelf without the express consent of the coastal state, and the state's rights do not depend on occupation or any express proclamation. The natural resources "consist of the mineral and other non-living resources of the sea-bed and subsoil together with living organisms which, at this harvesting stage, either are immobile or are unable to move except in constant physical contact with the sea-bed or subsoil."

C. Regulating Uses

Articles 3, 4, and 5 of the Convention enumerate the obligations of a coastal state to maintain the freedom of the seas in utilizing the natural resources in the sea-bed and subsoil of the continental shelf. Article 3 asserts the general principle that the rights of the coastal state "do not affect the legal status of the superjacent waters as high seas, or that of the air space above those waters." According to article 1 of the Convention on the High Seas, these superjacent waters have the legal status of high seas, making them, under article 2, freely open to all nations. Freedom of navigation, fishing, laying submarine cables and pipelines, flight, and other freedoms recognized by general principles of international law were granted. Articles 4 and 5 obligate a coastal state to take measures to assure that these freedoms will be maintained, and paragraphs 1 and 8 of article 5 also provide for the freedom to undertake fundamental research.

D. Shelf Boundaries

With the increased exploitation of inner space, the problem of delimiting the common continental shelf between two or more states will become more pressing. Only two treaties have dealt with the problem, one involving the United Kingdom and Venezuela and another, Bahrain and Saudi Arabia. Generally, the Proclamations regarding the continental shelf assert that submarine boundaries are to be determined on an equitable basis, preferably by mutual agreement. However, some of the Proclamations refer to more specific formulations. Peru permits the State Petroleum enterprise to exploit a submerged oil field "as far as the frontier with Ecuador." The Republic of Korea asserts a claim up to the Rhee Line and attempts unilaterally to determine the angles at which that boundary approaches the western end of the Korean-Manchurian borderline.

The Convention on the Continental Shelf, in article 6, adopts the median line formula for delimiting the boundaries of the continental shelf. Where the same continental shelf is adjacent to the territories of two or more states whose coasts are opposite each other, the boundary is to be determined by agreement; and in absence of agreement, unless another boundary line is "justified by special circumstance," the boundary "is the median line, every point of which is equidistant from the nearest points of the base lines from which the breadth of the territorial sea of each state is measured." The same principle applies in paragraph 2 where the continental shelf is adjacent to the territories of two adjacent states.

A problem in the application of article 6 is the provision in article 7 that the Convention "shall not prejudice the right of the coastal state to exploit the subsoil by means of tunneling irrespective of the depths of water above the subsoil." Conceivably one state might engage in tunneling from the coastline, while a neighboring state exploits the subsoil resources by the erection of offshore installations. The state engaging in tunneling might bore beyond the median line, contending the Convention does not apply. However, this is a matter to be resolved by mutual agreement and should not involve too many difficulties.

E. Settling Disputes

The problem of delimiting the continental shelf focuses on the need for a mechanism to arbitrate disputes. A serious gap in this Convention, as well as in the others involving the law of the sea, is the absence of a provision for settling disputes. Article 73 of the Interna-

tional Law Commission Draft had provided that disputes "shall be submitted to the International Court of Justice at the request of any of the parties, unless they agree on another method of peaceful settlement." However, opposition to such a provision at the Conference by the Soviet bloc, some of the Latin American states, and the newly emerging Asian states forced its deletion. All proposals to provide for settlement through the International Court were rejected. An Optional Protocol was adopted to provide for the resolution of disputes. Though the conferring of compulsory jurisdiction upon the International Court of Justice, as provided in article 73 of the International Law Commission Draft, had been routinely adopted in many technical conventions, the delegates at the Geneva Conference apparently felt that the law of the sea involved so many political implications affecting vital national interests that they refused to take this approach. If the Conference had adopted article 73, the debates in the Fourth Committee involving the continental shelf indicate that it would have been more difficult to get the Convention accepted and ratified.

Both article 73 and the Optional Protocol fail to meet fully the need for settling disputes. The approach taken is the traditional (and obsolescent) application of the theory that only states are subjects of international law. No provision is made for individuals to seek redress before an international tribunal. Where his right to use of the sea is infringed upon, he must depend on the ability and willingness of the state of which he is a national to seek redress. Though he may appeal to the administrative agencies and judicial tribunals of the coastal state, he has no recourse after exhausting these available remedies unless the state to which he owes allegiance intervenes in his behalf.

The Convention has been criticized for failing to provide more definite guidelines. But conditions vary; and, with the progress of exploitation, new situations arise so that a convention intended for universal application needs to be flexible. Only general principles could be set forth. Content can only be provided through practical application.

V. FREEDOM OF THE SEAS—AN INDIVIDUAL RIGHT

The freedom of the seas is an individual right and should be recognized as such. Where an individual—as a fisherman, sailor, scientist or airplane pilot—is arbitrarily denied the right to use the seas or his freedom of using the seas is arbitrarily interfered with, his individual rights are infringed upon. He is entitled to have the right to seek recourse from an international tribunal.

A means for such recourse is suggested by the concept of Habeas Marinus, a variation of World Habeas Corpus, which would permit the use of an international Writ of Habeas Marinus for any individual who is arbitrarily detained and deprived of fundamental human rights. By invoking the writ of Habeas Marinus, he could appeal, upon the exhaustion of available domestic remedies, to a regional, and ultimately a universal, international tribunal which would issue the Writ demanding his release. Applying these concepts to the freedom of the seas where an individual fishing 200 miles from a coastline is imprisoned or fined and his boat is seized, he could invoke the Writ as a remedy to protect his rights. If his boat is seized, he could invoke the related Writ of Habeas Proprietatem as a remedy for the taking of his property without compensation. Where an individual is denied the right to navigate or to send his cargo through an international waterway, such as the Suez Canal, he could invoke a modified form of Habeas Corpus with Habeas Marinus to seek determination before an international tribunal as to his right of passage. The Writ of Habeas Marinus could be developed as a means for compelling implementation of all regulations regarding the use of the sea, including conservation, the regulation of fisheries, the prevention of pollution, and the safety of and jurisdiction over ships.

Habeas Marinus would be particularly relevant in regard to the use of inner space. A large portion of this region is under the regime of the continental shelf, which confers exclusive rights upon the coastal state. But it is unclear as to whether the Convention would be applicable to such uses of the sea-bed as the erection of a dwelling. Would this constitute exploitation of a resource? Under the Convention, the coastal state probably could assert criminal and civil jurisdiction over individuals who utilize the continental shelf to exploit its sea-bed or subsoil resources; but it is doubtful that such jurisdiction could be asserted where the continental shelf is used for other purposes. A problem of this type has arisen with regard to pirate radio broadcasting on the North Sea, particularly off the coast of the Netherlands, where a tower has been constructed on the sea-bed outside of the territorial sea. The jurisdiction of an international tribunal could be asserted under Habeas Marinus to cover precisely such situations. Such a tribunal would assure that where individuals, acting outside any municipal jurisdiction, make use of the sea, the law of the sea would be applicable to them.

The Writ of Habeas Marinus would also constitute a means by which individuals making use of the sea could have an international tribunal determine if the rights of inclusive users are unreasonably infringed upon. Fishermen could claim that the coastal state, in exploiting

the sea-bed and subsoil, has improperly restricted or interfered with fishing rights or has not taken proper precautions to prevent the destruction of living resources by the introduction of harmful agents or by engaging in improper seismic explosions. Sailors could claim that the restrictions on navigation are arbitrary, while scientists would have recourse if a coastal state denied an application to conduct a research project on the continental shelf. These conflicting claims could be resolved by the international tribunal through the application of the standard of due process—whether the infringements upon inclusive rights or uses are reasonable. The international tribunal would balance the exclusive rights of the coastal state to the exploration and exploitation of the sea-bed and subsoil with the inclusive rights of the international community to the use of the superjacent waters and air space. The approach would be to maximize the benefits for all users.

Habeas Marinus would have a special role to play in the exploitation of the inner space beyond the continental shelf—on the sea-bed itself. Though a literal interpretation of article 1 of the Convention on the Continental Shelf could confer exclusive rights upon a coastal state to exploit inner space in mid-ocean, thousands of miles from its coast, such claims, however, as suggested earlier, would be unreasonable and were not contemplated by the spirit of the Convention. Conceivably, a situation may develop similar to that regarding outer space. Though states have traditionally claimed sovereign rights to the air space over their territories, these rights have not extended to the use of outer space, the region beyond the atmosphere. Similarly, while states assert exclusive rights to the sea-bed and subsoil of the continental shelf, these claims may not extend to the mid-ocean.

The deep sea miner (unlike the deep sea fisherman, who, at capture, acquires ownership of an object previously *res nullius*) has a capital investment not only in the recovery system but also in the deposit itself and thus desires some law which grants him an exclusive right to develop and mine a deposit in the exploration of which he has spent a substantial amount of money. A world oceanic authority can be projected for the coordination of all existing schemes of functional authority, operating under world community principles and procedures; but it would not seem a suitable level for the settlement of resource allocation disputes, which are primarily regional in character. In a regional scheme of mining authority, the noncoastal mining states, wishing to exploit resources in deep waters close to a continental shelf, could negotiate a compensation agreement with the adjacent licensing state instead of colliding with the Convention on the Continental Shelf and the Convention on the High Seas.

The Convention would not justify monopolistic exploitation in remote high sea areas, and cooperative arrangements under a regional mining authority would not be feasible in such an area.

States may assert claims to inner space on the basis of the occupation and appropriation of unoccupied territories, theories originally propounded by some writers to defend early continental shelf claims. Conflicting claims could be resolved by an international tribunal through the Writ of Habeas Marinus. Such claims should be resolved through international arrangements. A preferable approach would be to place these areas of inner space under the jurisdiction of an international body for benefit of the world community as a whole. This body would regulate the exploration and exploitation of these regions, granting rights to individuals to stake out claims. Through Habeas Marinus, an international tribunal would resolve disputes as to individual rights. The tribunal would assert criminal and civil jurisdiction.

While World Habeas Corpus and Habeas Proprietatem envisage regional tribunals reflecting the culture and traditions of differing legal systems in the protection of human rights, the law of the sea is a subject of universal application requiring uniform application. Habeas Marinus could best be administered and adjudicated by a universal tribunal with facilities, so that any individual, regardless of where he may be situated, could invoke its jurisdiction.

The regulation of living resources of the sea, *i.e.*, the fisheries, is more complex. There are three possible arrangements for resource allocation: (1) extending the exclusive jurisdiction of the coastal state, (2) giving the United Nations exclusive jurisdiction over the resources of the high seas, and (3) continuing to operate under existing rules of international law and practice. The law of Habeas Marinus is peculiarly applicable under the latter two of these three approaches.

The extension of coastal state jurisdiction would be most agreeable to fishing interests and has the support of most coastal states where the interests of fisheries are predominant. But there is the difficulty of dissociating jurisdiction for fisheries from exclusive jurisdiction for other purposes, as such extensions encourage an extension of the territorial sea. Moreover, resources supporting major fisheries will not receive full protection in the harvestable stage if the ocean is divided into national lakes as the fishery resources migrate from one coastal area to another. International disputes would still arise, though less likely along the extensive coastlines of the United States and Canada. Furthermore, there is need for provision of adequate protein resources throughout the world. Fish resources need to be more fully developed, which they are unlikely to be

when restricted to exclusive jurisdiction. A group of nations acting together may be more able to conserve these resources.

A broadly based movement exists to turn over all deep sea resources to the United Nations. A move in this direction was the Resources of the Sea Resolution of the General Assembly in 1966. The belief exists that by developing and selling these resources, the United Nations could be more fully funded and thus more independent of the political whims of member states. As noted above, there is need for an authority to lease areas for deep ocean mining. In regard to fisheries, there is the urgent need for regulating high seas fisheries which are open to all. Entry into these fisheries should be limited in order to maximize net economic yield, and this limitation can be achieved only when such resources are under the exclusive jurisdiction of a managing authority, such as United Nations control. But it is unclear if the member states at this stage want an independently financed United Nations. Conceivably, such an independent international body could decide to establish a means for tracking nuclear submarines, a policy which some powers may not desire. However, if such international control were established, there would need to be an infrastructure of legislative, administrative, and judicial regulation. Rules would need to be established for each type of fish. Regarding judicial implementation, the law of Habeas Marinus would be especially applicable as providing a means for directly regulating the activities of the individual fisherman and in providing the fisherman with judicial recourse to protect his interests.

The present approach of international regulation has not been successful. Freedom of fishing is based on the criterion of reasonableness. Article 1 of the Convention on Fishing and Conservation of the Living Resources of the High Seas asserts:

All States have the right for their nationals to engage in fishing on the high seas, subject (a) to their treaty obligations, (b) to the interests and rights of coastal States as provided for in this convention and (c) to the provisions contained in the following articles concerning conservation of the living resources of the high seas.

Living resources, outside the territorial sea and not a resource of the continental shelf, are the common property of all nations, coastal or non-coastal. Article 2 asserts:

All States have the duty to adopt or to cooperate with other States, in adopting such measures for their respective na-

tionals as may be necessary for the conservation of the living resources of the high seas.

The term "conservation of the living resources of the high seas" is defined by Article 2 as meaning the aggregate of the measures rendering possible the optimum sustainable yield from those resources, so as to secure a maximum supply of food and other marine products. This forms the framework under which the management of international fisheries is supposed to operate and is, conceptually, a pretty tight system. Essentially, it is a codification of the practice of nations, developed over a fifty-year period from the Fur Seal Convention in 1911. Other examples are the International Whaling Commission, the North East Atlantic Fisheries Commission, the North West Atlantic Fisheries Commission, and the North Pacific Fisheries Commission. The number of countries involved was small. The aim has been to prevent overfishing with division of yield. In the United Nations a fisheries administration exists in the Food and Agriculture Organization, which has not been effective, but which has been given more attention since 1960.

The technical problems of conservation are becoming more international in character. Management authorities on a regional and subregional basis are likely to occur. Such regulation, to be effective, must operate directly upon the individual. Habeas Marinus is the means for facilitating such operation.

Habeas Marinus would reflect the tendency for the technological order to prevail over the territorial order in the control of the sea. For almost forty years, the old "status zones" of the sea and the resulting "status law" have seemed much too rigid to serve as a proper legal framework for new and expanding uses of the sea.

VI. CONCLUSION

Scientific and technological progress has permitted the exploration and exploitation of an expanding area of inner space. These developments have led to the adoption of the Convention on the Continental Shelf, which now regulates the greater portion of inner space that is currently being exploited. Though not all states have ratified the Convention, it is an expression of general principles of international law applicable in such areas as the North Sea. But the Convention merely lays down general principles, and for it to have meaningful application, there must be recourse to an international tribunal. Because the rights and duties regarding the freedom of the sea apply directly to individuals as users, such recourse must be directly available to them as subjects of international

law. Though in some instances such recourse could be provided through the proposals for World Habeas Corpus and Habeas Proprietatem, the development of Habeas Marinus would provide a more inclusive tool. As access to the deep sea-bed becomes more attainable, the spectre of claims in a "no man's land" looms closer. Habeas Marinus as part of an overall arrangement for international control may offer an approach to a solution. Habeas Marinus could also fill in gaps regarding jurisdiction over acts committed on the high seas, such as pirate broadcasting. Some doubt exists as to a state's authority to assert jurisdiction over an installation fixed to the continental shelf outside territorial waters which engages in pirate broadcasting.

New technology which can better the life of man can be fully implemented if the law of Habeas Marinus is adopted to regulate it. The rule of law of the sea must evolve in a manner which will anticipate these developments for the maximum benefit of the world community. Such law, premised on notions of due process or reasonableness, must acknowledge the individual as a subject of international law by permitting him to assert his rights to the freedom of the seas.