

Butchery at Sea

JANUARY, 1973 — Having crossed the Antarctic Circle, *Calypso* heads south along Adelaide Island, en route to Marguerite Bay. I am on the bridge to make a decision about sending my son Philippe in our helicopter, as our vanguard, to the British station at the southern tip of Adelaide. A wind-force five blows; the sea is agitated. Scattered blocks of ice occasionally oblige us to alter our course. It is three o'clock in the morning. A low-hanging sun showers the scenery with a pristine, unreal pink dye. A cavalcade of huge tabular icebergs files across the horizon. Along the coast, a thick mist rises from the sea. The majestic glaciers and ice-capped mountains of Adelaide emerge from clouds of cold steam and stretch upward toward a silver half-moon. At a cable length, a few orcas loudly cough their blows of vapor. Everything here is water. Water solid, water liquid, water vapor in fog and cloud, water alive. Water immense, overwhelming, but also water little, humble, fragile. Haunted by this majestic beauty, I know that here the sea is only a couple of degrees from freezing solid, that life teems at the edge of death. In the Antarctic, the vulnerability of our magnificent world is exposed, but most humans refuse to read the message.

After having cruised three months in the Antarctic waters, logging 120 helicopter-hours in search of cetaceans, we had spotted only two humpback whales, two groups of sei whales, half a dozen packs of orcas. Not one blue, not one finback! But on many of the beaches lay heaps of bleached whale bones, tragic monuments to human folly. Seals were scarce, but seal hunting was nevertheless about to resume. Every two weeks a liner poured hundreds of tourists onto the Antarctic peninsula. In spite of the treaty signed in 1959, South American countries have introduced claims to slices of the Antarctic pie into their education programs, and they publish irredentist maps. The scientific stations, whatever their nationality, are surrounded by heaps of lit-

ter that will remain for near eternity. In another part of the Antarctic continent, the sinister silhouette of the first offshore-drilling ship announced the fate of the last near-virgin continent: today investigations have discovered coal, gas, oil, iron, and about as many ore deposits as in any other land mass.

"Officially," the Antarctic deep-sea coring operation was only for science. The tragic irony of the social systems in which we live is that such monumental hypocrisy is expressed by very sincere people. The drillers, the sailors, the geophysicists, are working for scientific institutes. It is none of the scientists' business, by definition, to worry about what may be done with their findings! The geologist, the nuclear physicist, work for the advancement of knowledge and wash their hands of all responsibility! This syndrome has been institutionalized so that inventors and finders automatically surrender their substance to the elected adventurers who rule our so-called democratic world! And if at the end of a career a respectable scientist revolts and protests, he will be given only half a column of the twenty-third page of a local newspaper. If Ivan Schmovik, candidate for the presidency of Transbosnyia, sneezes or declares that Albania interferes in the internal affairs of Transbosnyia, every television network will give him prime time. But if Linus Pauling expresses his fears about the future of mankind, it is worth only a newspaper brief. There are no decibels for Nobels. It is high time independent scientists realize that their duty is to help control the applications of their findings. It is high time that all uses of science and technology be constitutionally submitted to the final rulings of a Scientific Supreme Court.

Our fears about the Antarctic are rooted in the feeling that it may be our last wilderness. But the abuses of technology and the forgeries of information are worse elsewhere. Never before has the marine environment been as raped and poisoned as it is today:

- All the urban and industrial effluents

of 500 million Europeans and Africans flow freely—practically without treatment—into the Mediterranean, a near-closed sea that was once the cradle of civilization.

- Millions of tons of toxic chemicals are either dumped directly into the ocean or find their way there indirectly by way of river pollution or rain.

- When the supertanker *Olympic Bravery*, the unsinkable pride of the Onassis fleet, recently ran aground on the island of Ushant, off France, no action was taken for one full month. A storm broke the ship in two and generated a near-catastrophic oil spill.

- On April 28, 1976, the barge *Sparkling Waters* was rammed by the Colombian freighter *Tanambi*, twelve miles southeast of Ambrose Light, near the entrance to New York Harbor. One million gallons of chemical wastes—700,000 of which were highly alkaline and the remaining 300,000 highly toxic—were dumped into the sea. The spill drifted to the southeast. With the danger now "out of sight," everyone has gone back to business as usual.

MEANWHILE, swamps are filled. Coastline development ruins the natural and only breeding grounds of thousands of species of marine creatures. Multinational corporations are starting to build their plants in those developing countries that have no environmental-protection regulations. Overfishing is such that the catch of most commercial fish has dropped, on average, 40 percent in the past ten years, in spite of an increase in fishing-fleet tonnage and the use of scientific data and technological aids. An estimated two miles of coral reef are destroyed with crowbars each day to supply souvenir shops—often those of scientific institutions—with shells and coral fragments! Spearfishermen perforate the last groupers and lobsters of the reefs or scare them away from their spawning grounds.

This panorama, far from being exaggerated, is, on the contrary, incomplete

and understated. In a tragic masquerade—the Law of the Sea Conference—incompetent diplomats and delegates have been working for two years to reverse the recommendations of the Sea Bed Committee and of the very U.N. resolution that gave birth to the conference. The exacerbated pretensions of national sovereignties are imposed on a fluid, elusive element. International by essence, the sea is about to be sacrificed by a treaty that will butcher it into pieces 200 miles wide, as if water were land; that will surrender enormous areas to the good or bad will of each country; that will not regulate deep-sea resources; and that will only soothe the conscience of delegates with its parody of environmental recommendations! In a wiser world (utopian by definition), the delegates would have weighed the origin, the significance, and the distant future of what they were talking about—water. But those who know about the ocean were politely heard once and then eliminated from discussions. The world's nations were represented; the world's waters were not. At the Law of the Sea Conference, there was a lot of law but very little sea.

THE universe as we know it—whether the result of blind forces or created by God—originated, maybe in a Big Bang, 15 billion to 20 billion years ago. The initial explosion endowed cosmic material with an unimaginable amount of energy. Our telescopes and radio telescopes give us information about celestial bodies 5 billion light-years away from us, thus revealing some aspects of the universe as they were 5 billion years ago. As a consequence, we have data covering one-third or one-quarter of the age of the universe. Such data confirm the Second Law of Thermodynamics—that, ever since the beginning, an overall degradation of energy has taken place. This process is called entropy. Entropy increases constantly, and, as it does so, the energy of the universe degrades; the cosmos slowly evolves into a cold, simplified, inert, dead chaos. In the process, all matter is submitted to an extremely wide range of temperatures. An important characteristic of all elements in the cosmos is that they are generally found in a gaseous or solid state. Molten iron and molten rock are much more rare than solid or gaseous iron and rock because they remain liquid only in a relatively narrow range of temperatures. The rarest liquid of all, however, is water. Extremely scarce in the universe as an element, water is all the more rare because

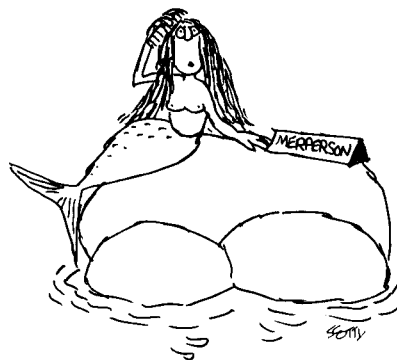
it remains liquid only between 0 and 100 degrees centigrade, a very narrow margin.

Zooming in from the universe to the little solar system, we find the earth to be the only planet where liquid water is found in any appreciable quantity. And even that quantity is small. The United Nations poster for Environmental Day, June 5, illustrates a comparison that I made fifteen years ago: if the earth were reduced to the size of an egg, all the water in the oceans, the lakes, the rivers, would amount to one drop. In reality, there is, on our planet, a very small, finite, precious, and vulnerable water reserve.

About 3 billion years ago, life as we know it made its appearance in water. It still depends on water. The “life expectancy of life” on earth probably extends until the time the sun becomes a “red giant”—in another 4 billion years. The miracle of life, the adventure of life, is not yet past the halfway mark. Because our species is only about 2 million years old, it could continue to thrive 2,000 times as long as we have already existed. To try to ensure this vast future, we must abandon our individual consciousness and develop a global consciousness. We must be motivated less by individual profit and more by profit for humankind.

Environmental consciousness must be founded on a critical analysis of the past 15,000 years. The conclusions of such an analysis are surprising. The record of Neolithic, protohistorical, and historical man, engraved in fossils, in deep-sea cores, and in buried and submerged clues discovered by archaeologists, is a continuing story of irreversible man-made destruction:

- Countless animals were eliminated by Asians invading America through the Bering Straits.
- A great forest—the Sahara—was destroyed and turned into desert by nomads and shepherds 8,000 years ago.
- Arabia Felix was a famous garden that became the sandy wasteland of Yemen through the destruction of its irrigation system.



- The idyllic Greek islands were stripped of their forests in order to build ships and to provide homes with firewood. They now are sterile rock.

- The Cape Verde Islands, completely bare today, were described by Bartholomeu Dias as a paradise.

- Europe's wolves, bears, rain forests, were exterminated.

Today, in the fury of misguided progress, destruction has become exponential, hysterical, catastrophic! But, paradoxically, the same science and technology used for reckless pilfering of resources have also developed all the means, all the solutions, to reverse the trend. Although the situation at the dawn of the industrial age, more than 200 years ago, was far less serious than it is today, it was hopeless because there was no technology available to reverse the trend. Yesterday our ancestors did not *know*, and they could not *do*. Today we *know*, and we *can*, but we *don't*. We are living as in a nightmare, our hands desperately reaching for the easy, accessible cure while incomprehensible forces paralyze us. Let us awaken from this nightmare, in which any reasonable solution is declared utopian!

Meanwhile, the little pulse of life, thriving on water, still turns shining drops of water into living jewels. At least locally and apparently, life defies the universal law of degradation, creating highly complex organic molecules, organizing chaotic matter into well-programmed and intricate structures of trillions of cells—like my grandchildren. It was the contemplation of life that inspired Father Teilhard de Chardin's dissertation on three infinities: in addition to the infinitely big and the infinitely small, Teilhard told us, there is also the infinitely complex—life. This is what we all should defend.

Cousteau Society Briefs

The Cousteau Society held its second Involvement Day in Anaheim, Calif. More than 3,000 people from the surrounding area joined Jacques Cousteau, his son Philippe, and fifty other environmentalists in lively workshop discussions, covering such vital issues as prospects and problems of nuclear energy; international maritime law; coastal-land regulation; and the possibilities of supplementing agriculture by gleaning food from the sea. As workshops finally came to a close, rock superstars Crosby and Nash ended the day with their own special touch—an evening of environmental songs. ©

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The Economic Prospect

Business Civilization in Decline

by Robert L. Heilbroner
Norton, 127 pp., \$6.95

The Twilight of Capitalism: A Marxian Epitaph

by Michael Harrington
Simon & Schuster, 446 pp., \$10.95

Reviewed by Robert Lekachman

IN THIS strange election year, the candidates—like the electorate itself—seem aggressively uninterested in corporate power, solar energy, tax reform, full employment, health care, income redistribution, economic planning, or any other issue. Whether Americans are cynically reacting to Vietnam and Watergate, yearning in a Bicentennial Year for the virtues of the simpler American past, or both, they seem content with three of the very dullest presidential contenders since the twenties.

This political mood is at sharp variance with the frequently apocalyptic tone of much of the social comment that this year has attracted attention, for in addition to the two ominous titles here considered, there have been volumes like Daniel Bell's *The Cultural Contradictions of Capitalism*, Tibor Scitovsky's *The Joyless Economy*, Henry Fairlie's *The Spoiled Child of the Western World*, Edgar Z. Friedenberg's *The Disposal of Liberty and Other Industrial Wastes*, and Barry Commoner's *The Poverty of Power*—not to mention my own *Economists at Bay*. Although vast differences of theme, emphasis, quality, and emotion distinguish these polemics one from another, they share certain doubts about the durability of American capitalism, at least as it is now administered. All of them, whether fearfully or

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hopefully, predict substantial changes in major economic and political institutions and practices.

What do the pundits know that the citizenry has yet to discover? Heilbroner and Harrington, authors of many excellent critiques of American society, here agree that American capitalism in anything like its 1976 form will not last long enough to be saluted on the occasion of our Tricentennial. Drawing upon both Karl Marx and Joseph Schumpeter, Heilbroner—in spare, lucid language—argues that capitalism (which, as Marx always insisted, is premised upon unlimited growth and expanding profits) is bound to falter when profits begin to decline under the pressure of resource exhaustion, the redistributive claims of the Third World, and the accelerating ability of organized labor in interdependent economies to extract wage and benefit gains far in excess of productivity improvements. Heilbroner believes that although capitalism may stave off its own demise in the next generation or two by turning to state planning under corporate domination, the

respite is bound to be temporary. For so long as capitalism adheres to democratic forms it will not succeed in adjudicating claims upon the national product on the part of labor and capital which add up to more than slowly expanding economies can produce. Whether planned or unplanned, economies under such pressure usually resort to the printing press in order to satisfy, but for the moment only, the dollar claims of all groups. The resulting inflation is an intolerable burden upon thrift and enterprise, as destructive to democratic legitimacy as the group conflicts that it seeks to soften.

In the end, then, as Heilbroner tells the tale, authoritarian governments will displace increasingly weak and discredited parliamentary institutions. Although he does not discuss their situations, Italy and England may well serve as cautionary instances of societies that have resorted to inflation to resolve incompatible group claims and now stand in danger of serious erosion of their liberties. Heilbroner's case is persuasively argued. Whether or not one is convinced depends in the first instance on the reality of resource limitation and consequent limitations upon future growth rates. These are issues of heated controversy among the experts. One may quarrel, in the second instance, with the validity of the proposition that authoritarian governments are necessarily or even usually more efficient than the untidy parliamentary forms to which we are accustomed. In the global argument the cards are stacked against democracy for the simple reason that the corruptions and



"Mr. Manning, my mother wants to know if she may borrow a well-turned phrase."