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The Trouble with Mercury: Can Domestic Laws Contain an International Threat

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THE TROUBLE WITH MERCURY: CAN DOMESTIC LAWS CONTAIN AN INTERNATIONAL THREAT?

"Quicksilver," a nickname connoting life-like mobility, well befits mercury. Indeed, the name derives from the fact that mercury is the only metal existing in the liquid state at ordinary temperatures. It is also more abundant, more volatile, and more reactive than other metals it most resembles chemically. These, and a host of other unusual properties, have led to widespread industrial use of mercury and its compounds. However, as much as one-quarter of this mercury, some 600 tons annually in the United States alone, is being returned to the environment.[1] Between 1953 and 1970, the threat of mercury pollution became evident, but not until almost 1971 did anyone suspect the problem was other than local in nature.

I

BACKGROUND

It was in 1953 that symptoms of chronic and acute mercury poisoning were first observed in villages surrounding Minimata Bay in Japan. Villagers who had eaten fish and shellfish caught in Minimata Bay suffered from progressive blindness, deafness, incoordination, and intellectual deterioration[2] — symptoms which had for years plagued industrial workers using mercury.[3] Through 1970, 121 cases of "Minimata disease"

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1. *See* 713 GEOLOGICAL SURVEY PROFESSIONAL PAPER, REPORT ON MERCURY IN THE ENVIRONMENT, at 4 (1970) [hereinafter cited as *Mercury in the Environment*].

2. ENVIRONMENTAL RESEARCH, Vol. 4, No. 1, March 1971, at 5. *See also* Irukayama, *The Pollution of Minimata Bay and Minimata Disease*, ADVANCES IN WATER POLLUTION RESEARCH, Proceedings of the Third International Conference, Vol. 3, September 1966, at 153-65.

3. Mercury has long been known as a poison. The old expression 'mad as a hatter' reflected popular awareness of brain damage sometimes suffered by hatmakers working with felt that had been processed with mercury. Yet until recently neither Government officials nor scientists gave much thought to the possible harmful effects of mercury-containing wastes dumped into sewer systems by industrial plants. There was evidently a widespread assumption that mercury was insoluble and would lie forever quietly and inertly at the bottom of any body of water it reached.

N.Y. Times, July 25, 1970, at 22, col. 2. For a detailed treatment of industrial cases of mercury poisoning, see P. BIDSTRUP, TOXICITY OF MERCURY AND ITS COMPOUNDS (1964).

were diagnosed including forty-six deaths. Twenty-three cases were congenitally defective babies suffering a cerebral palsy-like disease and born to mothers who had eaten contaminated fish but showed no symptoms themselves.

The source of contamination was eventually traced to a plastics manufacturing plant upstream from Minimata Bay which discharged large amounts of methymercury, a particularly dangerous organic form of the metal. By a process of biological magnification only incompletely understood, methylmercury is quickly assimilated by plants and lower marine life and progressively concentrated as it moves up the food chain.[4] The incidents at Minimata Bay made mercury the only substance which, as a pollutant, has directly taken human life.[5]

New evidence from Sweden indicated that certain microbial systems in the bottom muds of rivers and bays were capable of converting inorganic mercury residues, long thought to be inert, into active and dangerous methylmercury. "Thus, the hazard to man was associated with his eating fish and shellfish and not simply with the presence of methylmercury in the [waste] water."[6] These discoveries prompted the Scandinavian countries in 1966 to curtail their previously heavy use of mercury pesticides.

It was not until March of 1970, however, that the United States became interested in mercury pollution. After a Canadian graduate student found high levels of mercury in fish caught in Lake St. Clair, the province of Ontario promptly banned commercial and sport fishing on the Canadian side of the popular lake. Michigan then banned fishing on the United States' portion of Lake St. Clair, and subsequent discoveries and responses throughout the United States followed rapidly.[7]

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4. Biological magnification of a pollutant occurs each time one organism consumes quantities of a lesser organism which is already contaminated. Smaller fish eat plants that have absorbed mercury from the surrounding water. Predatory fish feed on the smaller animals, thus carrying the process one step further. Man is often the end-point in this sequence.

5. It is, of course, recognized that many pollutants have caused death. Rachel Carson, in SILENT SPRING (1962), described the terrible deaths suffered by farm workers exposed to pesticides. However, in these cases, just as in instances of industrial mercury poisoning, death resulted from direct contact with the chemical and not through the complex physical and biological processes of "pollution."

6. ENVIRONMENTAL RESEARCH, *supra* note 2, at 5.

7. Ohio banned fishing on its portion of Lake Erie and filed suit against Dow and Wyandotte chemical companies seeking injunctive relief and damages for their pollution of the lake through operation of their mercury cell chlorine-alkali plants. *See* Ohio v. Wyandotte Chemicals Corp., 401 U.S. 493 (1971), where the Supreme Court declined to exercise its original jurisdiction because of the complexity of the

By Fall, 1970, mercury pollution was established as a nationwide problem. Water, fish, and gamebirds in at least thirty-three states were found to contain abnormally high amounts of mercury.[8] Still, the extent of the threat was not fully known. A preview of what was to come was a *New York Times* report on the discovery of mercury in the livers of Pacific seals 100 times the level established as safe for human consumption.[9] The climax came in December. Tuna and swordfish were withdrawn from the market within a few days of each other by the Food and Drug Administration due to unsafe mercury levels.[10] Tuna and swordfish are deep sea fishes which, unlike many marine species, have no contact with fresh or brackish water. Mercury pollution had reached the oceans and become an international threat.[11]

II

Dimensions of the Problem

Mercury and the entire class of pollutants known as "heavy metals"[12]

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factual issues involved. By May, New York had banned fishing in Onondaga Lake, the Oswego River, Niagara River, Lake Erie, and Lake Ontario. The following summer found widely-scattered states like Vermont and Georgia restricting local fishing. The Justice Department began to institute civil actions to enjoin industrial discharge of mercury into navigable waters under authority of a newly-resurrected weapon, Section 13 of the Rivers and Harbors Act of 1899. *See* note 45 *infra*. For a comprehensive chronology of the events occuring between March 1970 and February 1971, see H. Jones, Mercury Pollution Control, at 3-12 (1971).

8. N. Y. Times, September 11, 1970, at 1, col. 1.

9. N. Y. Times, October 30, 1970, at 1, col. 7. The Food and Drug Administration responded by banning further interstate distribution of a particular vitamin capsule made primarily from seal liver. *Id.* at col. 8. The discovery also provoked concern for Alaskan Eskimos, many of whom still rely on seals and other marine mammals as a staple part of their diets. *Id.* at cols. 6-7.

10. Mercury Pollution Control, *supra* note 7, at 12.

11. The North Pacific halibut is the latest species added to a growing list of fish found to contain mercury and undergoing Food and Drug Administration inspections before going to market. Washington Post, August 4, 1971, at A-23, col. 4.

12. The class of heavy metal pollutants includes silver, arsenic, cadmium, chromium, copper, mercury, lead, nickel, and zinc. *See* Fed. Water Poll. Control Ad., Report on Water Quality Criteria, at 85-88 (April 1968). Mercury, however, is considered the most toxic member of the group. *Id.* at 85, 88. *See also Statement of the Honorable Carl L. Klein, Assistant Secretary of the Interior for Water Quality and Research, before the Subcommittee on Energy, Natural Resources and Environment, Senate Committee on Commerce, August 26, 1970* for a report on the toxic threat of arsenic, cadmium, and lead in our waterways. *See* Council on Environmental Quality, Toxic Substances, at 2 (April 1970) [hereinafter cited as Toxic Substances] for estimates of United States consumption of these toxic metals.

were largely overshadowed by oil and pesticides during the 1960's.[13] Dramatic catastrophes like *Torrey Canyon* and Santa Barbara vaulted oil into the top spot as a marine pollutant.[14] How does mercury compare with these rivals for the public eye?[15] By each of the four criteria proposed by the Council on Environmental Quality as guidelines to environmental priorities,[16] mercury and the heavy metals demand precedence.

A. *The Intrinsic Importance of the Problems — The Harm Caused by Failing to Solve Them*

The effects of mercury on human beings have already been noted. At a time when the world's population is turning increasingly to the oceans for sources of food and protein, the contamination of marine life from the largest fish and cetaceans to the smallest plankton singularly suggests the immediacy of the mercury problem. It is contended that despite evidence of mercury residues in fish for several decades,[17] incidents of adverse effects on human life are scarce. Fortunately, incidents on the order of Minimata Bay are rare; however, there is no way to evaluate the cumulative and chronic effects of mercury consumption. Indeed, the

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13. Small amounts of heavy metals can be a problem. For example, until early this spring [1970], little attention was given to mercury, although separate incidents of mercury poisoning had occurred in Japan and Sweden.
COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY: THE FIRST ANNUAL REPORT, at 33 (August 1970) [hereinafter cited as ENVIRONMENTAL QUALITY].

14. *Id.* at 130. The author of a recent law review note, after examining several classification schemes, concluded:
Regardless of classification scheme and despite the difficulties of ranking pollutants, there is general agreement that the most serious threat to the marine environment is posed by pesticides . . . . Second place should be given to oil . . . .
7 SAN DIEGO L. REV. 574, 579 (1970)

15. Choosing the most important pollutant is, regrettably, more than an academic exercise because of the demonstrated legislative tendency to focus on problems provoking the greatest public outcry to the neglect of others. Oil pollution, admittedly an eyesore, is already subject to a host of legislation. *See* Bond, *The Environmental Law Explosion—A Survey of Anti-Pollution Laws Affecting the Oil Industry*, 26 BUS. LAW. 1039 (1971). Nevertheless, in his article *International and National Regulation of Pollution from Offshore Oil Pollution*, 7 SAN DIEGO L. REV. 541, 558 (1970), Krueger observed:
Compared to other forms of pollution the oil spill resulting from offshore drilling is one of the most observable and traceable, yet one of the least permanently degrading to the environment. Compare in this regard the effect of the discharge of hard pesticides into the ocean which result in irreversible damage to some wildlife by means and through sources which are not readily observable or subject to being brought to account.

16. ENVIRONMENTAL QUALITY, *supra* note 13, at 237.

17. For example, excessive mercury was found in a stuffed fish preserved in New York in 1927. MERCURY POLLUTION CONTROL, *supra* note 7, at 12.

discovery that methylmercury crosses the placental "barrier" and achieves a 30% higher concentration in fetal blood cells than those of the mother[18] has led to speculation linking mercury to many generations of birth defects.[19]

B. *The Rate at Which the Problems Are Going to Increase in Magnitude and Intensity Over the Next Few Years*

> There are several types of substances for which no adequate control authority exists and for which a total environmental approach is lacking. Existing authority . . . is not adequate to deal with such substances because they are present not only in our air, water, and soil but in all the products that we consume and use in our everyday lives.[20]

Most forms of pollution are attributable to what may be called "point-sources." For example, oil may come from spills or leaks and pesticides are originally produced in factories.[21] Mercury, on the other hand, is one of the ninety-two naturally-occurring elements,[22] and it enters the environment from many natural as well as man-made sources.[23] In addition to industrial wastes, at least an equal amount of mercury comes from the combustion of fossil fuels.[24] As a constituent of gas and smoke, mercury drifts through the atmosphere until it is washed back to earth by rain. Then, carried by streams and runoff, hundreds of tons of formerly airborne mercury are washed each year into lakes otherwise free from pollution.[25] Other frequently overlooked man-made sources of mercury include thermometers, electrical instruments, dental preparations, paints, and pharmaceuticals.[26]

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18. ENVIRONMENTAL RESEARCH, *supra* note 2, at 12.
19. MERCURY POLLUTION CONTROL, *supra* note 7, at 12.
20. TOXIC SUBSTANCES, *supra* note 12, at 1.
21. Existing Federal Government controls over the introduction of toxic substances into the environment are of two types. The first is control over the initial production of a substance and its distribution. For example, . . . a manufacturer must register a pesticide with the Environmental Protection Agency (EPA) before it can be introduced in interstate commerce.

Id. at iv-v.
22. *Mercury in the Environment, supra* note 1, at 1.
23. *Id.* at 65, Table 26.
24. *See* ENVIRONMENTAL RESEARCH, *supra* note 2, at 27-28, and *Mercury in the Environment, supra* note 1, at 3-4 and Table 16 at 59. Only recently have steps been taken to control the emission of hazardous air pollutants. *See* Pub. L. No. 91-604 for the 1970 amendments to the Clean Air Act, 42 U.S.C. §§ 1857 et seq.
25. *Mercury in the Environment, supra* note 1, at 41. *See also* ENVIRONMENTAL RESEARCH, supra note 2, at 51-52, for a discussion of the global transport of mercury.
26. *See* note 23 *supra.*

Nature herself is a polluter. Industry often points out that mercury pollution also comes from the natural leaching of ore deposits,[27] an explanation for the mercury found in lakes distant from industrial operations.[28] Yet even in this area, man has accelerated natural processes by thoughtless methods of resource exploitation, such as strip mining, which expose new areas to leaching.[29]

Another way that man is interfering with natural processes is by discharging other chemicals and wastes into bodies of water. Through the natural processes described above, a great reserve of insoluble mercury compounds has been deposited at the bottom of every river and lake.[30] However, the build-up of nutrients such as phosphates and sewage has led to an upsurge of bacteria capable of transforming inert, inorganic mercury sediments into the active and dangerous methylmercury. Moreover, certain organic chemicals react with inorganic mercury thereby increasing its mobility and toxicity.[31] Therefore, "[t]he focus must be on a particular pollutant and *all* the pathways by which it travels through the ecosystem."[32] (Emphasis added.)

C. *The Irreversibility of the Damage if Immediate Action is Not Taken*

"[S]ince there is no effective therapy for overt methylmercury poisoning, prevention is the means of control to be emphasized."[33] In other respects as well, mercury pollution is almost irreversible. Attention has

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27. *Mercury in the Environment, supra* note 1, at 2. "Natural leaching" is the process by which rain water percolating down through rocks and earth tends to dissolve and carry away soluble materials.

28. For example, in December 1970, fish taken from Lake George, New York were declared unfit to eat because of mercury although there are no known industrial discharges of mercury into the lake. Natural sources of mercury were suspected. *See* MERCURY POLLUTION CONTROL, *supra* note 7, at 12.

29. The newly-emerging field of deep sea mining threatens to open a Pandora's Box of toxic substances into the oceans. The sea beds contain large amounts of mercury which could be exposed to direct leaching if safeguards are not imposed. *See Mercury in the Environment, supra* note 1, at 57, Table 12. The United Nations General Assembly welcomed and adopted unanimously (119-0) a resolution to deal with pollution which could be caused by exploitation and exploration of the ocean floor. Resolution 2467 B (XXIII). 3 INT'L LAW. 676 (1969).

30. *See Mercury in the Environment, supra* note 1, at 43-44.

31. One such chemical is nitrilotriacetic acid (NTA), once hailed as a biodegradable substitute for phosphate builders in detergents. *See* TOXIC SUBSTANCES, *supra* note 12, at 13. Pressure from the United States Government prompted a temporary withdrawal of the chemical from the market. Washington Post, December 19, 1970, at A-1, col 4. Pressure from phosphate foes has led to a limited reinstitution of NTA.

32. TOXIC SUBSTANCES, *supra* note 12, at 20.

33. ENVIRONMENTAL RESEARCH, *supra* note 2, at 11. However, a natural food product

already been called to the fact that oil is a relatively biodegradable pollutant.[34] Pesticides present problems much more similar to that of mercury. For example, the chlorinated hydrocarbons exemplified by DDT, like mercury, have permeated the marine environment, concentrated in the food chains, and are now found in almost all living tissue. What has provoked alarm about pesticides is the dual threat they pose. Not only are they slowly excreted by the body,[35] they also persist in the environment for decades. The Council on Environmental Quality noted that ". . . present information indicates that DDT can remain toxic for at least 20 years," then added significantly, "[p]esticides based on toxic, inorganic elements such as mercury, lead, and arsenic are virtually *permanent.*"[36] Mercury may change back and forth between the toxic, organic methylmercury and the less toxic inorganic compounds and free metal, but it never degrades into a totally harmless form.[37] In addition, regarding the mercury already in our waterways, it was observed that:[38]

> Decontamination through natural processes is extremely slow and, considering the large volumes of mercury contained in some bottom sediments, it is quite conceivable that some waters will remain contaminated for 100 years or more.

Neither oil nor DDT can make this claim.

D. *The Measure of the Benefits to Society Compared to the Cost of Taking Action*

Application of this fourth criterion is difficult for any form of pollution. The danger of contaminating marine food supplies for centuries to come does not lend itself to a cost-benefit analysis. However, a

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has been developed which, if eaten together with contaminated fish, can help eliminate mercury from the human system. Interview with Dr. André Danesh, January 6, 1972, Boston, Mass.

34. *See* note 15 *supra*. It must be remembered, though, that the threat of oil pollution to delicate Arctic regions is much more critical.

35. By way of comparison: "The slow rate of elimination of methylmercury . . . has been demonstrated in both fish and man . . . ." ENVIRONMENTAL RESEARCH, *supra* note 2, at 5.

36. ENVIRONMENTAL QUALITY, *supra* note 13, at 132.

37. "A characteristic feature of heavy metal pollution is its persistence in time as well as in space for years after the pollutional operations have ceased." WATER QUALITY CRITERIA, *supra* note 12, at 84.

38. ENVIRONMENTAL RESEARCH, *supra* note 2, at 26.

promising feature of mercury pollution is that it is a valuable waste which can often be economically recovered.[39] "[A] variety of byproduct recovery schemes have made it possible for many industries to trim mercury losses from hundreds of pounds per day to 1 pound per day or less."[40]

Even where mercury can not be economically recovered, it is frequently linked to another form of pollution in such a way that a marginal cost increase could eliminate both. An example is the exhaust emissions from the combustion of fossil fuels.[41] Consider also the bacteria situation where eliminating the first-stage problem, the nutrients, would undoubtedly moderate the second-stage problem, the bacterial conversion of the inert compounds to methylmercury. Little more than a slight cost increase could eliminate many of these principal sources of mercury pollution and spare the world its crippling effects.

III

Toward A Solution

Despite its belated concern over mercury pollution, the United States has made great progress. Disappointingly, these efforts have been largely confined to the United States.[42] While calling for an international agreement on marine pollution, the United States has eschewed approaches of broad scope and consequence that could lead to such an agreement. An isolationist policy can no more protect the United States from pollution than it did from two world wars. With these considerations in mind, the following measures are proposed:

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39. Toxic Substances, *supra* note 12, at 17.

40. *Mercury in the Environment, supra* note 1, at 4. At current market prices, recovery of mercury wastes could save United States industries alone over 100 million dollars a year.

41. "In the future we may have to look to fuels with low concentrations of highly toxic metals just as we look to low-sulfur fuels today." Toxic Substances, *supra* note 12, at 16.

42. Existing legal controls include: The Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §§ 135-135k; the Federal Water Pollution Control Act, 33 U.S.C. §§ 466 et seq.; the Clean Air Act, 42 U.S.C. §§ 1857 et seq.; the Solid Waste Disposal Act, 42 U.S.C. §§ 3251-59; the Resource Recovery Act, 84 Stat. 1227 (1970); and the Hazardous Substances Act, 15 U.S.C. §§ 126-173. *See* Toxic Substances, *supra* note 12, at 17-22. However, "[i]t is clear that current laws are inadequate to control the actual and potential dangers of toxic substances comprehensively or systematically." *Id.* at 20.

A. *Enactment of Effluent Standards*

Of four primary approaches to water pollution,[43] only a system of effluent standards can eliminate heavy metal pollution. The widely used "stream standards" approach, which focuses on the total quantity of a pollutant in a stream and not on the amount coming from a specific source, is simply unable to cope with a pollutant present in trace amounts and which may be precipitated, chemically complexed, organically assimilated, or otherwise removed from the stream water (but not the active environment) before detection is possible. Yet, yielding to industry pressure, Congress has rejected "effluent standards."[44] The United States has so far been able to combat mercury pollution only by construing the Refuse Act[45] so as to impose *de facto* effluent standards on the *de jure* stream standards. This much-criticized procedure[46] has achieved only piecemeal success at home and can not be influential abroad.[47]

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43. The four approaches are: 1) *stream standards*—a "safe" pollution level for each stream and each pollutant is pre-established with contributors divying up the allotments like spoils of war; 2) *effluent standards*—a realistic maximum concentration for each pollutant in an industrial discharge is set, according to available technology; 3) *subsidies approach*—no minimums or maximums but offers by the government to share the costs of pollution control are expected to encourage moral and social consciousness; 4) *effluent charges*—a pollution tax which promotes demand for talented economists able to compute the pollution level that maximizes profits. *See* Haskins, *Towards Better Administration of Water Quality Control,* 49 ORE. L. REV. 373, 376-392 (1970). Though the federal government has focused on stream standards, individual states and foreign countries use various combinations of all four.

44. The Federal Water Quality Control Act of 1965, 79 Stat. 903, originated with a bill by Senator Muskie calling for dual effluent and stream standards. *See* S. 649, 88th Cong., 1st Sess., sec. 4 (1963). The effluent standards were deleted from the final act and, also, from more recent amendments.

45. Rivers and Harbors Act of March 3, 1899, sec. 13, now 33 U.S.C. § 407 (1970):

> That it shall not be lawful to throw, discharge, or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited either from or out of any . . . manufacturing establishment, or mill of any kind, any refuse matter of any kind or description whatever other than that flowing from streets and sewers and passing therefrom in a liquid state, into any navigable water of the United States . . . .

46. The Refuse Act Permit Program, authorized by Exec. Ord. No. 11574, 35 Fed. Reg. 19627 (1970), has never received explicit Congressional support. Clearly the Refuse Act was not intended for pollution control except as might jeopardize navigation, and at least one lawsuit now pending seeks to invalidate the permit scheme. *See* ENVIRONMENT REPORTER, CURRENT DEVELOPMENTS at 303 (July 1971).

47. The United States is a model for many countries. Any action it takes or fails to take is mirrored in others, and the effect is magnified by the concept of "reciprocity" which pervades international law. Some of the consequences of "reciprocity doctrine" are discussed at note 63 *infra* and in section III (E) of the text.

Preliminary to encouraging others to adopt effluent standards is obtaining a Congressional stamp of approval in the United States.[48]

B. *Establishment of a Technological Review Board*

Since only the most radical ecologists seriously espouse a return to a Stone Age standard of living, the key to fighting pollution, especially mercury pollution, is development of new techniques, machines, and materials to safely replace the offending ones. Thus, in preface to his compilation of mercury pollution controls, H. R. Jones notes that "[t]he patent literature is a prime source of basic commercially utilizable information."[49] But the patent system has failed to live up to its potential. First, patent literature may not be, per se, "utilizable." The inherent vice of the patent system is the grant of a legal monopoly excluding competitors for seventeen years.[50] Through corporate-financed research and the device of exclusive licensing,[51] a corporation is able and often finds it advantageous to monopolize an important discovery.[52] The question is, can the environment afford to wait seventeen years for the invention to be fully implemented?[53]

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48. Plans are once again afoot in Congress to pass effluent water standards comparable to the emission standards of the Clean Air Act of 1970, *supra* note 24. This time favorable action seems likely. The Senate Public Works Committee has approved an appropriate amendment to the Federal Water Pollution Control Act, 33 U.S.C. §§ 1151 et seq. CONGRESSIONAL RECORD at D 1046 (daily ed. Oct. 19, 1971).

49. MERCURY POLLUTION CONTROL, *supra* note 7, at iii.

50. The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . . .

United States Constitution, Art. I, § 8 (8). The term of the patent grant is set by 35 U.S.C. § 154 (1970).

51. Exclusive domestic patent licensing is sanctioned by 35 U.S.C. § 261 (1970).

52. A recent example of such abuse concerns enzyme detergents. In simple mixtures, the fine enzyme powder settled on skin and clothes when the detergent was being poured and caused rashes and other allergic reactions. Then a major detergent manufacturer obtained a patent on a process which safely bound enzyme particles to the heavier detergent granules. Competitors continued to use the troublesome blends. In a surprising move only six months later, the corporation dedicated to the public the remaining term of this valuable patent. *See* 876 O.G. PAT. OFF. 595 (1970). Presumably, the health hazard prompted FTC officials to intercede under the Federal Trade Commission Act, 15 U.S.C. § 45 (1970), and the detergent maker chose not to litigate and risk further loss of public face after the phosphate controversy.

In appropriate cases, a federal court may order compulsory or even royalty-free licensing (or its equivalent by refusing patent enforcement) premised on antitrust violations. *See, e.g.,* United States v. National Lead Co., 332 U.S. 319 (1947). More often, in the environmental context, patent misuse goes unnoticed and unremedied.

53. In theory, availability of a patent disclosure leads others to improvements over

Even when technology is available, vested interests may stymie the development and implementation of anti-pollution devices. For example, in 1969, the Department of Justice instituted proceedings against every major United States automobile manufacturer charging conspiracy extending over a decade to delay development of pollution control devices in violation of antitrust laws.[54] Later that year, the Department agreed to a settlement based on a consent decree that the manufacturers would refrain from obstructing the development of anti-pollution devices and would grant royalty-free patent licenses to all companies seeking to use any relevant discoveries.[55] Nevertheless, United States auto manufacturers continue to balk at meeting the 1975 clean air standards although some Japanese auto makers expect to produce pollution-free cars for 1972.[56]

A further abuse of the patent system is the routine granting of patents for inventions potentially threatening to the environment, possibly contrary to existing law.[57]

One solution to this type of problem would be the creation of a Technological Review Board, perhaps under the auspices of the existing Council on Environmental Quality, to review patent applications for their potential environmental impact. The Board could enter a "Suggestion of Non-patentability," subject to challenge, for those discoveries posing a serious environmental threat,[58] and make "Special" those ap-

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the original discovery. However, a license to the original patent may well be a prerequisite to exploiting any improvement since a patent grants the inventor only the right to exclude others and not necessarily the right to use it himself. 35 U.S.C. § 154 (1970).

54. N. Y. Times, Jan. 11, 1969, at 1, col. 3.

55. N. Y. Times, Sept. 12, 1969, at 1, col. 2. The district judge's approval of the consent decree raised protests from a score of cities, states, and individuals including forty-six members of Congress. N. Y. Times, Oct. 29, 1969, at 28, col. 1.

56. N. Y. Times, Aug. 18, 1970, at 70, col. 5.

57. Whoever invents or discovers any new and *useful* process, machine, manufacture, or composition of matter, or any new and *useful* improvement thereof, may obtain a patent therefor. . . . (emphasis added.)

35 U.S.C. § 101 (1970). "Useful" in this context was early construed by Judge Story to exclude inventions which are ". . . frivolous or injurious to the well-being, good policy, or sound morals of society . . . For instance, a new invention to poison people . . . is not a patentable invention." Lowell v. Lewis, 15 Fed. Cas. 1018, 1019 (Fed. Cas. No. 8568) (Cir. Ct., D. Mass., 1817). Sec. 102(2)(c) of the National Environmental Policy Act of 1969, 42 U.S.C. § 4332 (1970), reinforces the argument that the Patent Office is already obliged to consider the environmental effects before granting a patent.

58. Although refusal of a patent would not foreclose the use of a detrimental invention, lack of protection from competitors might discourage extensive investment to implement the invention and eventually discourage research on inventions which could not gain patent protection.

plications potentially beneficial to the environment.[59] Whenever such an application matured into a patent, the Board would again review it to determine if the discovery were of such environmental importance as to warrant assurance that it be generally available. If so, the Board would have power to take the necessary steps.[60]

The recent signing of an International Patent Cooperation Treaty,[61] establishing unitary processing for all applications submitted under the program, opens the door to eventual world-wide application of these procedures.

C. *Legitimation of AID Efforts to Control Pollution in Host Countries*

The United States, through its foreign aid program, is one of a few nations able to exert substantial influence on developing countries to observe pollution controls. Congress has never sanctioned such interference with internal state affairs; however, under guise of authority from

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59. Present Patent Office procedure leaves it to an applicant's discretion to request priority processing for his application based on allegations of environmental importance. *See* 871 O.G. PAT. OFF. 673 (1969).

60. Current patent laws suggest, by analogy, two approaches to insuring availability and implementation of specially designated inventions. Congress could authorize the Board to impose compulsory licensing at a reasonable royalty. *Cf.* United States v. National Lead Co., *supra* note 52. Congress has already adopted similar measures in the field of air pollution. *See* 1970 Clean Air Amendments, 42 U.S.C. § 1857 (h) (6). However, this provision has been criticized as representing the worst of three alteratives. *See* Schwartz, *Mandatory Patent Licensing of Air Pollution Control Technology*, 57 VA. L. REV. 719, 743 (1971).

Alternatively, the Government could preempt patent rights for just compensation and dedicate the remaining patent term to the public, 35 U.S.C. § 253 (1970). Suggestive of the latter course are 35 U.S.C. §§ 181, 183, which provide for inspection of applications and appropriation by the Government of patents deemed relevant to the national security. A solution along these lines has also been criticized, but with the acknowledgment that: "The primary strength of this system lies in the fact that it permits maximum utilization of existing technology." Schwartz, *supra*, at 743.

It is not believed that these procedures would promote surreptitious behavior on behalf of inventors. The court in Painton & Co. v. Bourns, Inc., 442 F.2d 216, 224 (1971), said:

> We think it rather fanciful to assume that [where the inventor believes he has a validly patentable invention] there will be substantial withholding of patent applications in favor of trade secret agreements. A licensee will not pay as much . . . the secret may leak . . . [t]he inventor will forfeit his rights to ever get a patent.

See also the dissenting opinion of Justice Black in Lear v. Adkins, 395 U.S. 653 (1969). Black believed that federal patent law preempted the field rendering private trade secret agreements unenforceable under state law.

61. International Patent Cooperation Treaty, signed at Washington, D.C., June 19, 1970. *See* 876 O.G. PAT. OFF. 374 (1970).

the National Environmental Policy Act of 1969,[62] the Agency for International Development (AID), charged with administering United States' foreign aid, has, on its own, undertaken investigations into the environmental impact of projects and conditioned assistance on satisfactory compliance.[63] Although these measures have not been directly attacked at home, Assistant Secretary of State Christian R. Herter, Jr., has at least raised doubts as to the propriety if not the legitimacy of some of AID's actions.[64] Herter seems to see a narrow role for AID in internal environmental affairs, with the agency limited to proffering advice on potential dangers and education on how to avoid them, leaving to the host State the ultimate decision of whether to heed these exhortations.[65] This

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62. The Congress authorizes and directs that, to the fullest extent possible . . . (2) all agencies of the Federal Government shall . . . (E) recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment . . . .

National Environmental Policy Act of 1969, 42 U.S.C. § 4332 (1970).

63. These activities have encompassed plans for the Aswan Dam in Egypt, pesticide distribution in Pakistan, and construction of a steel mill in Turkey. In Pakistan, the receipt of pesticides was conditioned on distribution only by qualified and licensed personnel. The first steel mill to be built in Turkey was situated on a hill and, due to prevailing winds, threatened to spew noxious fumes and soot on a pleasant coastal village below. Only after considerable bickering was AID able to persuade the Turkish government to build the four hundred-fifty foot smoke stack considered necessary to insure that the fumes were carried elsewhere. It is notable that one of Turkey's principal arguments was that such standards had been exacted of no steel mill in the United States—one example of the "reciprocity doctrine" hindering United States efforts abroad. Interview with Harry R. Sachse, formerly attorney with AID, August 5, 1971, Washington, D.C.

64. 2. The operating procedures established by section 102 of the National Environmental Policy Act (P.L. 91-190) will be applicable to very few actions of State and AID because the actions affecting the environment in which our agencies participate, directly or indirectly, almost always occur within the territorial jurisdiction of some other State. As set forth in the attached Legal Memorandum, we do not interpret these procedures as applying to such actions.

Department of State Memorandum from Christian A. Herter, Jr., to Russell Train, Chairman, Council on Environmental Quality, May 4, 1970. [1971 Transfer Binder] ENVIRONMENTAL LAW REPORTER, STATUTORY AND ADMINISTRATIVE MATERIALS 46039-46041.

65. 3. *The Role of AID*

. . . .

. . . AID has two primary types of responsibilities in this regard:

To assist in strengthening the indigenous capabilities of the host country to evaluate the impact of the physical and biological environment of potential development projects, and the consequences of attendant ecological changes; and

To insure that the environmental consequences of proposed projects are carefully considered by AID and the host country prior to decisions on carrying out the project.

Id. at 46040.

can only undermine AID's effectiveness in bargaining with already reluctant host countries. So important an exercise of United States paternalism should not hang by so slender a thread. Some administrative guidelines might be desirable to protect against overzealous demands on foreign countries, but the authority of AID to refuse funding to projects harmful to the environment should be affirmed by appropriate amendment of the National Environmental Policy Act[66] and the Foreign Assistance Act.

This philosophy should not be limited to a national agency such as AID. For some time there have been proposals for replacing AID with a jointly administered international organization to help share the burdens of foreign assistance.[67] In fact, a major part of President Nixon's program for establishing a regime for the deep sea bed is to set aside a part of the profits from the mining of deep sea resources for assistance to under-developed countries as an inducement for their cooperation in the plan.[68] A sudden and uncontrolled influx of funds to countries anxious to improve their living standards could bring about the opposite result. A foreign aid organization, whether national or international, must be able to scrutinize every project it finances.

D. *Enforcement of Controls Over Domestic Corporations Abroad*

Ever-expanding United States' foreign investment can become another handhold by which American environmental policy is given transnational effect. In particular, domestic corporations doing business abroad are vulnerable to regulation. Why, for instance, should the Canadian branch of a United States chemical company be able to dump mercury wastes into Lake Erie while its plant just across the lake in Ohio is under a federal court injunction? Similarly, should a corporate division in France have more leeway to pollute the Atlantic than does the principal office in New Jersey? These questions are deceptively simple since the exercise

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66. Questions and criticism have come from many corners regarding the scope of NEPA. On October 7-8, 1971, in an address before the National Institute on the Law of the Environment, Harry H. Voight, assistant to the chairman of the Federal Power Commission, observed that NEPA ". . . is woefully ambiguous as it relates to the work of independent regulatory agencies . . . ." and should be revised. 2 ENVIRONMENT REPORTER, CURRENT DEVELOPMENTS 695 (October 1971).

67. *See, e.g.*, Editorial, N. Y. Times, Nov. 1, 1971, at 40, col. 2.

68. *See* U.S. Ocean Policy, Statement by President Nixon, May 23, 1970, ENVIRONMENT REPORTER, FEDERAL LAWS 21:0251.

of "jurisdiction" in international law raises many perplexing problems. "Adjudicatory jurisdiction" would pose no problems,[69] but in addition the home corporation would have to be brought within one of the five bases of "legislative jurisdiction" recognized in international law.[70] For a corporate division merely doing business in a foreign country, sanctions for violations of United States pollution laws which are accorded transnational effect[71] would be clearly sustainable under the nationality principle.[72]

More intriguing is the question of the foreign subsidiary wholly owned and controlled by a domestic parent corporation. Absent some type of fraud, American courts have characteristically refused to pierce the "corporate veil" of a subsidiary and look to the true corporate identity,[73] an act preliminary to finding American nationality and attaching jurisdiction on the nationality principle. This would relegate the courts to

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69. "Adjudicatory jurisdiction" in international law is analogous to traditional notions of *in personam* and *in rem* jurisdiction in domestic law, and its exercise usually depends on finding the individual or his property within the country's territorial limits. *See* H. STEINER and D. VAGTS, TRANSNATIONAL LEGAL PROBLEMS 642 (1968). This would be easy enough, of course, for a domestic corporation which is considered to be domiciled in the state of incorporation.

70. The five bases are: 1) the territorial principle; 2) the nationality principle; 3) the protective principle; 4) the universality principle; and 5) the passive personality principle. *See* Harvard Research on International Law, *Jurisdiction With Respect to Crime*, 29 AM. J. INT'L L. 435, 445 (Supp. II 1935). As contrasted with "adjudicatory jurisdiction", "legislative jurisdiction" delimits the extent to which municipal law can be held to govern the acts of an individual.

71. Independent of any questions of jurisdiction is the problem that not all municipal laws will be accorded transnational effect. Absent an express Congressional intent to extend United States' anti-pollution laws extra-territorially, their application to foreign subsidiaries would require a judicial finding that these laws are among those for which ". . . Congress has not thought it necessary to make specific provision in the law that the *locus* shall include the high seas and foreign countries, but allows it to be inferred from the nature of the offense." United States v. Bowman, 260 U.S. 94, 98 (1922). The defendants in *Bowman* were convicted of conspiracy to defraud a corporation in which the United States was a stockholder, a far cry from violating a more logically territorial pollution law.

72. *See* Blackmer v. United States, 284 U.S. 421 (1932). The defendant was adjudged guilty of contempt of court when he failed to respond to a subpoena served on him in France. In affirming, Chief Justice Hughes emphasized the degree of control a country retains over its nationals abroad. This has been strikingly demonstrated recently by the various economic controls enacted by Congress over American-owned foreign corporations in the fields of antitrust, income tax, foreign investment, and exports. *See, e.g.*, H. STEINER and D. VAGTS, *supra* note 69, at 1000-1006, for a discussion of the effects of the 1962 Internal Revenue Act on controlled foreign corporations. *See also* Regulations pursuant to the Foreign Direct Investment Act, 15 C.F.R. §§ 1000.201, 1000.503, and 1000.504, and the Trading With The Enemy Act, 31 C.F.R. § 500.329—"Person subject to the jurisdiction of the United States."

73. Illustrative of this point is the case of Behn Meyer & Co. v. Miller, 266 U.S.

attaching jurisdiction on the basis of either the protective or the passive personality principles, both less generally accepted than the nationality principle.[74] Legislative jurisdiction in either case would turn on proof of some direct and substantial injury to the United States or its citizens, which might be possible in the case of the Canadian subsidiary polluting Lake Erie, but nearly impossible for the French subsidiary polluting the Atlantic.[75]

The problem is compounded when the foreign subsidiary is not wholly owned by the domestic corporation, although this fact alone may not precude an American court from finding United States nationality for the subsidiary if there is sufficient control by the domestic corporation.[76] A further stumbling block will be finding a way to monitor the

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457 (1925), where the Supreme Court maintained that the place of incorporation determines the nationality of the corporation despite the fact that in this case all of the shareholders were enemy aliens. The doctrine, in this narrow category of cases, was expressly reversed by act of Congress during World War II. Trading With The Enemy Act, 50 U.S.C. App. § 1, as amended by the First War Powers Act of 1941, 55 Stat. 839. *See generally* Kronstein, *The Nationality of International Enterprises,* 52 COLUM. L. REV. 983 (1953). Civil law countries, on the other hand, give more weight to the head office or seat of business, e.g. the French *siège social,* than to place of incorporation. *See* H. STEINER and D. VAGTS, *supra* note 69, at 61-62, for a discussion of the various factors courts have given weight in determining corporate nationality. It should be noted, however, that nationality is usually decided in the context of choice-of-law problems, and the same considerations will not necessarily control jurisdictional questions.

74. *See* Harvard Research, *supra* note 70. *But cf.* Case of the S.S. "Lotus," P.C.I.J., Ser. A, No. 10 (1927). In this famous case, the Permanent Court of International Justice upheld the right of a Turkish court to try and convict of involuntary manslaughter a French national, the officer of watch aboard the "Lotus," following a collision with a Turkish collier on the high seas off the coast of Turkey in which eight Turkish nationals lost their lives.

75. As the principle of the interdependence of nations in protecting the Earth's ecology gains acceptance, the more persuasive will become the exercise of jurisdiction in pollution cases founded on the protective and passive personality principles.

76. *See, e.g.,* Société Remington Typewriter v. Kahn, 1936 Dalloz Juris. I 121 (Cour de Cassation, France, May 12, 1931) as cited in H. STEINER and D. VAGTS, *supra* note 69, at 65. Abandoning the customary rule of law, the court held that although the subsidiary was incorporated in France with its *siège social* in Paris, the controlling factors in determining nationality were that 16/18ths of its capital contributions were by "the great American company of the same name" and that the board of directors was composed exclusively of Americans. In the United States, the Treasury Department, at least, has not been as rigid as the courts in determining corporate nationality and has taken the view that as little as 40% ownership by a United States corporation can be sufficient "control" of a foreign company to bring it within the regulations promulgated under authority of the Trading With The Enemy Act. *See* Berman and Garson, *United States Export Controls—Past, Present, and Future,* 67 COLUM. L. REV. 791, 871 (1967). For example, in a widely-publicized case in 1957, the Treasury Department demanded that Ford Motors require its Canadian subsidiary to repudiate a contract with Communist China which called for exports from Canada contrary to American laws. *Id.* at 868. *See also* Haight, *United States Controls Over Strategic Transactions,* 1965 U. ILL. L. F. 337.

foreign industries, and cooperation with the foreign state will probably be necessary. Clearly this will not be an easy program to make operational, but as American industry continues to expand into developing countries eager for prosperity, even with the attendant pollution costs,[77] a way to restrain the harmful effects will become increasingly important to the world environment.

E. *Reconsideration of the Connally Reservation*

With increased attention being given to international approaches to pollution, now is an appropriate time to step back and consider to what extent the United States will be able to enforce any international standards that may emerge from the current activity.[78] The widely-criticized "Connally Reservation" to the United States Declaration[79] under Article 36 (2) of the Statute of the International Court of Justice[80] has already cost the United States valuable foreign claims and may likewise cost

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77. Developing countries ". . . would like to first enjoy the benefits of industrialization and technology before they begin to control its deleterious aspects." Krueger, *International and National Regulation of Pollution from Offshore Oil Pollution,* 7 SAN DIEGO L. REV. 541, 553 (1970).

78. Several conventions relating to oil pollution of the high seas already exist. *Id.* The United States has prepared a Draft Convention on Ocean Dumping. *Infra,* note 102. In June, 1972, a worldwide conference on human environment will be convened in Stockholm, Sweden; and, the United Nations has called a new conference on the law of the sea for 1973. *Infra,* note 99.

79. . . . the United States of America recognizes as compulsory *ipso facto* and without special agreement, in relation to any other State accepting the same obligation, the jurisdiction of the International Court of Justice in all legal disputes hereafter arising concerning treaties and questions of international law *Provided,* that this declaration shall not apply to . . . (b) *disputes with regard to matters which are essentially within the domestic jurisdiction of the United States of America as determined by the United States of America* . . . . [1965-1966] I.C.J.Y.B. 67 (emphasis added). The Connally Reservation was clearly intended to give the United States the prerogative to retain control of a case when it was in its best interests to do so. However, the reservation of self-determination of jurisdiction is considered one of the two most serious affronts to the power of the Court. *See* I. SHIHATA, THE POWER OF THE INTERNATIONAL COURT TO DETERMINE ITS OWN JURISDICTION (1964) at 154. In 1964, of 147 countries that had made Declarations under Article 36(2) of the I.C.J. Statute, only Liberia, Mexico, the Sudan, the Republic of South Africa, and the United States retained the self-determination reservation. *Id.* at 382, Appendix VII, No. 6(B).

80. 59 Stat. 1055 (1945), T. S. No. 993, *as amended,* 16 U.S.T. 1134, T.I.A.S. No. 5857. Article 36(2) reads:

The states parties to the present Statute may at any time declare that they recognize as compulsory *ipso facto* and without special agreement, in relation to any other state accepting the same obligation, the jurisdiction of the Court in all legal disputes concerning [treaties and questions of international law].

the United States the chance to ever play a major role in enforcing international pollution standards before the World Court.[81]

The reservation of matters within a country's "domestic jurisdiction" in an Article 36 (2) Declaration is not unusual — the United Nations Charter excludes such matters from the Court's jurisdiction even absent an express reservation[82] — but the further reservation by the United States of the right to make its own determination of what constitutes "domestic jurisdiction" directly contravenes Article 36 (6) of the I.C.J. Statute which reserves to the Court the right to determine its own jurisdiction.[83] Among the judges of the Court, four philosophies are discernible regarding the effect of such a conflict.[84] The "absolutist" or "strict consent" approach espoused by Judge Lauterpacht in the *Norwegian Loans* case[85] would strike the Declaration as a total nullity. A less consent-oriented school of thought would strike only that portion of the Declaration which raised the conflict, namely, the self-determination clause.[86] A third approach is to hold the country which made the Declaration to a standard of good faith in determining "domestic jurisdiction."

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81. Of course, an Article 36 (2) Declaration is not the only way to invoke the I.C.J.'s contentious jurisdiction. *Ad hoc* jurisdiction may be conferred on the Court under Article 36 (1) by means of a *compromis* or special agreement of the parties. *See* SHIHATA, *supra* note 79, at 127. However, a polluting country clearly in the wrong would not be expected to consent to such an agreement. Another means of creating *continued* jurisdiction of the Court is the use of a "compromissary clause" in treaties and conventions, also provided for in Article 36 (1). *See also* Articles 35 (2) and 37. In the past, these agreements to submit all disputes involving the treaties to compulsory I.C.J. resolution have been almost as important as mutual Declarations as a source of jurisdiction. SHIHATA, *supra* note 79, at 309, Appendix I. A recent development in treaties and conventions is the increasing use of an optional protocol with respect to compulsory I.C.J. jurisdiction to encourage more signatures and ratifications of the principal document. *See, e.g.*, UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA (1958), containing the four 1958 Geneva Conventions and an optional protocol. In addition, the United States has attempted to attach Connally-type reservations to the compromissary clauses in some treaties. *See* Bishop & Myers, *Unwarranted Extension of Connally-Amendment Thinking*, 55 AM. J. INT'L L. 135 (1961). The usefulness of compromissary clauses as an alternate basis for I.C.J. jurisdiction is, therefore, severely limited.

82. *See* Article 2 (7) of the United Nations Charter, 59 Stat. 1031 (1945), T. S. No. 993.

83. "In the event of a dispute as to whether the Court has jurisdiction, the matter shall be settled by the decision of the Court." Statute of the I.C.J., Article 36 (6).

84. *See* SHIHATA, *supra* note 79, at 284-294.

85. *See* Case of Certain Norwegian Loans, [1957] I.C.J. Rep. 9, for the separate opinion of Judge Lauterpacht.

86. "This Declaration consists of two parts, acceptance of the Court's jurisdiction and reservations to that acceptance. Those two elements of a single judicial act are separable. Nothing justifies us, when reading the text, in considering them as an indivisible whole." Dissenting opinion of Judge Armand-Ugon in the Interhandel Case, 1959 I.C.J. REP. 6, 91.

The fourth view, which implicitly received majority support from the Court in the *Norwegian Loans* case, is to accept the Declaration on its face, but subject to the condition of Article 36 (2) "reciprocity"[87] on the part of other countries.[88] Even if the fourth and most liberal approach continues to command a majority of the Court, in any action by the United States before the I.C.J. to enforce pollution standards against another country based on mutual Article 36 (2) Declarations, the country charged could invoke "domestic jurisdiction" based on the United States' Declaration to strip the Court of jurisdiction, no matter how arbitrary the determination was.

The most seriously considered reform proposal to date has been amending the Connally Reservation to the effect that United States determinations of "domestic jurisdiction" would not be made capriciously or in bad faith.[89] For example, in its initial arguments in the *Aerial Incident* case,[90] the United States contended that a "good faith" determination was implicit in the Connally Reservation; thus, Bulgaria's reciprocal invocation of the Connally Reservation could not be arbitrary. Whether an express amendment of the Connally Reservation would improve the United States' position in the eyes of other countries and before the I.C.J. in a Bulgaria-type case is uncertain. What it might not do is give the United States standing to prosecute many important environmental issues before the Court, because the decision that territorial pollution is within domestic jurisdiction will frequently be too borderline to be called arbitrary. Consider, for instance, three cases where the United States is the offender:

1. The United States is disposing of toxic nerve gas by dumping cannisters into the Gulf Stream *outside* territorial waters. Great Britain complains that if the cannisters corrode and rupture, the gas may be swept to the British coast. Here, it would clearly be arbitrary for the United

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87. Article 36(2) "reciprocity" derives from the phrase "in relation to any other state accepting the same obligation." *Supra,* note 80. This automatically conditions a Declaration to give the declaring country, as a defense, the benefit of any reservations in the Declaration of the country bringing the action. This should be distinguished from the "reciprocity" clause of Article 36(3) by which a country may condition its Declaration to be ineffective until certain other states have made similar Declarations.

88. *See* SHIHATA, *supra* note 79, at 293 n.2.

89. *See* Schlesinger, *The Connally Amendment—Amelioration by Interpretation?*, 48 VA. L. REV. 685, 696 (1962).

90. Aerial Incident of July 27, 1955, [1959] I.C.J. Pleadings. The United States withdrew the "good faith" contention before the Court decided the issue, although it meant certain loss of a valuable claim.

States to assert "domestic jurisdiction," and, based on the amended Connally Reservation, the Court could dismiss the plea and hear this case on the merits.

2. An Ohio municipality is dumping sewage into an Ohio river which carries it to Lake Erie causing eutrophication damaging to Canadian fisheries and recreational areas. The objectionable activity has its situs in the United States, generally a firm basis for claiming "domestic jurisdiction," but the causal relation is clear and the injury to Canada is direct. The doctrine of the *Tunis-Morocco* case might support a finding by the Court that this was ". . . a matter which, by international law, is, in principle, solely within the domestic jurisdiction of one Party, but [is] of a nature to preclude in the particular case such exclusive jurisdiction."[91] This conclusion is buttressed by the dicta of the Supreme Court of the United States in *Ohio v. Wyandotte Chemicals Corp.* that a similar dispute involving mercury pollution was better suited for resolution by the International Joint Commission[92] than a national court.[93]

3. A United States corporation in Maine is dumping mercury wastes into the Penobscot River, which empties into the Atlantic, contaminating the valuable North Atlantic fisheries shared by Canada, Iceland, Great Britain, Russia, and others. Yet, the injury here is not so direct nor the cause so clear. Although the I.C.J. might have held there was no "domestic jurisdiction" under the *Tunis-Morocco* doctrine if it were examining the case *de novo,* on review of the United States determination, like a federal court of appeals limited in reviewing questions of fact, the I.C.J. may not be able to find the "clearly erroneous" decision necessary to overrule the United States. If the United States could exclude itself from suit in this common type of water pollution offense, so could others gain immunity from actions by the United States under the "reciprocity doctrine."

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91. Tunis-Morocco Nationality Decrees, [1923] P.C.I.J., Ser. B, No. 4.

92. The International Joint Commission was established by the Boundary Waters Treaty of 1909 between the United States and Canada to resolve disputes regarding the use of boundary waters and the rights of either state along their common frontier. 36 Stat. 2448, T.S. No. 548. *See generally* L. BLOOMFIELD and G. FITZGERALD, BOUNDARY WATER PROBLEMS OF CANADA AND THE UNITED STATES (1958).

93. Ohio v. Wyandotte Chemicals Corp., 401 U.S. 493 (1971).

Two recent developments emphasize the need for the United States to unfetter itself before the World Court, at least with respect to environmental issues. First is the trend toward countries claiming and obtaining recognition of increasingly broad territorial seas. Despite the lack of a consensus sufficient to establish an international accord at the 1930 Hague Convention, until the Truman Proclamation of 1945, it was fairly well agreed that a coastal state was entitled to claim up to three miles from its low tide mark as territorial seas.[94] The Truman Proclamation was only a statement of United States policy regarding the continental shelf, and probably then no more than a codification of already accepted international principles,[95] but it triggered an era of increasingly ambitious claims by coastal states to the adjacent ocean. The 1958 Geneva Convention, which produced four major conventions on the oceans,[96] proved a hopeless deadlock on the issue of territorial waters. The United States still argued for three miles. The Soviet Union and the Arab states opted for twelve, while some Latin American states asserted exclusive rights to 200 miles of ocean.[97] A new convention especially called in 1960 had no more success than the earlier one.[98] Since then, more and more states have abandoned the traditional three mile rule. A new conference on the law of the sea has been called for 1973.[99] Although it is unlikely that anything so radical as a 200-mile territorial limit will be agreed upon, the old rule is certainly dead.

With respect to the environment, this need not be a bad thing. The South American countries originally justified their 200-mile claim by the need to protect their valuable fisheries from foreign exploitation, and Canada premised its establishment of a 100-mile pollution zone in the Arctic on the preservation of that delicate region from oil pollution.[100]

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94. *See* Palmer, *Territorial Sea Agreement—Key to Progress in the Law of the Sea,* 25 JAG J. 69, 70 (1971).

95. The Truman Proclamation specifically provided that: "The character as high seas of the waters above the continental shelf and the right to their free and unimpeded navigation are in no way thus affected." 59 Stat. 884, 10 Fed. Reg. 12303 (1945).

96. UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA (1958).

97. *See* Palmer, *supra* note 94, at 73-74.

98. *See* Dean, *The Second Geneva Conference on the Law of the Sea: The Fight for Freedom of the Seas,* 54 AM. J. INT'L L. 751 (1960).

99. United Nations General Assembly Resolution No. 2750 (Dec. 17, 1970).

100. "The stated legal rationale for the Canadian action is uncomfortably reminiscent of early Latin American justification for 200-mile jurisdictional claims." Palmer, *supra* note 94, at 73. For the Canadian Legislation on Arctic Pollution, Territorial Seas, and Fishing Zones see 9 INT'L LEGAL MAT. 543-52. For the Canadian Prime Minister's Remarks concerning the legislation see 9 INT'L LEGAL MAT. 600-04

However, the potential for unhindered exploitation is always present when a State claims sovereignty over an area to the exclusion of all other States' interests. For example, the 1970 Montivideo Declaration, which formalized the claims of South and Central American countries to 200 miles of territorial sea, although prefaced to show the desire to protect newly-claimed areas, contains in its text language sufficiently ambiguous to sanction offshore pollution by the coastal state.[101] A country which would never consider dumping toxic wastes three miles from its shore where the likelihood of it washing back is great, might readily dispose of the same wastes 200 miles away. If the State could successfully defend a suit by the United States before the I.C.J. on the ground of "domestic jurisdiction" over an act within its territorial waters, dreams like an Ocean Dumping Convention may be a long way off.[102]

The second development is the Canadian precedent of amending its Article 36 (2) Declaration to specifically exclude questions of marine pollution from I.C.J. jurisdiction.[103] This is a strange turnabout for a country which has, without reservation, accepted the compulsory jurisdiction of the World Court since its original Declaration in 1929 before the Permanent Court of International Justice. It was presumably impelled by the fear of an adverse decision before the I.C.J. on its Arctic anti-pollution policies. Nevertheless, by virtue of "reciprocity doctrine," another major power sympathetic to environmental problems has disabled itself before the Court. It is ironic that, if this precedent is followed by others in the name of self-protection, there will be no country left to bring less-responsible states to account.

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101. The States Represented at the Montivideo Meeting on The Law of the Sea... Do Declare, as Basic Principles of the Law of the Sea... The right to *explore, conserve* and *exploit* [the living and natural resources of the waters and continental shelf of the sea adjacent to their territories.] (emphasis added).
9 INT'L LEGAL MAT. 1081-1083 (1970).

102. *See* United States Draft Convention on Ocean Dumping, 10 INT'L LEGAL MAT. 1021 (Sept. 1971).

103. Section 2 (d) of the amended Declaration excludes from compulsory I.C.J. jurisdiction:

> disputes arising out of or concerning jurisdiction or rights claimed or exercised by Canada in respect of the conservation, management or exploitation of the living resources of the sea, or in respect of the prevention or control of pollution or contamination of the marine environment in marine areas adjacent to the coast of Canada.

9 INT'L LEGAL MAT. 598-599 (May 1970). For an analysis see Macdonald, *The New Canadian Declaration of Acceptance of the Compulsory Jurisdiction of the International Court of Justice,* 8 CAN. Y.B. INT'L L. 3 (1970).

However, the Canadian precedent may suggest a corrective course of action for the United States. The United States could amend its Declaration to vest the I.C.J. with authority to determine its own jurisdiction per Article 36 (6) in cases raising substantial environmental issues notwithstanding the Connally Reservation. This procedure would raise problems of what constitutes a "substantial environmental issue" not unlike the "federal question" problem in the United States' courts.[104] However, this problem might still prove a lesser obstacle than would outright repeal of the Connally Reservation.

Conclusion

Mercury is a widespread and dangerous pollution problem, but it is not insoluble. The trouble with mercury pollution is that it can not be isolated. It presents a problem requiring a concerted effort on the part of all nations against all forms of pollution. The United States has shown interest in an international solution to pollution problems, but it should consider those steps it could take at home to pave the way for such an agreement. Some of those steps are: A) enactment of effluent standards; B) establishment of a technological review board; C) legitimation of AID efforts to control pollution in host countries; D) enforcement of controls over domestic corporations abroad; and, E) reconsideration of the Connally Reservation. With mercury pollution, the decisive factor may not be how soon international accord can be reached, but rather, what is done in the interim. If the necessary procedures and machinery could be established in advance by enough countries, with the United States leading as an example, an international agreement would be little more than a formality.

David Silverstein

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104. *See, e.g.*, Gully v. First National Bank, 299 U.S. 109 (1936).