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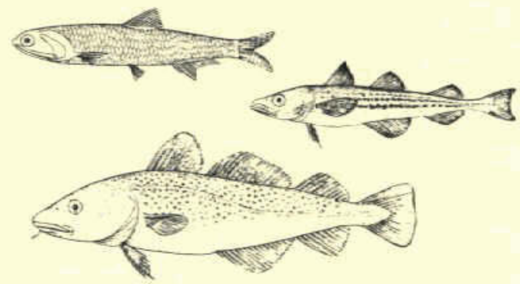

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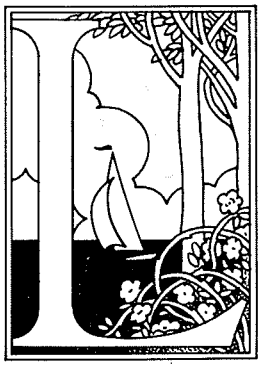

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Editor's Comment

On pages 170–175, we publish more of the letters that we have received in response to the four-part "Teaching in America" report in our New Year's 1984 issue. Our scholarly contributors sought to analyze the realities behind the much-lamented "rising tide of mediocrity" in the nation's high schools. The teachers and principals who have written to us make one thing clear: Too many American parents, otherwise preoccupied, have shrugged off child rearing, leaving it to the schools, with predictable results for their offspring in terms of motivation, self-discipline, and learning. Much teaching, in effect, has become remedial.

Increasingly, scholars have been re-examining the effects, good and bad, of rapid changes in social values in America since the 1960s, some of them unwittingly encouraged by government action. An abundance of data exists. During the 1970s, for example, much federally-sponsored research was done on programs aimed at eliminating poverty in America, but little of the information was publicized or used to reshape Washington's policies. In our Autumn 1984 issue, we shall be presenting several analyses of these major, long-neglected research findings, and what some leading scholars now believe are the implications for the 1980s.

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Vietnam As History

Ten Years After the Paris Peace Accords

edited by **Peter Braestrup**
editor of **The Wilson Quarterly**

In early 1983, some 50 leading historians and analysts of the U.S. experience in the Vietnam War gathered for two days at the Smithsonian Institution's Woodrow Wilson International Center for Scholars. It was the first major historians' conference on Vietnam.

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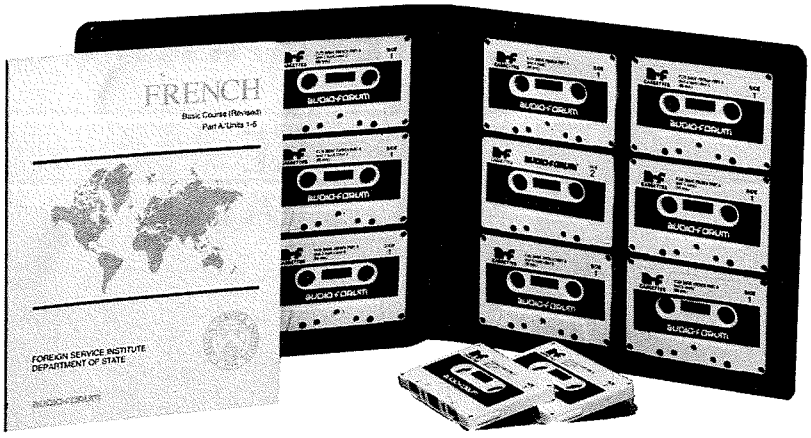

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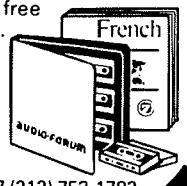

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POLITICS & GOVERNMENT

Election '84: Quiet in Congress

"House Campaigns Quiet As Few Seek To Run" by Phil Duncan, in *Congressional Quarterly Weekly Report* (Mar. 24, 1984), 1414 22nd St. N.W., Washington, D.C. 20037.

In the 1980 elections, Democrats in the U.S. House of Representatives suffered a dramatic loss of 33 seats. Two years later it was the Republicans' turn to be ambushed: They lost 26 seats. Duncan, a *Congressional Quarterly* staff writer, predicts that 1984 will provide both parties a respite from all the excitement.

There are a number of reasons for the eerie calm on the House campaign trail. The 1984 presidential race promises to be a close one, says Duncan, and the absence of long presidential "coattails" usually means little partisan turnover in the House. Would-be challengers in both parties are "waiting 'til next time." They may be wise to wait: The past two elections have made congressional incumbents so wary of possible upsets that they are taking extra care to placate their constituents.

Republican party leaders are actually discouraging aspirants who might launch all-out campaigns against strong Democratic incumbents this year. The GOP's 1982 strategy of fielding solid contenders for every possible race backfired: Vigorous campaigns by suddenly aroused Democrats mobilized Democratic voters and cost Republicans at least one governorship (in Texas) and many seats in state and local legislatures.

Many potential candidates also cite personal reasons for not running. Former Rep. Jim Coyne (R.-Pa.) refuses to try now to regain the House seat that he narrowly lost in 1982. Recalling his harried life in Congress, he explains that, while there may be other chances to run for public office, "I won't have another chance to be close to my children when they're young." House salaries are insufficient compensation for such a sacrifice. Even at $72,200 a year, the pay is considerably lower than what many Congressmen could earn as lawyers, doctors, or businessmen. Nor is the lure of Washington what it once was: Many potential candidates feel that individual House members have little influence on the course of events.

Whether such objections will remain compelling in 1986—when whoever wins the Presidency in 1984 will have built up a new record to challenge—is another question.

POLITICS & GOVERNMENT

Suburban Welfare?

"One County's Pipeline to the Treasury" by Irwin Ross, in *Fortune* (Feb. 20, 1984), 541 North Fairbanks Ct., Chicago, Ill. 60611.

If anybody in Washington is still trying to find fat in the federal budget, he need look no farther than just across the Potomac, to Arlington County, Virginia.

Ross, a *Fortune* writer, says that while congressional budget-cutters eye Washington's massive welfare and defense outlays, generous federal aid to state and local governments escapes attention. Those governments "are generally in much sounder shape than the U.S. Treasury," he notes, yet last year they received over $90 billion in federal largess. That amounts to about 11 percent of all federal outlays.

Arlington, the nation's third wealthiest county in terms of per capita income ($19,519), received $24.2 million in federal assistance in fiscal year 1983. Half of the money was devoted to "means-tested" programs for the poor: refugee assistance for the county's Indochinese residents, rent subsidies, and job training for the unemployed. But the remaining $12.9 million benefited people who could well afford to pay their own way.

Some $2.6 million, for example, came in the form of a "no-strings" revenue-sharing grant. The county used this money to fund its fire department. (Local officials thus freed county funds for road and other construction, circumventing the Davis-Bacon Act, which stipulates that any construction undertaken with federal funds must pay, in effect, union wages.) Another $4 million was used to complete a sewage treatment plant whose construction over 14 years has consumed $60 million of federal money. Local officials say that they could have done the job more quickly and at lower cost with county funds.

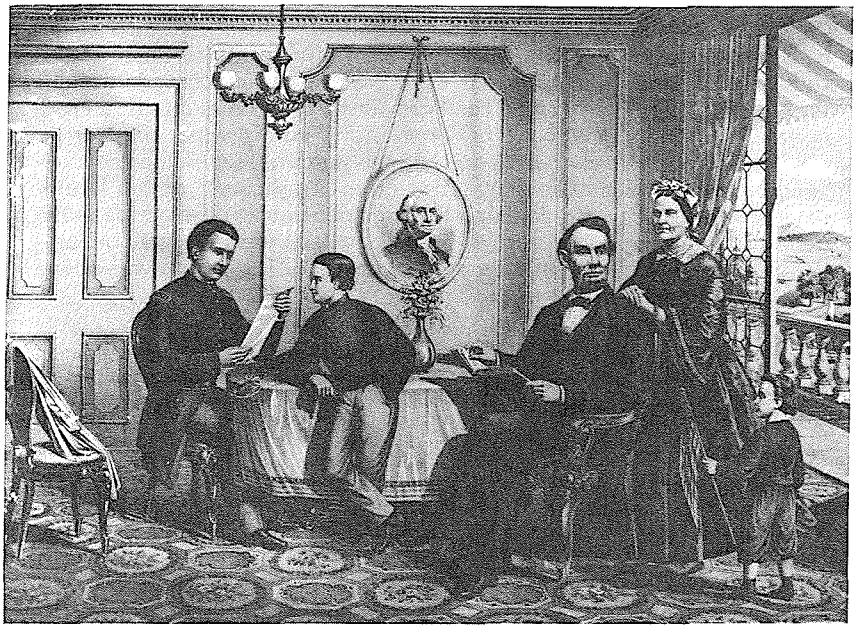
Arlington's public schools, meanwhile, collected $4 million from 22 federal education programs—for vocational education, writing seminars, and special help for gifted children. The U.S. Department of Agriculture sent Arlington $643,445 in school lunch subsidies, including an 11-cents-per-meal subvention enjoyed by the children of the affluent.

To top it all off, Ross says, the county government's tax levy is among the least burdensome in the 11-county Washington metropolitan area. Last year, Arlington rang up a $7.5 million budget surplus. Which suggests to Ross "that Arlington could tax itself more and dispense with a lot of federal aid. So, probably, could many other communities."

Shaping Lincoln's Public Image

"The Lincoln Image, Abraham Lincoln, and the Popular Print" by Harold Holzer, Gabor Boritt, and Mark E. Neely, Jr., in *The OAH Newsletter* (Feb. 1984), Organization of American Historians, 112 North Bryan St., Bloomington, Ind. 47401.

The all-seeing TV camera makes today's politicians worry a lot about appearances—haircuts, waistlines, and wrinkles. Ironically, the U.S. politician whose image is among the most vividly etched in Americans' imagination was a homely man who seemed scarcely to care how he



An 1867 lithograph of Lincoln with three of his four sons and his wife, Mary. No Lincoln family portraits were published until after his death.

was seen by the public.

Abraham Lincoln began his Presidency just as the technical processes of engraving, lithography, and photography were being perfected. According to the authors, who are creators of an exhibit of Lincoln pictures now at Gettysburg College, early prints and photographs were rare, prized possessions. *Political* prints took on an almost religious aura and were often proudly displayed at home. But while Lincoln obligingly posed for many artists, "neither he nor his managers made substantial efforts to manipulate in any systematic fashion the printmakers' products."

If anything, it was the entrepreneurs who made engravings and lithographs for the market, who did the manipulating, creating three distinct "Lincolns" that both shaped and reflected popular sentiment. The first was "Honest Abe, the Railsplitter of the West," who appeared during the late 1850s. "His homely face was beautified to encourage people to buy his picture," the authors remark, "and, incidentally, to vote for him." Where Lincoln was unpopular, what sold were unflattering portraits of a "nigger-lover."

At the suggestion of 11-year-old Grace Bedell, a New York state youngster who hinted in a letter that whiskers might improve his appearance, Lincoln grew a beard before moving to the White House in 1861. Printmakers struggled to document the change, sometimes "slop-

ping inaccurate and even grotesque beards onto beardless Lincoln portraits." Interestingly, while Lincoln was Commander-in-Chief of the Union forces during the American Civil War, he was seldom pictured in the company of military men. The President's 1863 Emancipation Proclamation ignited a new round of commentary-cum-prints.

After Lincoln's assassination in 1865, he suddenly seemed largely beyond politics. Printmakers began depicting him in sentimental family scenes, the authors note, "though the presidency was destructive to his domestic happiness, and though he never posed with his wife or family." In Victorian America, the authors observe, "the home was above criticism, and so at last was Lincoln."

The Mirage of Cabinet Government

"The Cabinet in the American Presidency, 1789–1984" by R. Gordon Hoxie, in *Presidential Studies Quarterly* (Spring 1984), Center for the Study of the Presidency, 208 East 75th St., New York, N.Y. 10021.

Nearly every U.S. president solemnly promises at the beginning of his first term that he will rely heavily on his cabinet. Yet the U.S. Constitution makes no mention of a cabinet; the institution has varied in function and importance according to the desires of each chief executive.

After his inauguration in April 1789, George Washington asked Congress to create three departments—State, Treasury, and War—whose secretaries he regarded as no more than "assistants." (Today there are 13 departments.) According to Hoxie, who heads the Center for the Study of the Presidency, the secretaries became an advisory cabinet largely by default: It quickly became apparent that the president would not be able to turn to either the Supreme Court or Congress for counsel. (When Washington went to the Senate floor in August 1789 to seek advice, he received a chilly welcome. Washington left "with sullen dignity," one senator recalled.)

Washington's cabinet was powerful, largely because of the presence of two energetic personalities, Thomas Jefferson at the State Department and Alexander Hamilton at the Treasury. But when Jefferson won the Presidency in 1800, memories of his running feud with Hamilton dimmed his enthusiasm for cabinet government. The institution went into decline.

Thereafter, the cabinet's importance varied with circumstance and the president's needs. Andrew Jackson, who occupied the White House from 1829 to 1837, was the first President to call regularly on the advice of a group of outsiders, his "Kitchen Cabinet." (Grover Cleveland had his "Fishing Cabinet," Franklin Roosevelt his "Brains Trust.")

Especially since the creation of the Executive Office of the President in 1939, the White House staff has been the cabinet's chief rival for the president's ear. Dwight D. Eisenhower was the chief practitioner of cabinet government in recent times, but he also greatly strengthened the National Security Council, which now competes with the Department of State for influence in the Oval Office.

Gerald Ford restored the cabinet to prominence. Watergate, he said,

"was made possible by a strong chief of staff and ambitious White House aides who were more powerful than members of the Cabinet." While it has been argued that the American cabinet system is obsolete, Hoxie believes that its very adaptability argues for its survival.

Business and Labor Look at Moscow

"Business, Labor, and the Anti-communist Struggle" by Arch Puddington, in *National Review* (Jan. 27, 1984), 150 East 35th St., New York, N.Y. 10016.

It is no surprise when Big Business and Big Labor wind up on opposite sides of the political fence. But in foreign policy, the two groups defy all expectations: Corporate leaders favor détente with the Soviet "workers' state." Most labor unions oppose it.

Puddington, executive director of the League for Industrial Democracy, says that Big Business's attitude is nothing new. A 1944 opinion survey by *Fortune* found business leaders to be the "most friendly" toward the USSR of all American groups.

Big Business has an obvious economic interest in nurturing East-West trade. Toward that end, key corporate executives have balked at U.S. economic sanctions against Moscow after the 1979 invasion of Afghanistan and at Reagan administration plans to block construction of the Soviet natural-gas pipeline to Western Europe. In 1982, they insisted that Poland be spared a damaging declaration that it had defaulted on loans from the West. (U.S. exports to the Soviet Union, mostly wheat, totaled $2 billion in 1982; Western Europe's exports were $8.8 billion.) But many businessmen also argue that cutting trade with the Soviet bloc reduces Washington's leverage in Moscow, or that it is ineffective because the Soviets buy the goods elsewhere.

Often, Puddington believes, businessmen are politically naive; they have "little understanding of the [communist] threat to the capitalist system and its attendant freedoms." Citibank executive Thomas C. Theobald asked during the Polish crisis, "Who knows what political system works best? All we can ask is: Can they pay their bills?"

American labor unions are far more skeptical about dealings with the Soviet Union. As a result of the struggle with American Communists for control of many unions during the 1930s, labor leaders are staunchly anticommunist. Unlike its Western European counterparts, the 13.8-million strong American Federation of Labor–Congress of Industrial Organizations (AFL-CIO) regularly supports economic sanctions against the Soviets.

Yet the AFL-CIO is under increasing pressure from the Left to abandon its anticommunist policy because it stands in the way of a closer alliance with environmentalists, nuclear freeze advocates, and other dovish elements of the Democratic Party. Puddington notes that "nothing in the nature of trade unionism" demands an anticommunist stance. It is possible, he says, that organized labor could abandon "raw common sense" and support Big Business in fulfilling the prophecy that capitalists will sell Russia the rope with which to hang themselves.

FOREIGN POLICY & DEFENSE

Lebanon Post-Mortem

"Assad and the Future of the Middle East" by Robert G. Neumann, in *Foreign Affairs* (Winter 1983/84), P.O. Box 2515, Boulder, Colo. 80321.

Now that Syria's President Hafez al-Assad has blocked the U.S.-backed peace-keeping effort in Lebanon, he "has emerged from years of isolation and placed himself at the power switch of Middle-East policy. For some time to come, he will remain a man who cannot be ignored."

So writes Neumann, former U.S. ambassador to Saudi Arabia and Afghanistan. Yet Assad is not without problems. His domestic power base is narrow: He is a member of the Alawite Muslim sect while most of his countrymen are Sunni Muslims. And Assad is backing the Ayatollah Khomeini in Iran's war with Iraq, Syria's wealthier and more powerful neighbor. At war's end, Assad may face Iraq's wrath.

Assad's Syria is now Moscow's chief "window" in the Middle East, the recipient of generous military aid from the Kremlin, and home to some 8,000 Soviet troops who operate its modern anti-aircraft and

Syria has occupied parts of Lebanon since the 1976 Lebanese civil war, when some of the nation's Maronite Christians asked for Syrian aid.

other missile systems. But, Neumann reports, "the Syrian tail often wags the Soviet dog." Against Moscow's wishes, for example, Assad fomented a revolt against Yasir Arafat in the ranks of the Palestine Liberation Organization (PLO) last year that split the guerrilla group.

Assad cannot be denied the dominant role in Lebanon that he wants, Neumann argues. Leaders of Lebanon's Druse and Shiite Muslims, and some non-Maronite Christians, have lined up behind Assad, albeit grudgingly. But Lebanon, created artificially after the dissolution of the Ottoman Empire in 1918, has long been "slippery ground" for foreign powers. The Syrian leader's success is by no means assured.

To win the wider leadership role that he seeks in the Arab world, Assad will have to tackle the Arab-Israeli question. That will require a choice between pursuing diplomacy or launching a new Arab war against Israel. Despite Assad's alliance with Moscow, damage to U.S. interests is not foreordained. Washington, Neumann cautions, will have to master "the traditional Middle-Eastern game of opposing and cooperating at the same time."

Reshaping NATO

"A Plan To Reshape NATO" by Henry Kissinger, in *Time* (Mar. 5, 1984), Time-Life Bldg., Chicago, Ill. 60611.

"An alliance cannot live by arms alone. To endure, it requires some basic agreement on political aims that justify and give direction to the common defense." So warns former U.S. Secretary of State Kissinger, pondering the future of the North Atlantic Treaty Organization (NATO). He calls for drastic action to save the alliance.

Intractable disagreements divide the United States and its European allies. U.S. leaders favor a tough stance toward the Soviet Union and Third World; their European counterparts take the opposite view. Most important, NATO cannot agree on a new defense strategy, needed now that Moscow's vastly expanded nuclear arsenal makes the American pledge to meet Soviet aggression with nuclear weapons much less credible.

Kissinger concedes that frequent flip-flops in U.S. foreign policy (e.g., on the SALT II treaty) give the Western Europeans some cause for complaint. But he thinks that the chief problem is Europe's long dependence on the United States for its defense, which has bred European "guilt, self-hatred, and a compulsion to display *independence* of the U.S." He detects a hint of "schizophrenia" in Europe: "a fear that the U.S. might not be prepared to risk its own population on a nuclear defense of Europe, coupled with the anxiety that America might drag Europe into an unwanted conflict."

Kissinger's solution: a new division of responsibilities within NATO. The Western Europeans, with twice the Soviet Union's wealth and half again its population, should concentrate on defense of the Continent by greatly strengthening their own nonnuclear forces. The United States, with 282,000 troops in Europe today, would maintain "highly mobile conventional forces capable of backing up Europe" but would assign more troops to the defense of the Middle East, Asia, and other areas.

FOREIGN POLICY & DEFENSE

To reflect the new division of labor, Kissinger would name a European general to command the NATO forces, traditionally headed by an American. And he would give European governments primary responsibility for conducting the arms control negotiations with Moscow on conventional forces and intermediate-range nuclear missiles.

Our NATO allies have long been reluctant to begin a conventional build-up. But Kissinger maintains that continued reliance on the U.S. nuclear deterrent is no longer practical. If the Europeans refuse to do their part, he concludes, Washington should consider a partial withdrawal of U.S. troops from Europe and a lower profile in NATO.

Defending the Middle East

"Poised for the Persian Gulf" by Richard Halloran, in *The New York Times Magazine* (Apr. 1, 1984), 229 West 43rd St., New York, N.Y. 10036.

Remember Jimmy Carter's Rapid Deployment Force? Critics "scoffed that it was not rapid, had little to deploy, and was not much of a force," recalls Halloran, a *New York Times* Pentagon correspondent. Today, it is called the Central Command, and while no longer in such a desperate state, it still labors under "enormous political and military handicaps."

The Central Command is one of six unified, multiservice U.S. commands responsible for military operations in particular regions of the world. Its chief mission is the defense of the Persian Gulf, which provides 10 percent of U.S. oil needs and 35 percent of Western Europe's. Its area of responsibility includes 19 nations, from Pakistan to Ethiopia to Saudi Arabia. Yet, unlike its five counterparts, the Central Command "has no forces under its operational control except those temporarily in its area, . . . no bases in its operating area, and no established communications and intelligence structures." Its headquarters are located in Tampa, Florida, some 7,000 miles from the Persian Gulf.

Egypt, Oman, Kenya, Morocco, and Somalia have agreed to let U.S. forces use certain of their military bases in an emergency. Rations and ammunition are stored on the British Indian Ocean island of Diego Garcia, 2,000 miles to the south of the gulf. (In 1984, the Central Command will spend $9.1 billion on construction at these facilities and on arms aid and military training for 14 of the nations in the area.)

Within 48 hours, 800 Army paratroopers could be on the ground anywhere in the Persian Gulf region. Another 2,200 troops could follow within five days. But limited U.S. air- and sea-lift capacity would slow Marine and Army troop movements considerably after that. Cargo ships carrying tanks and equipment would need 31 days to reach Oman.

As a result, Halloran reports, the Central Command's basic tactic would be "a pre-emptive move—getting into position first in hope of deterring an adversary's strike." U.S. troops could defeat Iran's ragtag Revolutionary Guards if they attacked Saudi Arabia, but a full offensive involving Iran's regular army might be harder to handle.

The Central Command has its weaknesses, Halloran concludes, but four years ago nobody in the Pentagon even had a plan for getting U.S. forces to the Persian Gulf in case of a crisis.

FOREIGN POLICY & DEFENSE

The UN As Peace-keeper

"International Crises, 1945–75: The UN Dimension" by Jonathan Wilkenfeld and Michael Brecher, in *International Studies Quarterly* (Mar. 1984), Quadrant Subscription Services Ltd., Oakfield House, Perrymount Rd., Haywards Heath RH16 3DH, England.

The United Nations (UN) is an easy target for critics on many counts. But according to Wilkenfeld and Brecher, political scientists at the University of Maryland and McGill University, respectively, it handles its toughest job very well.

In 160 international crises that occurred between 1945 and 1975, they found that the UN intervened in 95 cases and resolved only 28. Its overall success rate was thus 18 percent. Not, on the face of it, an impressive showing, the authors concede.

But they also found that the UN was much more likely to get involved, and to emerge successful, in more serious situations—measured by the level of violence, number of participants, degree of superpower involvement. Of the 28 UN successes, 21 involved armed conflict of some sort. The world organization did best during full-scale wars. It took an active role in mediating 29 of the 32 wars that occurred during these years and emerged with a settlement in 13 cases. Success stories include the India-Pakistan war of 1971 and the 1956 Suez Canal crisis.

Wilkenfeld and Brecher also found that UN intervention increased the chances for a settlement between the contending parties. Only 36 percent of the crises in which the UN was *not* involved were resolved by agreements (e.g., treaties, cease-fires). By contrast, with high-level UN activity by either the Security Council or the General Assembly, the success rate rose to 60 percent. Lower level UN mediation still produced mutual agreements in 50 percent of the cases.

The authors note that UN mediation often produces agreements without resolving underlying conflicts. But, overall, the organization's effectiveness has been "unfairly maligned."

ECONOMICS, LABOR, & BUSINESS

Budget Deficits: Maybe Not So Bad

"A New View of the Federal Debt and Budget Deficits" by Robert Eisner and Paul J. Pieper, in *The American Economic Review* (Mar. 1984), 1313 21st Ave. So., Suite 809, Nashville, Tenn. 37212-2786.

Like almost everybody else in America, Eisner and Pieper, economists at Northwestern University and the University of Illinois, respectively, are worried about annual federal budget deficits. But they take the view that the deficits have been *too small* in recent years.

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By putting more money in Americans' hands, deficits increase the demand for goods and services and stimulate the economy. Too little stimulation can mean recession; too much, inflation. But in times of high inflation and interest rates, the stimulus that Washington provides with one hand, it can take away with the other. And the authors believe that inflation and high interest rates since 1976 have eaten away the national debt—in effect, taking the money right out of government bondholders' pockets—faster than Washington has piled up deficits. The net effect: a deflationary economy.

In 1980, for example, the federal deficit totaled $61.2 billion on paper. But by the authors' calculations, the 13.5 percent inflation that year reduced the real value of the government's cumulative outstanding debt by $55.9 billion. Because interest rates also rose, the market value of outstanding government notes dropped even further—by another $12.6 billion. (If you buy today a $100 bond with fixed 10 percent interest, and commercial interest rates jump to 20 percent next year, your bond would then be worth $50.) In 1980, by these calculations, Washington chalked up a $7.3 billion surplus, taking the money out of consumers' pockets and slowing economic expansion.

Eisner and Pieper argue that Washington did not take its foot off the brakes until 1982, when it produced a mildly stimulative real deficit. They contend that the role of the Federal Reserve Board and its monetary policy as both cause and cure of the recent recession has been exaggerated. Despite all the scare talk about federal red ink, they see no cause for alarm until 1986, when projected interest and inflation rates together with an anticipated deficit of about $211 billion will bring "an extremely expansionary but unsustainable fiscal policy."

Union Revival?

"Can Labor Lead?" by Bob Kuttner, in *The New Republic* (Mar. 12, 1984), 1220 19th St. N.W., Washington, D.C. 20036.

For America's labor unions, this is a time of layoffs, contract "givebacks," and declining membership. But even amid all the dismal news, writes Kuttner, a *New Republic* contributing editor, "a new unionism seems struggling to be born."

The "old" unionism, says Kuttner, is a child of the late 1940s, when Big Business gave up bare-knuckle fights against organized labor in return for moderation of union demands. The unions concentrated on winning better wages and benefits for members, mostly in "smokestack" industries. Instead of working to broaden union membership, their leaders aimed to pass social legislation in Washington—with considerable success.

But the decline of heavy manufacturing industries during the 1970s and the rapid expansion of nonunion industries (services and high technology) hurt the established unions. The labor-management bargain finally came unglued in 1978, when Big Business helped to block U.S.

The number of major strikes nationwide dropped from 219 in 1978 to 81 in 1983, thanks to organized labor's adoption of new tactics and to workers' lessened demands in the midst of an economic recession.

Senate passage of the Labor Reform Act, which would have made it easier for unions to organize workers in the new industries.

Kuttner sees signs that organized labor is now shaking off its old "complacency." Service sector unions—the United Food and Commercial Workers, the Hospital Workers, the Communication Workers—are aggressively seeking new members. Some 2,000 professional union organizers are at work. Moreover, unions have developed new strategies. In 1980, for example, the Amalgamated Clothing and Textile Workers mounted a "corporate campaign" to stop J. P. Stevens and Company from blocking union organizing efforts. By threatening to withdraw substantial pension funds invested in the insurance firms that lent Stevens money, they made it hard for the company to win the financial support it needed to keep fighting.

Labor's new sophistication in collective bargaining has made a difference even in recent, much-publicized union "givebacks." When Eastern Airlines won 18 percent wage reductions from three unions in 1983, it had to give union members 25 percent of the company's stock, four seats on its board of directors, and a voice in day-to-day management.

If Big Labor is to survive, Kuttner believes, more unions will have to adopt aggressive organizing tactics while recognizing that employers need to make a profit.

ECONOMICS, LABOR, & BUSINESS

What FDR Saw In Keynesianism

"Keynes, Roosevelt, and the Complementary Revolutions" by John Kenneth Galbraith, in *Challenge* (Jan.-Feb. 1984), 80 Business Park Dr., Armonk, N.Y. 10504.

The past two years brought the centennials of the birth of Franklin Delano Roosevelt (1982) and of John Maynard Keynes (1983), who together transformed American economic thought and public policy. Yet the two men did not see eye-to-eye on the revolution they started.

As a student of Keynesian economics during the 1930s and as a wartime price-control official in the Roosevelt administration, Galbraith, now professor emeritus of economics at Harvard, saw the "complementary revolutions" up close. He believes that Roosevelt was essentially a conservative who feared that "capitalism could not survive its own cruelties." FDR's solution to the crisis of the Great Depression was government action—public works projects, Social Security, unemployment insurance—to improve the lot of the downtrodden.

Keynes, on the other hand, worried that FDR's reform agenda would shake "business confidence" and distract attention from the fundamental task of managing the economy to avoid swings in the business cycle. The British economist was, in his own way, also conservative. But his answer to the depression was the idea of deficit finance—the notion that national economies would remain stuck in low gear unless governments borrowed money and spent it to spur demand for goods and services. If Keynes had confined himself to advocating deficit spending, Galbraith speculates, he would have attracted little notice. It was Keynes's "genius" to add a host of intricate and sometimes incomprehensible propositions, such as his theory of "liquidity preference," that so absorbed economists that they accepted deficit finance without much thought.

FDR was philosophically committed to balanced budgets. Yet he needed money for his social programs. "He did not reject the Keynesians who sought to persuade him," Galbraith writes. "He regarded them as individuals uniquely skilled in rationalizing the inevitable."

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'Comparable' Worth?

"Comparable Worth: Another Terrible Idea" by Geoffrey Cowley, in *The Washington Monthly* (Jan. 1984), 2712 Ontario Rd. N.W., Washington, D.C. 20009.

If America's working women were suddenly to receive "equal pay for equal work," they would still earn less, on average, than men do. That is because the *occupations* in which women are concentrated are low paying. So today, feminists are demanding a "comparable worth" formula. Cowley, a *Seattle Weekly* staff writer, thinks it is a terrible idea.

The principle is simple. Men and women in different kinds of jobs that nevertheless require "comparable" levels of skill and responsibility should receive the same pay. Or, as some women ask, "Why *shouldn't* a female secretary with an M.A. in English literature and responsibility for managing the office's accounts get paid the same as a Teamsters truck driver who hauls frozen chickens?"

The issue is in the news because last November a federal district court judge ruled that the state of Washington must implement "comparable worth" and pay its female employees back wages of some $1 billion. (The case is being appealed.) Ironically, the state wound up in court because of a study it commissioned in 1974 from Seattle consultant Norman D. Willis. Willis devised a complex measurement scale to compare different kinds of jobs; he found that women employed by the state were earning 20 percent less than men in "comparable" jobs.

Willis now recoils at the thought that his or anybody else's scorecard should become *law*, Cowley reports. He adds, "Maintaining a standard as vague as "worth" could make quantum mechanics look simple." The Willis scale requires assigning each job a score based on skills required, mental demands, and working conditions. A clerk-typist might be classified as a "C1N 106 C2-f 23 C1N 23 L1A O," entitled to the same pay as anybody else of the same mathematically determined "worth."

Such a system would be an administrative nightmare. Every wage and salary in the nation would be subject to endless dispute and litigation. Market factors would be overlooked: Personnel managers, for example, would have to be paid more than pulp-mill superintendents. Yet, in the real world, good pulp-mill managers are harder to find and thus get higher salaries. Indeed, says Cowley, "the most pernicious aspect" of comparable worth is that it would further encourage undue emphasis on credentials, such as college degrees. "There are far better ways," he concludes, "to fight sexual discrimination in the workplace."

Immigrants in The Old South

"Natives and Immigrants, Free Men and Slaves: Urban Workingmen in the Antebellum American South" by Ira Berlin and Herbert G. Gutman, in *The American Historical Review* (Dec. 1983), 400 A St. S.E., Washington, D.C. 20003.

In the American imagination, the ante-bellum South has been reduced to a series of images out of *Gone with the Wind*—a world of rural plantation manors and of masters and slaves. Even historians have forgotten the South's cities and the surprising numbers of European immigrants who were drawn to them before 1860.

Berlin and Gutman, historians at the University of Maryland and City University of New York, respectively, contend that recalling these immigrants clarifies what happened to the South and to its freed slaves after the Civil War. The immigrants—Irish, German, Italian—never exceeded three percent of any Southern state's population before 1860, but in cities such as Savannah and Richmond they comprised up to

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German immigrants arrive in New Orleans in 1857. Some 54,000 Germans had debarked there by 1850, but most settled elsewhere in the South.

one-third of the population. In Mobile, 41 percent of the city's workingmen were European born, 35 percent were slaves, 13 percent were Southern-born whites, nine percent were Northern-born whites, and two percent were free blacks.

By 1850, when the immigrant influx began in earnest, slaves made up a declining share of the Southern urban population, as more and more slave labor was demanded by the growing cotton economy. Many city slaves were skilled artisans (carpenters, blacksmiths, mechanics), and when they were sold to plantation owners, they left behind the sons who would have inherited their skills. The black artisan class shrank, depriving blacks of natural leaders and of skills and business experience that would have helped in the post–Civil War job market.

Meanwhile, the authors argue, the quickening pace of European immigration to the South after 1850 worried the reigning white slave owners. In Nashville, Tennessee, for example, the number of immigrant workingmen tripled between 1850 and 1860. Foreign-born whites throughout the South resented the slave system because it deprived them of jobs. Nor could they be counted on to share Southern views on race.

Indeed, the authors say, blacks and immigrants briefly showed signs of unity. In 1847, for example, Richmond's First African Baptist Church sent $40 overseas to aid victims of the Irish Potato Famine. Yet by the end of the Civil War, the authors believe, all hope for the creation of a Southern urban working class had been dashed. By then, Southern blacks were largely leaderless and tied to the soil.

Exaggerating the Schools' Woes

"Did the Education Commissions Say Anything?" by Paul E. Peterson, in *The Brookings Review* (Winter 1983), 1775 Massachusetts Ave. N.W., Washington, D.C. 20036.

Last year, President Reagan's National Commission on Excellence in Education warned of a "rising tide of mediocrity" in the nation's schools. A host of other task forces soon echoed the dire news [see "Teaching in America," *WQ*, New Year's 1984]. But according to Peterson, a Brookings Institution political scientist, all the hoopla concealed the fact that the tide was already beginning to recede.

Much of the evidence used to document the public schools' tailspin bears re-examination, he says. While outlays per pupil dropped by eight percent between 1978 and 1983, this barely cut into the 45 percent increase that had occurred during the previous eight years. And although private school enrollment climbed from 9.8 percent of the nation's students in 1974 to 10.9 percent in 1981—an ill sign for the public schools—it came nowhere near the 13.5 percent level of 1960.

Such data, argues Peterson, reveal "little more than a pause in what has otherwise been a continuous upward spiral" in the quality of U.S. public education. Things are already beginning to look up for elementary and junior high schools, where students' test scores are rising.

How could all of those panels and commissions have been so wrong? Peterson believes that the flaw lies in the very nature of such groups. Because their only power comes from influencing the public through the news media, they have every incentive to exaggerate problems and little reason to make detailed recommendations.

As a result, Peterson argues, airy generalities (aim for "excellence" in education) tend to prevail. The commissions steer clear of controversial proposals (e.g., government education vouchers). When they do endorse ideas that might rock the boat (e.g., merit pay for teachers), they offer no advice on the most difficult question: how to pay for them.

Usually, blue-ribbon panels claim that they "mobilized public opinion." But Peterson thinks that Americans were already alert to the state of their schools. The commissions, he observes, merely ran to the head of the pack, "shouting loudly en route."

Explaining High Black Youth Unemployment

"The Paradox of Lessening Racial Inequality and Joblessness among Black Youth: Enrollment, Enlistment, and Employment, 1964–1981" by Robert D. Mare and Christopher Winship, in *American Sociological Review* (Feb. 1984), 1722 N St. N.W., Washington, D.C. 20036.

By almost every measure, the socioeconomic gap between whites and blacks has narrowed since the 1960s. A notable exception is youth employment. In 1954, note Mare and Winship, sociologists at the University of Wisconsin and Northwestern University, respectively, 47

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percent of black and 50 percent of white male 16-to-24-year-olds held jobs. In 1980, the rates were 41 and 62 percent, respectively.

The authors looked for explanations in U.S. Census Bureau data on 261,000 young men. Between 1964 and 1980, black males increased their school enrollment, while white enrollment dropped modestly. About 60 percent of black high school–age men were still in school in 1980, just topping the white enrollment rate. Students are less likely than non-students to hold jobs. By the authors' calculations, the new school enrollment rates account for 39 percent of the increase in the black-white employment differential.

Military enlistment patterns have also changed. Since the early 1970s, black enlistment rates have topped white rates, reversing the historic pattern. Nearly 15 percent of 20-to-23-year-old black men, but just over five percent of their white peers, were in uniform in 1981.

Because military personnel were not until recently counted as part of the U.S. work force, enlistment had no direct impact on employment statistics. But there are two indirect effects: The military gets the "cream" of black youths, leaving a pool of less employable job candidates. And veterans, because they lack civilian work experience, suffer abnormally high unemployment. Higher rates of school enrollment have the same effects, the authors add. By their reckoning, inexperience and "creaming" due to higher black enrollment and enlistment rates together account for another 16 percent of the increased employment gap.

That leaves nearly half of the 18 point increase in the black-white employment "gap" statistically unexplained. *Higher* employment among white youths and the decline of inner-city businesses that employ young blacks are among the probable causes. The authors doubt that racial discrimination has worsened. They think that their data reveal an employment disparity that was there all along, concealed only because the young blacks of the early 1960s were getting an unwanted "head start" in the work force over their white peers.

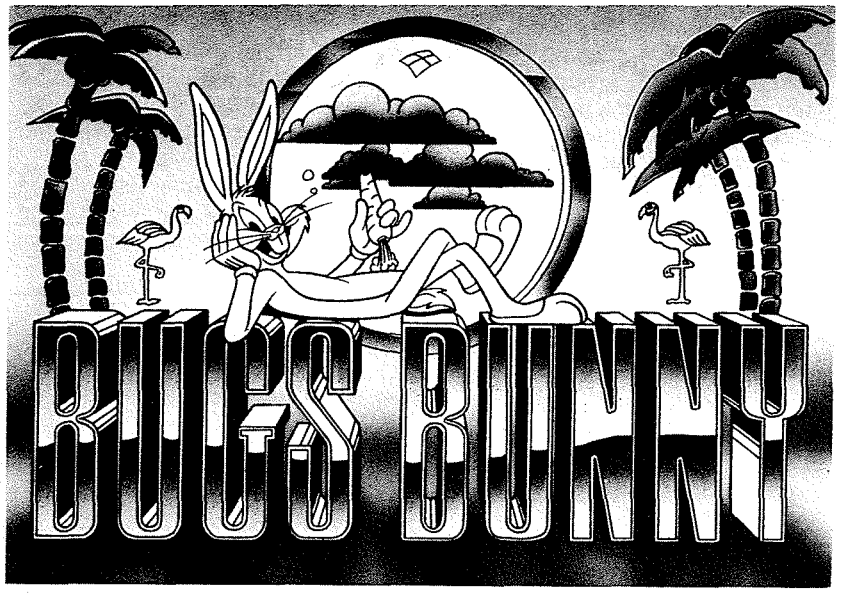
PRESS & TELEVISION

TV for Wimps?

"Where the Do-Gooders Went Wrong" by Walter Karp, in *Channels of Communications* (Mar.-Apr. 1984), Box 2001, Mahopac, N.Y. 10541.

To hear the critics of children's television tell it, Saturday mornings are as awash in animated violence and mayhem as ever. If only it were so, laments Karp, a *Channels* contributing editor.

He says that the networks have succumbed to pressure from groups like Action for Children's Television to "reform" kids' shows. *The*



Bugs Bunny, in disfavor among TV "reformers," still appears on network TV shows. But less popular characters have been exiled to local stations.

Smurfs, Rubik's Cube, and other new animated series are produced according to "pro-social" guidelines: The heroes are self-effacing, group-minded, and equable to a fault. Characters who might encourage self-assertion or "aggression" in youngsters—e.g., Bugs Bunny and Roadrunner—are frowned upon. One TV network went so far as to cut out a scene showing a cat-like character hiding in a dish of spaghetti "on the grounds that some child might dunk his cat into pasta as well."

The "pro-social" outlook has become "a despotic little orthodoxy," Karp asserts, even though there is no proof that children imitate television characters, whether good or bad.

What is worse, he writes, "reformed" television fails to do what *is* possible. Old-fashioned cartoons, like fairy tales, helped youngsters come to grips with their worst fears, assuring them "that monsters can be slain, injustice remedied, and all obstacles overcome on the hard road to adulthood." As psychologist Bruno Bettelheim wrote in his noted 1976 book on fairy tales, *The Uses of Enchantment,* "only exaggerated hopes and fantasies of future achievement" can counteract children's immense anxieties and spur them on.

Today's bland fare trivializes children's concerns. Enemies are not conquered, but brushed aside—dragons and evil wizards turn out to be powerless and not worth taking seriously. In the interests of peaceable conduct, a Smurf is likely to spare the life of a vanquished sorcerer. Yet,

one must remember, the Grimm brothers' Gretel did not hesitate to shove *her* enemy, the witch, into an oven.

On Saturday-morning TV, Karp adds, "The lone individual is weak and helpless; the group is strong and kind." The individual's rescue by the group is often a prominent theme. Says Karp: "In real life, no gang can help a child master the deep anxieties that beset him." What he needs is reassurance that he can make it on his own.

Karp sees "reformed" children's TV as more than a bit sinister. "It is systematic training for personal weakness and social subservience," he charges, that might eventually sap our children of the inner resolve they need "to stand up and fight for their rights."

What Is Wrong With Objectivity

"Objectivity Precludes Responsibility" by Theodore L. Glasser, in *The Quill* (Feb. 1984), Society of Professional Journalists, Suite 801 W., 840 North Lakeshore Dr., Chicago, Ill. 60611.

"I don't think it is any of our business what the moral, political, social, or economic effect of our reporting is," Walter Cronkite once declared. The journalist's chief concern ought to be "objectivity," he said. Glasser, who teaches journalism at the University of Minnesota, disagrees.

Objectivity did not become a canon of journalism until the mid–19th century, when newspapering became a big business. Publishers encouraged objectivity, Glasser argues, because "it was efficient for newspapers not to offend readers and advertisers with partisan prose" and because reporters could work more efficiently if they stuck to the facts. As a result, Glasser contends, journalists have come to serve merely as conduits for others' views: "Sources put forth the ideas while other sources challenge those ideas."

What is wrong with that? To begin with, Glasser says, "Objectivity requires only that reporters be accountable for how they report, not what they report." Thus, in 1977, a federal appeals court found the *New York Times* innocent of wrongdoing even though it had published, without trying to determine whether the accusation was true, an environmental group's false charge that five scientists were "paid liars" for the pesticide industry. The court declared that the press could not be asked to suppress newsworthy statements "merely because it has serious doubts regarding their truth."

Objective reporting is also biased in favor of the status quo, Glasser asserts. The reporter-as-conduit naturally relies heavily on demonstrably newsworthy "official sources, official records, official channels." And the standard of disinterestedness strips reporters "of their creativity and imagination," he argues, and makes them "a relatively passive link between sources and audiences."

To make the press truly responsible, says Glasser, newsmen would have to be held accountable for their work. But that is not going to happen until journalists acknowledge that "news is created, not reported," and that they themselves are its creators.

RELIGION & PHILOSOPHY

Influential Intellectuals

"New York Intellectuals—Up From Revolution" by Nathan Glazer, in *The New York Times Book Review* (Feb. 26, 1984), P.O. Box 508, Hackensack, N.J. 07602.

From the 1930s to the 1950s, a small band of intellectuals in New York City hotly debated questions that nobody else cared about in obscure magazines that nobody else read. Today, some of those writers, while not household names, informally advise presidents and enjoy the status of minor media celebrities.

Glazer, a Harvard sociologist, is an alumnus of the New York world populated by the likes of philosopher William Barrett, novelist Mary McCarthy, and literary critic Irving Howe. He explains what happened.

Revolutionary eras often spawn intellectuals (not academics but literary folk with a political bent), and the Great Depression appeared to be such a time. The New Yorkers avidly pursued not the politics of who gets what, Glazer notes, but the politics of theory (e.g., was Marxism or Leninism to blame for the end of democracy in the Soviet Union?).

Brilliant though they were, these intellectuals would have soon faded into obscurity, says Glazer, except for two accidents of history.

First, the Cold War began after World War II. "Their experiences, right there in New York . . . struggling [with American Communists] over control of magazines or unions or conferences . . . had taught them how different Communists, and Communism, were," says Glazer. As liberals in good standing, they also represented a "respectable" anti-communist alternative to McCarthyism. (In 1952, Henry Kissinger, then a Harvard graduate student, invited William Barrett to visit the school to serve as living proof of this possibility.)

The second accident was the postwar growth of higher education and the acceptance of modernist writers whom the New Yorkers had long championed—Joyce, Kafka, Proust. Suddenly, old literary essays from the *Partisan Review* were campus classics. By the late 1960s, most of the New Yorkers had won professorships around the country.

That ended New York's virtual monopoly on intellectuals. In any event, says Glazer, the old New York intellectual style of making bold judgments "without knowing quite enough" was doomed. Across the land, activist intellectuals are more specialized and less preoccupied with theory, but no less passionate about their politics.

Longevity, Yes

"When We Are Old" by Sir Peter Medawar, in *The Atlantic* (Mar. 1984), Box 2547, Boulder, Colo. 80322.

As modern medicine makes ever-longer human lives possible, doubts about longevity's allure have grown. Medawar, the 1960 recipient of the Nobel Prize in medicine, says the skeptics have it all wrong.

The possibility of a dramatic breakthrough makes research seem, to

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some, unnatural or even impious. (For example, if "antioxidant" food preservatives can be adapted for human use, 20 years might be added to the average life span.) Medawar, however, doubts that anybody would want to carry that view to its logical conclusion: The "natural" human life span is about 25 to 30 years. Indeed, he notes, virtually all advances in hygiene and medicine, from washing one's hands to the invention of bandages, lengthen life.

A few critics contend that it is selfish to try to delay death and that any years thus won would be empty [see *WQ*, Summer 1983, p. 26]. But Medawar dismisses this view as "spiritless": "A person who is loved and in good health has reason enough to want to live a few years longer than might seem to be his due." Grandparents have every reason to want to see their grandchildren grow up; aging gardeners long for the incomparable joys of another spring.

Medawar is not worried by the social problems that might accompany a larger elderly population—greater numbers of invalids, more costly health and retirement programs, the development of a gerontocracy. Longevity would increase only over the course of decades, leaving plenty of time to make the necessary adjustments.

Medawar worries that unnecessary fears will deter us from pursuing life-extending research. As an antidote, he proposes that a small group of volunteers be the first to try life artificially prolonged to 100. "If senile dementia is their fate, they will have warned us off."

Children's Rights

"What's Wrong with Children's Rights?" by Jan H. Blits, in *This World* (Winter 1984), Circulation Services, 125 West 24th St., New York, N.Y. 10011.

Today's advocates of "children's rights" are demanding recognition for a variety of new rights: rights to adequate nutrition, legal counsel, even parental love. But Blits, a University of Delaware philosopher, argues that the reformers are driven as much by a desire for a new egalitarian society as by a real concern for children.

Citing the work of French historian Philippe Ariès [see "The Sentimental Revolution," *WQ*, Autumn 1982], Columbia University's Maxine Greene and other champions of children's rights contend that the very idea of childhood is an invention of 16th-century Europe. If childhood is no more than a social convention, then there are no "natural" differences that justify children's unequal rights before the law.

Greene and her colleagues also challenge the liberal tradition of natural human rights as elaborated in the 18th century by philosophers John Locke and Michel de Montesquieu. According to Locke, certain basic rights—the Declaration of Independence's "inalienable" rights to "Life, Liberty, and the Pursuit of Happiness"—spring from human nature itself and make all humans equal. But the children's rights proponents, like Marxists and existentialists, deny the existence of a fixed human nature. They view man as "simply the product of constantly changing social conditions," Blits explains. Rights thus become "as

malleable as man and, hence, limitless." For this reason, children's rights activists can present the items on their public policy "wish list"—the elimination of war or the end of poverty—as if they were "rights" of children.

Broader children's rights are sometimes urged as a remedy for child abuse. But Blits calls this "a wholesale solution to a retail problem." Greene and her allies speak in benign terms about children and the family, yet they seem to assume that the family is actually a "combat zone." Ironically, Blits writes, the legal safeguards that children's rights advocates propose, by stripping parents of their authority and encouraging lawsuits by their offspring, might make families just that.

SCIENCE & TECHNOLOGY

Abstinence Is Not the Answer

"The New Prohibitionists" by Stanton Peele, in *The Sciences* (Mar.-Apr. 1984), P.O. Box 356, Martinsville, N.J. 08836.

"I am an alcoholic," Alcoholics Anonymous members ritually declare, "I cannot drink." That is the common view in the United States: Alcoholism is a disease, and abstinence is the only cure.

But Peele, a psychologist, argues that we should not view problem drinkers in this light. It may hurt their chances for recovery. He believes that alcoholism may be more a social and psychological problem than a medical one.

Drinking was a family affair in colonial America, and children were taught early to exercise moderation. Drinking problems were rare. (They still are among certain ethnic groups: Only one in 100 American Jews is an alcoholic, compared to about one in 12 of all Americans.) In the Wild West of the 19th century, however, taverns became male preserves, and heavy drinking became a sign of masculinity. Alcoholism rates soared, and, in reaction, the temperance movement was born. The "disease" theory of alcoholism—and the view that abstinence is the only cure—was a natural outgrowth of the notion that alcohol is evil and corrupting.

But if alcoholism is a "disease," Peele says, nobody has yet discovered the metabolic mechanism behind it. And since the "disease" is not contagious, it must be "mandated by genes." But alcoholism, unlike most genetic afflictions, can be cured.

In Western Europe, where the disease theory lacks unanimous support, controlled-drinking therapy is an acceptable alternative to total abstinence. Only in the United States do advocates of controlled drinking encounter stiff resistance from health-care professionals and the news media. During the early 1970s, California psychologists Linda and Mark Sobell claimed success in teaching moderate drinking habits to 20 alcoholics. In 1982, *Science* magazine published a critique show-

ing that all of the Sobells' "reformed" drinkers later suffered bouts of drunkenness and that four eventually died of alcohol-related causes. Neither *Science* nor CBS News's *60 Minutes*, which publicized the story, mentioned that the Sobells' 20-person "control" group went the abstinence route and also suffered four deaths.

Other U.S. research suggests that controlled drinking is feasible. A 1980 Rand Corporation study of one alcoholism treatment program shows that after four years, 18 percent of the patients still free of drinking problems had become moderate drinkers. Indeed, the Rand researchers found that some alcoholics—notably, single men under 40—were *more likely* to suffer relapses if they tried to swear off the bottle altogether rather than learn moderate drinking habits.

Abstinence may be the best policy for some, Peel says. "But when we promote the belief that [10–15 million people] cannot taste alcohol without catastrophic results, we may be fulfilling our own prophecy."

The Chemistry of Man's First Flight

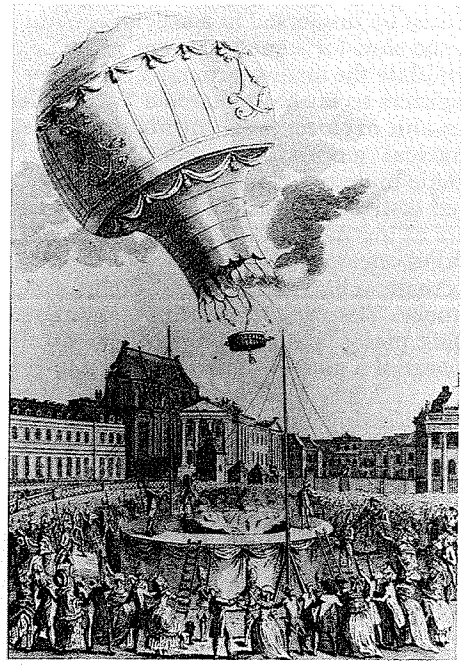
"The Invention of the Balloon and the Birth of Modern Chemistry" by Arthur F. Scott, in *Scientific American* (Jan. 1984), P.O. Box 5969, New York, N.Y. 10017.

On November 21, 1783, the first men ever to fly without tethers to the ground went aloft in a hot-air balloon over Paris. The feat was the work of two paper manufacturers, Joseph-Michel and Jacques-Étienne Montgolfier, who were encouraged by—and woefully misinformed about—recent breakthroughs in chemistry.

The two revolutionary developments of the day were the overthrow of the phlogiston theory of chemical composition and the discovery of gases. The phlogiston theory, an extension of Aristotle's notion that all matter was composed of four elements (air, earth, fire, and water), explained that when substances burned, fire liberated a fifth element called phlogiston (from the Greek word for "flammable"). Gases, explains Scott, a former Reed College chemist, were regarded as a form of ordinary air.

The first major dent in the theory was made during the 1750s by British chemist Joseph Black (1728–99) who demonstrated that solid magnesia treated with acid released a gas distinct from air. He called it "fixed air," believing it had been trapped inside the magnesia. Black also found that "fixed air" (carbon dioxide) was released by burning charcoal and in fermentation and respiration. In 1766, his countryman Henry Cavendish (1731–1810) announced the discovery of a second gas, lighter than air, which he called "inflammable air" (hydrogen). Air could no longer be considered a basic element.

Aristotle's theory quickly collapsed. Joseph Priestley (1733–1804) soon isolated several gases, including oxygen, which he, still a believer in phlogiston, named "dephlogisticated air." (Priestley also injected "fixed air" into water, and "soda water" quickly became a European sensation.) The final step was taken by Antoine Lavoisier (1743–94),



The Montgolfier brothers sent their balloon aloft for King Louis XVI and 13,000 spectators on September 19, 1783. Aboard were a sheep, a rooster, and a duck. The brothers had launched their first trial balloons a year earlier.

who, in 1783, devised an experiment in which he decomposed water into hydrogen and oxygen. That meant that water could not be a basic element. It also left no room for the existence of phlogiston. In a 1789 book, Lavoisier laid down the outlines of modern chemistry, based on chemical elements.

The Montgolfier brothers, both chemistry buffs, heard of some of the new experiments and decided to try out their long-delayed plan to launch a balloon. Apparently, they believed that by burning straw to inflate their balloon, they were creating a light gas. Actually, all they got was hot air. But it was good enough. Anybody could have launched a hot-air balloon years before. It took a revolution in chemistry to give somebody the courage to try.

Another Computer 'Revolution'?

"Reinventing the Computer" by Tom Alexander, in *Fortune* (Mar. 5, 1984), 541 North Fairbanks Ct., Chicago, Ill. 60611.

The computer industry seems to go through more revolutions than a long-playing record. The latest, writes *Fortune*'s Alexander, is a coming "fifth generation" of speedy computers that will bring personalized robots and other futuristic gadgets closer to reality.

SCIENCE & TECHNOLOGY

Some of today's best $5 million supercomputers operate so near capacity that their circuit boards must be immersed in a special coolant to avoid overheating, but all are too slow for some tasks. For example, it can take weeks or months to simulate the airflow around a passenger jet in flight. The reason: All computers so far have shared a basic limited design—called "von Neumann architecture" in honor of the Hungarian-American mathematical genius John von Neumann (1903–57) who designed it. "A single main processing unit," Alexander explains, "calls forth programmed instructions and data from memory in sequence, manipulates the data as instructed, and either returns the results to memory or performs other operations."

Relying on only one processor creates a bottleneck in the single channel between processor and memory. The fifth-generation computers will avoid the traffic jam by using many "parallel" processors. Each will work independently on one part of a given problem and exchange its findings with other processors.

Simple as it seems, parallel processing poses daunting technical challenges. Scientists must figure out how to break complex problems into manageable bites that can be worked on "in parallel" rather than sequentially, as in today's computers. And they must develop computer programs that will allow the processors to "talk" to and interact with one another while they are working.

Ultimately, a complex network of processors in a computer might work something like a human brain—"thinking" and programming itself as it went along. Not only would such a machine be able to complete in short order a simulation of an airplane in flight, it would also work fast enough to take on some more "human" tasks—such as understanding spoken language and producing a typed letter from it.

Science fiction? Japan, the European Common Market, and the United States have all launched rival research programs aiming to be first with fifth-generation computers. The research is scheduled to take just five years.

Two Cheers for Irradiation

"Renewed Interest in Food Irradiation" by Marjorie Sun, in *Science* (Feb. 17, 1984), 1515 Massachusetts Ave. N.W., Washington, D.C. 20005.

Now that the U.S. Environmental Protection Agency has severely restricted the use of the suspected carcinogen EDB (ethylene dibromide) as a fumigant for fruits, vegetables, and grains, a lot more of America's food may be irradiated.

Despite its menacing name, irradiation does not involve radioactivity, notes Sun, a *Science* correspondent. It uses controlled doses of gamma rays or high-energy electrons to kill insects, parasites, bacteria, and even viruses. Irradiation can kill trichinae in pork, inhibit sprouting in potatoes, or eliminate fruit fly eggs on oranges.

"By any other name, irradiation of food would probably have been

sanctioned by the federal government years ago," Sun believes. Twenty countries now permit some use of the process, developed during the 1950s; several international agencies, including the World Health Organization, have certified the safety of medium-energy irradiation. But in this country, the U.S. Food and Drug Administration (FDA) has barred all but a few uses. Food prepared for U.S. astronauts in space and for people suffering from immune system deficiencies, for example, is sterilized by irradiation. The FDA restricts radiation because it fears that the treatment may create harmful chemical by-products in foods, though none have yet been found.

Last summer, the FDA granted permission to food processors to begin low-energy irradiation of spices, and more foods may be added to the list soon. The trouble is, says Sun, such low-energy treatments are powerful enough to kill insects, but not bacteria. A 1958 decision by the U.S. Congress to classify irradiation as a food additive rather than a process (such as canning) largely accounts for the restriction. It is difficult to design laboratory tests of irradiation to meet the strict safety standards for additives: Laboratory animals can be fed huge quantities of additives like saccharin but not of irradiated foods.

A bill now pending in Congress would change the 1958 classification and make it easier for the FDA to allow food processors to use higher energy treatments. The next hurdle for food producers would then be convincing consumers that irradiated fruits will not glow in the dark.

RESOURCES & ENVIRONMENT

The Psychology of Saving Energy

"Saving Energy: The Human Dimension" by Paul C. Stern, in *Technology Review* (Jan. 1984), Room 10-140, Massachusetts Institute of Technology, Cambridge, Mass. 02139.

The federal government's efforts to encourage Americans to save energy in their homes have been a disappointment [see *WQ*, Autumn 1983, p. 30]. One reason, suggests Stern, a U.S. National Research Council analyst, is that Washington's emphasis on "market forces" neglects the "human factor."

High energy prices do spur people to conserve, he says, but not necessarily in logical fashion. Most consumers simply have inadequate information: They overestimate the electricity used by lights and TV sets, for example, and overlook big but "invisible" energy users such as hot water heaters.

But even providing information may not help matters, Stern notes. The source must be credible. In a 1978 experiment, Cornell researchers Samuel Craig and John McCann mailed out two batches of identical pamphlets containing energy-saving tips, one under the letterhead of the local electric utility company, the other under that of the New

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York Public Service Commission (PSC). The people who received the PSC version cut their electricity use by about seven percent; those who received the utility's version, not at all. A 1979 U.S. Department of Energy mailing to every household in New England achieved significant results by including a plastic showerhead flow restrictor with each pamphlet. Apparently, Stern says, the flow restrictors were like a "foot in the door." Once people used them, they were more receptive to other conservation measures.

Consumers also seem to be willing to conserve as long as they feel that they are not losing control over their surroundings. In 1975, for example, the U.S. Army installed gasoline regulators in some vehicles to prevent rapid acceleration and reduce fuel consumption. The experiment backfired when resentful drivers removed about 10 percent of the devices. But Princeton University researchers found that consumers would readily accept similar equipment if it were designed so that users could temporarily override the system.

In general, Stern believes, an energy policy that equates conservation with sacrifice and loss of freedom will not work (as President Carter discovered). In direct appeals, stressing efficiency and "energy independence" is a better formula. Depending only on high fuel and electricity prices to foster conservation at home is doomed to produce disappointing results.

Why Acid Rain Still Falls

"Can We Stop Acid Rain? And Who Should Pay the Bill?" by James Krohe, Jr., in *across the board* (Feb. 1984), The Conference Board, 845 Third Ave., New York, N.Y. 10022.

Acid rain has left hundreds of lakes throughout the American Northeast and parts of Canada devoid of fish life. It threatens many others with the same fate. Yet relief may be a long time coming. How acid rain is created is no mystery; *where* it is created is another question.

Coal combustion is the chief source of acid rain. Sulfur oxides released during burning are transformed in the atmosphere into sulfates and then into sulfuric acid, which falls in raindrops, explains Krohe, an *Illinois Times* editor. Every year, coal-fired factories and power plants spew 28 million tons of sulfur oxides into the atmosphere. In 1981, the National Academy of Sciences (NAS) estimated that a 50 percent reduction in the acidity of Northeastern rain would be needed to revive the region's ailing lakes, but could not say what reductions in sulfur oxide emissions would be needed to meet that goal.

Nor can it be established for certain *whose* sulfur oxide pollution should be curbed. Midwestern industry is the obvious culprit, especially since it is heavily reliant on the high-sulfur coal that is so plentiful in Illinois, Indiana, and Ohio. But a 1983 NAS study concluded that wind and weather patterns make it difficult to pin the blame for a lake's death on any pollution source more than 350 miles away.

Scientists' uncertainty has stiffened Midwesterners' resolve to fight

costly proposals to cut sulfur emissions. "For every lake that will die in the Northeast if acid rain is not controlled," says Krohe, "there is a Midwestern coal town which may die if it is." Already, one-quarter of Illinois's 16,000 coal miners are out of work. If Washington forces Midwestern utilities and factories to shift to low-sulfur coal (mined in the West and in Kentucky and West Virginia), Midwestern coal sales would drop by another 44 to 67 percent. An alternative is to require industrial smokestack "scrubbers" to remove sulfur oxides in existing plants (federal law already mandates them for big new ones). But a single scrubber can cost $200 million. A reduction of eight million tons in annual sulfur oxide emissions would cost $40 billion by 1995.

Krohe doubts that scientists or politicians will be able to agree on what to do about acid rain any time soon. In the meantime, low-cost reductions of acid rain and its effects are possible—coal "washing" to remove sulfur, energy conservation, applying acid-neutralizing lime to lakes. Writes Krohe, "It's hard to imagine an acid-rain program that won't cost anyone anything, [but] it isn't hard at all to imagine one that costs more than it needs to."

ARTS & LETTERS

What Monuments Are For

"A Meaning for Monuments" by William Hubbard, in *The Public Interest* (Winter 1984), 20th & Northampton Sts., Easton, Pa. 18042.

Before it opened on Veterans Day 1982, the modernistic Vietnam Veterans Memorial in Washington, D.C., was scorned by some critics as a "black ditch of shame." The controversy soon faded. Even so conservative an observer as newspaper columnist James J. Kilpatrick wrote upon seeing the monument, "I could not speak. I wept."

Hubbard, a UCLA architect, shared that reaction. What is so moving about the monument—a V-shaped wall of polished black granite, its top level with the ground behind it, sloping down 10 feet into the earth at its vertex—is the roster of 58,000 dead and missing U.S. servicemen carved row after row in the stone. But Hubbard says that tears are not enough. The Vietnam Memorial (like other recently erected monuments) may intensify viewers' emotions, but it does not *clarify* them. The memorial neither gives a symbolic explanation of why the soldiers died nor helps viewers gain perspective on their feelings about the Vietnam War.

Traditionally, Hubbard says, "by asking us to contemplate imaginatively the ideas they embody, monuments prod us to think through the implications of our social ideals." But since World War II, architects have increasingly followed the path blazed by modern artists, creating monuments, buildings, and other structures that are abstract and de-

tached from the real world. Viewers are not supposed to be reminded of (or to reflect on) shared experiences, they are meant to contemplate the unique qualities of the works themselves.

A case in point is the 1970 monument in Dallas commemorating President John F. Kennedy's assassination. Hubbard describes it as a "large hollow cube lifted off the ground and open to the sky, with a vertical slit cut out of the center of two opposite sides." The monument does not seem to focus attention on the tragedy of 21 years ago, he protests, but on "the feeling of enclosed space and the play of light on hard surfaces."

Hubbard does not contend that the Vietnam Memorial should have exalted the war itself. Such a monument, he says, "would have been a sham." Rather, the memorial should have led viewers to ask such questions as: "Is the defense of this land the only justification we will accept for sending young men and women to death in faraway places?"

Art, Hubbard asserts, must help people think about *human* experience. The alternative is "to leave the field in the sole possession of *words*," which do not always alone suffice. A monument that spoke in the symbolic language of the imagination, he believes, might have helped Americans get closer to agreeing on the meaning of Vietnam.

The Secret of Stradivarius

"The Stradivarius Formula" by Joseph Alper, in *Science 84* (Mar. 1984), P.O. Box 10790, Des Moines, Iowa 50340.

For nearly 200 years, no one has been able to duplicate the sound of the stringed musical instruments made during the Renaissance by Antonio Stradivari and by later Italian masters. But the work of a chemist in Texas could change all that, says Alper, a freelance writer.

From the mid-1500s to the late 1700s, a colony of uniquely skilled musical craftsmen flourished in the northern Italian town of Cremona. The violins of Stradivari, Nicolo Amati, and Giuseppi Guarneri were hailed throughout Europe for their rich sound. Today, these Cremonese instruments remain highly prized by musicians: One of the 700 extant Stradivari sold recently for $1.2 million.

Succeeding generations of violin makers have examined the wood, the construction, and the acoustics of Cremonese instruments, but the secrets have eluded them. Now Joseph Nagyvary, a biochemist at Texas A & M University, thinks that he has unlocked the mystery.

He believes that modern craftsmen are the victims of a cruel trick played by Joannes Baptista Guadagnini, one of the last Cremonese masters. The secretive Guadagnini told his patron, Count Cozio di Salabue, that violins must be made from wood untreated by any chemicals. Eager to pass the secret on to posterity, the Count included it in a treatise on the violin. Ever since, craftsmen have used untreated wood.

But after extensive research, Nagyvary is convinced that the great Cremonese instruments were made from wood treated with a variety of mineral solutions that altered the wood's cellular structure and affected the instruments' sound quality. Nagyvary's investigation also re-

vealed that the Cremonese masters used a unique type of varnish. After duplicating the varnish, he stripped and refinished several modern instruments whose sound, he maintains, has been improved.

Is a Nagyvarius as good as a Stradivarius? It's too early to tell, says Alper. Violins take up to 40 years to attain their best tone quality. Although some enthusiasts think that Nagyvary's violins already rank among the greats, most musicians feel that his instruments will have to undergo long scrutiny "from those who make their living playing them."

The Grande Dame Of Modern Dance

"Martha Graham" by Anna Kisselgoff, in *The New York Times Magazine* (Feb. 19, 1984), 229 West 43rd St., New York, N.Y. 10036.

Martha Graham, at age 90 "the most famous dancer and choreographer in the world," is still going strong. Though Graham herself stopped performing in 1969, she continues to choreograph startling new works for the New York dance company that bears her name.

Graham virtually created American modern dance in the late 1920s. Along with Picasso and Joyce, declares Kisselgoff, chief dance critic for the *New York Times*, she has been one of the supreme innovators of 20th-century art. Rebelling against the strict formality of classical ballet, Graham pioneered a style that was raw and powerful, "more jagged

Martha Graham as she appeared in a 1940 performance of Letter to the World.

and filled with tension than even Picasso's forms," Kisselgoff observes. Inspired by the dances of American Indians and other primitive peoples, Graham stressed constant motion in her performances and avoided the fixed positions and poses of classical ballet. Standardizing her repertoire of movements in a training regimen (the "Graham technique") allowed her to pass on her style to disciples, establishing a permanent alternative to ballet.

"I don't want to be understandable, I want to be felt," Graham declares. Her chief principle is that dancing expresses emotions that people will not or cannot express in words. The quintessential Graham movement begins in what she calls "the house of the pelvic truth." The dances are often direct and erotic, enough so that in 1962 two congressmen protested in vain against State Department subsidies for her troupe's cultural exchange tour in Europe. Since Graham herself stopped dancing, however, her company's performances have been without a "mesmerizing focus" and have become cooler and more studied.

Cooler or not, Graham is far from retirement. Last winter saw the premier of two new Graham works. And while some of her younger colleagues now believe that dance should be cerebral and more formal [see *WQ*, Summer 1983, p. 33], Graham continues to insist that dance be a direct form of communication between performer and audience.

Subsidizing The Arts

"Arts Funding: Growth and Change between 1963 and 1983" by Kenneth Goody, in *The Annals of the American Academy of Political and Social Science* (Jan. 1984), Sage Publications, 275 South Beverly Dr., Beverly Hills, Calif. 90212.

It is no accident that Americans no longer associate artists with bleak garrets but with chic Soho lofts. Growing audiences have made painters, musicians, and others in the arts more prosperous. Moreover, reports Goody, a Rockefeller Foundation consultant, arts contributions by government, corporations, and foundations have soared.

In 1963, these three types of institutions gave a total of $40 million to the arts. By 1982, that figure had risen to over $940 million, an 800 percent jump even after inflation. One reason for the surge was the creation in 1965 of the federal government's National Endowment for the Arts (NEA), which last year distributed $131 million to individuals and organizations—painters, film makers, symphony orchestras, dance troupes. And state governments appropriated $129 million for the arts in 1982, up from only $2.7 million in 1966. Also between 1966 and 1982, foundation support grew from $38 million to $349 million, corporate contributions from $24 million to $336 million.

Today, foundations and corporations each supply about 36 percent of the nation's organized arts funding, while the state and federal governments together provide 28 percent (versus seven percent in 1966).

Their inexperience in the arts and lack of knowledgeable specialists do not encourage boldness by foundations and corporations, Goody says. They prefer to help mainstream organizations, such as ballet companies, pay salaries or to support projects that will have broad public appeal. The NEA and the states tend to fund more experimental work. Government programs always risk politicizing the arts, Goody notes. Politicians are often divided over whether to support excellence or encourage "democracy" in the arts. Constituents pressure them for patronage.

Nevertheless, there is strong support for government subsidies in Washington and the statehouses. Despite two recent Reagan administration attempts to cut the NEA budget, federal arts outlays continue to grow. So do state contributions. And while foundations will not increase their donations much in the near future, corporations will as their profits grow. In short, art and poverty are not soon likely to become synonymous again in the United States.

OTHER NATIONS

In Afghanistan

"Report from Afghanistan" by Claude Malhuret, in *Foreign Affairs* (Winter 1983/84), Reader Services, 58 East 68th St., New York, N.Y. 10021.

Four years after invading Afghanistan, the Soviet Army is still bogged down in an inconclusive war. Yet Malhuret, head of the Paris-based volunteer group, *Médecins sans Frontières* (Doctors without Borders), which operates six hospitals in Afghanistan, writes that the conflict is not, as it has been called, "Moscow's Vietnam."

American commanders in South Vietnam (like other Westerners in recent antiguerrilla wars) tried to enlist the villagers against the insurgents. But Soviet generals take a different approach. According to Malhuret, their goal is not winning over the population, but terrorizing it. Mao Zedong once observed that successful guerrillas submerge themselves in the rural population like "fish taking to the water." The Soviet response, Malhuret writes, is to "empty the fish bowl." The huge number of Afghan refugees—some four million of the nation's 15–17 million people have fled to Pakistan and Iran—is not an unintended consequence of war but a result of deliberate Soviet strategy.

There are now about 115,000 Soviet troops in Afghanistan. Since late 1980, heavy casualties inflicted by the Afghan Mujahedeen guerrillas in rugged terrain have forced the Soviets to rely less on ground attacks, more on air raids. Helicopter gunship strikes and the dropping of mines and of booby-trapped toys designed not to kill but to maim—"an injured person is much more trouble [to the rebels] than a dead person," Malhuret explains—have emptied the Mujahedeen's rural strongholds of up to half their population. And large Afghan cities, such as Herāt

and Quandahār, have not been spared Soviet bombs.

The Soviets have not picked an easy task. As yet, they control little of the countryside, and their material losses have not been trifling (e.g., possibly 4,000 armored vehicles over the past five years). The Afghans show no signs of giving up.

In the end, however, Malhuret believes that the Afghan resistance "will probably be beaten." With no real need to answer to world opinion (thanks to what Malhuret calls the "negligence" of the Western press) or to placate its own citizens, the Kremlin can simply outlast the Mujahedeen. During the 1920s and 1930s, Malhuret recalls, the Soviets took 20 years to suppress the Basmachi (bandit) Revolt in their southern Muslim republics. But they did it.

How Well Off Are The Soviets?

"On Infant Mortality in the Soviet Union" by Murray Feshbach and Nick Eberstadt, in *Population and Development Review* (Mar. 1984), The Population Council, 1 Dag Hammarskjold Plaza, New York, N.Y. 10017.

In the Soviet Union, official statistics for the early 1970s reveal a sudden jump in infant mortality. Demographers Murray Feshbach of Georgetown University [see "A Different Crisis," *WQ*, Winter 1981] and Nick Eberstadt of Harvard have argued independently that the change in numbers is symptomatic of widespread ills in Soviet society, a view that has deeply influenced some U.S. policy-makers.

Last year, Fred W. Grupp and Ellen Jones of the U.S. Central and Defense intelligence agencies, respectively, challenged the Feshbach-Eberstadt interpretation [see *WQ*, Winter 1983, pp. 42–43]. They contended that the upsurge—from about 23 to 28 deaths per thousand Soviet births between 1971 and 1974—was largely a statistical mirage, the result of improved medical reporting in the nation's five Muslim republics. But Feshbach says here that even Soviet researchers accept the infant mortality increase as real. Among the explanations for it cited by Dr. A. I. Smirnov of the Soviet State Planning Committee is the fact that an increasing proportion of Soviet births occurs in the "high mortality regions" of Central Asia.

Moreover, Feshbach asks, why would Moscow stop publishing statistics on infant mortality after 1974 if not "to hide an unhappy reality"?

Eberstadt questions much of the evidence used by Grupp and Jones. One Soviet expert they cited, Viktor Kozlov of Moscow's Institute of Ethnography, has since clarified his work, stating that most underreporting of births and deaths was eliminated by the late 1960s. And Eberstadt notes that infant mortality is not the only Soviet "quality of life" indicator that has taken a nose dive. Between the early 1960s and 1976, the last year for which data are available, the death rate per 1,000 people increased dramatically (by up to 43 percent) in almost every age group in the Soviet population.

OTHER NATIONS

Mideast Water

"The War Over Water" by John K. Cooley, in *Foreign Policy* (Spring 1984), P.O. Box 984, Farmingdale, N.Y. 11737.

Oil may be the natural resource that comes most quickly to mind when the Middle East is mentioned, but another liquid is at least as important. "Long after oil runs out," writes Cooley, an ABC News correspondent, "water is likely to cause [Mideast] wars, cement peace, and make and break empires . . . as it has for thousands of years."

Israel has far more industry and irrigated farmland (about 500,000 acres) than its Arab neighbors and thus consumes five times as much water per capita as they do.

Cooley says that the Arabs fear—not without some cause—that Israel seeks to control more of the region's scarce water supplies. He argues that Israel's decision to occupy the West Bank during the Six-Day War of 1967 can be traced, in part, to Israeli concern over two underground aquifers that originate there and supply much of the water for northern and central Israel, including the cities of Tel Aviv and Haifa.

The second major Israeli source of fresh water, filling about 25 percent of the nation's needs, is the Jordan River (tapped by the Israeli National Water Carrier pipeline). The Arabs have constantly tried to reduce the Jordan's flow. Indeed, Cooley believes Arab efforts to divert the Bāniyās River, which rises from Syria's Golan Heights and feeds the Jordan, was one motive behind the Israelis' occupation of the Heights in 1967 and de facto annexation of the area in 1981.

Water is also an important behind-the-scenes factor in Lebanon. One of Syria's preconditions for withdrawing its forces from Lebanon's Bekaa Valley is a guarantee that nobody will tap the Orontes River that flows into Syria. The Israelis seem to have designs on southern Lebanon's Lītānī River, Cooley speculates. Another notable Middle East waterwork is Israel's proposed canal from the Mediterranean to the Dead Sea, which would serve chiefly as a source of hydroelectric power. But the project would also raise the level of the Dead Sea, disrupting Jordan's existing seaside industries and its plans to reclaim some coastal land for agriculture.

During the early 1950s, the United States tried and failed to get the Middle Eastern nations to agree on a plan to share scarce water. Cooley suggests that Washington make a fresh attempt before today's every-man-for-himself attitude leads to a new war in the Middle East.

RESEARCH REPORTS

Reviews of new research by public agencies and private institutions

"Years of Poverty, Years of Plenty."

Institute for Social Research, Publishing Division, Box 1248, Ann Arbor, Mich. 48106. 200 pp. $24.00.
Author: Greg J. Duncan

If you are on the top of the economic heap today, your chances of staying there during the next few years are not particularly good. But neither are you condemned to remain poor next year if you are now.

These are among the findings of Duncan and his colleagues at the University of Michigan's Institute for Social Research; they have followed the fortunes of 5,000 American families since 1968.

Dividing their group into five income "quintiles," they found that "of those who were either at the top or at the bottom levels in 1971, only about half had remained in those relative positions in 1978." The most important factor influencing family fortunes was change in family structure: marriage or divorce, a birth or a child leaving home. Job-related changes, such as layoffs or physical disability, were the No. 2 factor.

During the 1970s, one-third of the 5,000 families enjoyed "dramatic improvements" in income, and one-fifth suffered serious setbacks. In most families, earnings growth kept pace with or exceeded inflation.

Duncan's data also offer a revised portrait of poverty in the United States. Between 1969 and 1978, he found, 25 percent of the U.S. population dropped below the official poverty line at least once. But only 2.6 percent could be classified as "persistently poor"—suffering from poverty in eight or more of the 10 years. For most Americans, poverty is a *temporary* condition.

Even the persistently poor defy many stereotypes. About 68 percent of these chronically poor people live in the South. Only 21 percent live in large cities. One-third are elderly. Duncan does, however, confirm some familiar findings: About 61 percent of persistently poor Americans live in female-headed households; 62 percent are black.

What about welfare? Between 1969 and 1978, Duncan writes, "while nearly one-quarter of the population received income from welfare sources at least once in the decade, only about two percent of all the population could be characterized as dependent." He doubts that there is any sizable welfare "underclass."

Nor is there strong evidence of a self-perpetuating "culture of poverty," Duncan contends. Among young women in the study who left their parents' homes between 1968 and 1976, those who came from families that had been on the welfare rolls were only 1.4 times as likely as other women to join the ranks of recipients.

If anything, fewer Americans collect social welfare benefits from the government than could legally do so; only half of those eligible for food stamps or Supplemental Security Income (for the elderly poor) actually apply for them.

One emerging reality in America, Duncan suggests, is that economic mobility—up and down—is far greater than most social scientists, politicians, or journalists have imagined.

"Nuclear Power in an Age of Uncertainty."

Office of Technology Assessment, U.S. Congress, Washington, D.C. 20510. 293 pp. $10.00.

Civilian nuclear power in America has suffered one blow after another in recent years. The Congressional Office of Technology Assessment (OTA) sees little chance for a recovery without "major improvements" in the technology and management of nuclear power, as well as greater public support.

Currently, there are 81 functioning nuclear power plants in the United States, and 40 more are under construction. Since 1975, 83 reactor projects have been canceled.

The reason is simple: "Nuclear power plants present too many financial risks as a result of uncertainties in electricity demand growth, very high capital costs, operating problems, increasing regulatory requirements, and growing public opposition." Average construction costs for new nuclear plants doubled during the 1970s.

Yet, the OTA believes, these problems are "not insurmountable." And nuclear power may be necessary to meet future U.S. demand for electricity: Coal, the only economical alternative, is a major pollutant. Nuclear plants that avoid unusual regulatory or operational problems can supply electricity at 10 percent less cost than can coal-fired generators.

Among the remedies proposed by the OTA are improved, standardized reactor designs that would minimize chances of error by the engineers who build and operate the plants. In the OTA's view, the recent spate of (nonfatal) mishaps at nuclear plants was caused, in large part, by the "immaturity of the technology" and utility companies' inexperience in managing it. Tightened federal regulation of plant operations is also needed.

Meanwhile, the OTA says, Washington should speed development of new nuclear technologies to replace today's "light-water" reactors.

No "technological fix," however, will assure nuclear power's future unless public confidence is restored. Opinion surveys show that only a third of the public endorses continued nuclear power plant construction; half is opposed. To win over the skeptics, the OTA says, power plant operators will have to do more than maintain good safety records. They will need to avoid even minor mishaps and mistakes.

"Federal Support of U.S. Business."

Congressional Budget Office, U.S. Government Printing Office, Washington, D.C. 20402. 100 pp. $4.50.

U.S. businesses face increasingly keen international competition, much of it subsidized by foreign governments. What sort of help is American industry getting from Uncle Sam?

According to the Congressional Budget Office (CBO), billions of U.S. tax dollars go each year to assist American commerce and industry. But Congress as yet has no plan for, or real control over, the whole.

The CBO report cites three major forms of federal subsidies. During the 1984 fiscal year, the government will directly invest $13.7 billion in energy, agriculture, aeronautics, water transportation, and mining. Of that total, $6.1 billion will be for farm price sup-

ports, the rest largely for research and development.

During 1984, Congress will also transfer $8.8 billion to business in the form of subsidized low-cost loans, most going to rural utilities ($3.7 billion), farmers ($3 billion), and exporters (just under $1 billion).

Tax breaks (or "tax expenditures") for businesses this year will total over $70 billion, most of which will go to manufacturers. The three largest tax breaks will be $18.3 billion for the "accelerated cost recovery system" (depreciation), $16.4 billion for preferential treatment of capital gains, and $15.7 billion for the investment tax credit—all designed to increase business investment.

Excluded from the CBO inventory of federal subsidies are major government defense, health, and housing programs that promote commerce only secondarily. Their annual cost: $300 billion.

The CBO notes two serious weaknesses in American business's federal support system. One is that much of the aid, especially tax expenditures, is lavished during upswings in the business cycle—when profitability is high and help is not needed.

The other is that tax expenditures, which make up the bulk of the aid, are not subject to the annual federal budget review process.

"Network Television Coverage of Economic News."

Institute for Applied Economics, 370 Lexington Ave., New York, N.Y. 10017. 83 pp.

The U.S. economic recovery was in full swing by late 1983. Nearly every statistical indicator—unemployment, employment, inflation, retail sales—showed dramatic improvement. Yet from the way the three TV networks' evening news shows told the tale, viewers might have thought that things were going from bad to worse.

So says the Institute for Applied Economics (IAE), whose researchers monitored the network news broadcasts from July through December 1983. Not surprisingly, 95 percent of the stories that simply transmitted new economic statistics were positive in tone. Unemployment dropped from 10.7 to 8.2 percent during the year; retail sales climbed by 9.1 percent.

But when they did background or illustrative segments, the network producers managed to find a cloud for every silver lining: Of the 104 stories of this kind, about 85 percent were negative.

(The breakdown: CBS aired 35 negative stories, ABC 29, NBC 25. Upbeat reports numbered five, four, and six, respectively.)

Frequently, according to the IAE, the networks reported good economic news but illustrated it with contrary film footage and commentary. On August 16, 1983, for example, the "CBS Evening News" reported that factory output rose a "whopping" 1.8 percent. But it then showed *film* of people waiting in a long line to apply for 11 percent mortgages—a reminder of high interest rates.

In November, unemployment dropped substantially, from 8.7 to 8.4 percent. Yet ABC chose to accentuate the negative. After reporting the news on its December 2 broadcast, it ran a film story about two upper-middle-class men who had been out of work for 18 months. One was contemplating suicide. Anchorman Peter Jennings emphasized that the recovery was not

helping *everybody*.

"Without question," the IAE says, "there continued to be poor, unemployed, homeless, and hungry Americans during the second half of 1983." But the networks virtually ignored the millions of Americans "who were working, who had been returned to work, or who were enjoying the fruits of the economic boom."

"The Fourth Wave: California's Newest Immigrants."

Urban Institute, 2100 M St. N.W., Washington, D.C. 20037. 30 pp. $3.00.
Author: Thomas Muller

Every year, thousands of foreign immigrants, many of them illegal aliens from Mexico, come to California. State residents worry that the newcomers will increase competition for jobs and drive up public spending for welfare, education, and social services.

In fact, says Urban Institute research associate Muller, the steady immigrant influx has played no small part in California's prosperity.

Close to half of the 1,868,000 foreign immigrants who settled in California between 1970 and 1980 were from Mexico. Seventy-two percent of the Mexicans were undocumented aliens and thus limited to unskilled and semiskilled occupations. Almost half of all working Mexicans are employed in manufacturing industries, mostly textiles; one in five is employed in a restaurant, retail establishment, or other service firm.

Advocates of stricter immigration laws argue that Mexicans displace native workers from blue-collar jobs. But Muller notes that unemployment rose less rapidly in Southern California than in the rest of the nation.

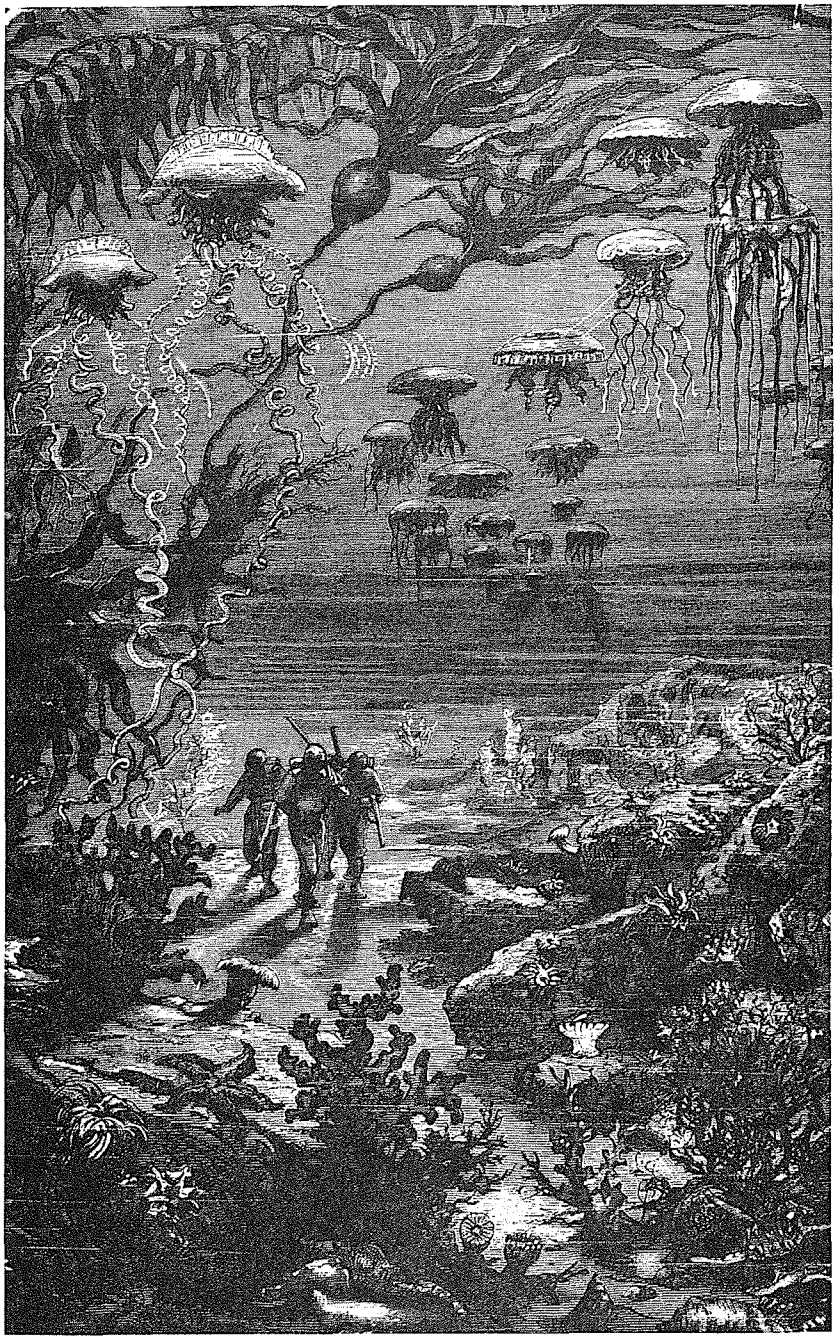
As for claims that immigrants have hindered black Americans' job prospects, Muller states that in cities nationwide "there is no statistical relationship between the size of the Hispanic population and black unemployment." Blacks in heavily Hispanic Los Angeles, for example, recorded larger increases in income than did their counterparts in California cities with fewer Mexicans.

Indeed, Muller argues, Mexican immigrants have broadened economic opportunities in California. The large number of low-wage workers has cut costs for many manufacturing firms that otherwise would not have survived in the face of overseas competition. Muller calculates that 52,000 of California's low-wage manufacturing jobs would not exist without Mexican immigrant workers.

The number of jobs in California is expected to increase by about 25 percent by 1990. A declining state birthrate and the apparent end of women's shift into the labor force mean that native Californians can satisfy only 40 percent of the demand for labor. Continued immigration is necessary if California's economy is to grow.

The immigrants from the South do drive up public spending. The average Mexican immigrant household receives $2,000 more in services from the state (public schools and hospitals, welfare) than it pays in taxes. In Los Angeles County, such households receive $460 more from the local government than they pay in taxes.

But Muller does not see such outlays as a major cause for concern. He is more worried that California's schools may be too overwhelmed to help integrate the immigrants' children into the economic mainstream and that the state will not be able to create enough good jobs to allow the newcomers to climb the economic ladder.



Captain Nemo and companions in the forest of Crespo, from Jules Verne's Twenty Thousand Leagues under the Sea *(1870). "It was then ten in the morning," the narrator recalls, "the rays of the sun struck the surface of the waves at rather an oblique angle, and at the touch of their light, . . . flowers, rocks, plants, shells and polypi were shaded at the edges by the seven solar colors."*

The Oceans

"Man marks the earth with ruin—his control / Stops with the shore." So it was when the poet Lord Byron wrote those words in 1812. In the century and a half since then, man's understanding of the marine environment has rapidly advanced. Man has also come to rely heavily on the oceans for food and fuel. One day, he may tap the sea-bed as an important new source of key minerals. Men and governments have yet to mark the seas with ruin, but preventing ruin, given man's proclivities, has not been easy. Here, marking the Year of the Oceans, historian Susan Schlee chronicles the evolution of marine science; political scientist Ann Hollick considers the use and misuse of the oceans and the United Nations' decade-long attempt to fashion a workable Law of the Sea amid conflicting interests and ideologies.

SCIENCE AND THE SEA

by Susan Schlee

From outer space, Earth resembles a ball of azure liquid. With nearly 71 percent of its surface covered with water, the planet has been aptly called the "blue drifter." Even the white whorls of clouds that embroider the planet's atmosphere are vaporous extensions of the oceans below.

The seas have long piqued man's curiosity, and he has imbued them with his fondest hopes and his most poignant fears. In the Babylonian epic of Gilgamesh, based on tales told nearly 5,000 years ago, the hero poles his way across a Sea of Death in search of a plant, flowering on a river bottom, that promises eternal life. Many centuries later, the power of the "wine-dark sea" to help, and of the "solid deep-sea swell" to harm, was evoked by Homer in *The Odyssey*. During the Dark Ages, the

poets who composed the Icelandic sagas sang of "ocean-striding ships" moving across broad expanses of the Atlantic. Upon their death, Norse kings were "launched alone across the ocean" in flaming funeral barks.

The oceans seem to have had a stimulating effect on the peoples who have known them best. Sailors learned early how to predict the tides, navigate by the stars, and use the trade winds. At least until the Middle Ages, the art of fishing was far more advanced than that of farming, and until the evolution of the railroad, travel by sea was faster and easier than travel by land. The ocean-going vessel was a marvel of continually improving technology; by contrast, the horse-drawn carriage changed little in millennia. The first great empires were maritime empires, not land empires, and historically it has been the restless, voyaging, maritime peoples, not their landlocked neighbors, who have put the greatest distance between themselves and barbarism.

Fringe Benefits

Curiosity, new technology, the prospect of political or economic gain—these three factors, not always acting in concert, impelled man to extend his domination over the seas. Scientific inquiry on a significant scale, though a product of more recent times, has been shaped by those same conflicting motivations. Oceanography, as a result, has developed, during its short life, in a haphazard and sometimes lopsided way.*

Although we can reach back into antiquity and find men theorizing about the origin, character, and extent of the sea, the observations made from the sixth century B.C. through the 17th century A.D. were isolated ones that, even when correct, did not prompt any profound appreciation by man of the interaction of ocean phenomena.

As late as the 17th and early 18th centuries, most marine studies were conducted on land and focused on a single aspect of ocean dynamics in isolation from others. Examples include

*In French, the word "*océanographie*" was used during the late 1500s, but did not survive. It reappeared in 1878 (in the *Grand Dictionnaire Universal*) and was defined as "*la description de l'océan.*" During the early 1880s, the German chemist William Dittmar was among the first to use the word "oceanography" in English, and by the close of the century, it was in common use.

Susan Schlee, 44, is a writer who specializes in oceanography. Born in New York City, she received a B.A. from Vassar in 1961 and subsequently studied oceanography at Duke University. A resident of Woods Hole, Massachusetts, she is the author of On the Edge of an Unfamiliar World *(1973) and* On Almost Any Wind: The Saga of the R/V *Atlantis (1978).*

THE LURE OF THE SEA

Herman Melville used the opening pages of his novel, Moby Dick *(1851), to reflect on the peculiar visual attraction of water. "Were Niagara but a cataract of sand," he asked, "would you travel your thousand miles to see it?" An excerpt:*

Whenever I find myself growing grim about the mouth; whenever it is a damp, drizzly November in my soul; whenever I find myself involuntarily pausing before coffin warehouses, and bringing up the rear of every funeral I meet; and especially whenever my hypos get such an upper hand of me, that it requires a strong moral principle to prevent me from deliberately stepping into the street, and methodically knocking people's hats off—then, I account it high time to get to sea as soon as I can. This is my substitute for pistol and ball. With a philosophical flourish Cato throws himself upon his sword; I quietly take to the ship. There is nothing surprising in this. If they but knew it, almost all men in their degree, some time or other, cherish very nearly the same feelings towards the ocean with me.

There now is your insular city of the Manhattoes, belted round by wharves as Indian isles by coral reefs—commerce surrounds it with her surf. Right and left, the streets take you waterward. Its extreme down-town is the battery, where that noble mole is washed by waves, and cooled by breezes, which a few hours previous were out of sight of land. Look at the crowds of water-gazers there.

Circumambulate the city of a dreamy Sabbath afternoon. Go from Corlears Hook to Coenties Slip, and from thence, by Whitehall, northward. What do you see?—Posted like silent sentinels all around the town, stand thousands upon thousands of mortal men fixed in ocean reveries. Some leaning against the spiles; some seated upon the pier-heads; some looking over the bulwarks of ships from China; some high aloft in the rigging, as if striving to get a still better seaward peep. . . .

Why is almost every robust healthy boy with a robust healthy soul in him, at some time or other crazy to go to sea? Why upon your first voyage as a passenger, did you yourself feel such a mystical vibration, when first told that you and your ship were now out of sight of land? Why did the old Persians hold the sea holy? Why did the Greeks give it a separate deity, and own brother of Jove. Surely all this is not without meaning. And still deeper the meaning of that story of Narcissus, who because he could not grasp the tormenting, mild image he saw in the fountain, plunged into it and was drowned. But that same image, we ourselves see in all rivers and oceans. It is the image of the ungraspable phantom of life; and this is the key to it all.

Robert Boyle's "Observations and Experiments on the Saltness of the Sea" (1674) and Sir Isaac Newton's explanation of the tides (1684).

The situation began to change after 1750, the impetus being partly economic. As European seafarers ranged across the oceans seeking new sources of gold, spices, and, later, raw materials, as well as new markets for finished goods, many governments created special bureaus to produce nautical charts and other aids to navigation. Some scientific work was accomplished as a fringe benefit.

In Britain, for example, the Admiralty during the 18th century made a practice of sending scientists along on government-sponsored surveying expeditions, such as those conducted by Captain James Cook between 1768 and 1779. At first, these specialists were interested primarily in gathering data on the stars and tides, but eventually naturalists were taken aboard to collect plants and animals from both land and sea. That is how Charles Darwin secured a berth on HMS *Beagle* sailing from Plymouth in 1831.

Lifting the Veil

Meanwhile, European scientists working without government help began studying the gulfs, shoals, and bays closer to home. Scholars interested in what would today be called marine biology spent their vacations exploring shallow coastal waters. The Danish biologist Otto Müller spent four summers during the 1770s off the southern coast of Norway, trying to dredge up sediment from the sea bottom at a depth of 180 feet. Müller concluded that research at sea "abounds with expense and many forms of danger." In spite of the difficulties, amateur and professional scientists were increasingly drawn to the sea, and summer collecting trips enjoyed tremendous popularity.

More taxing intellectually were chemical and physical studies of the sea. In France, chemist Antoine Lavoisier published an (imperfect) analysis of seawater in 1776. In Britain, Charles Blagden, in 1788, related the variable freezing point of water to the concentration of dissolved substances it contained. And by 1820, the retired French physician, Alexander Marcet, had shown that seawater from different parts of the ocean contains the same ingredients, and in approximately the same proportions.

In physics, the French mathematician Marquis Pierre Simon de Laplace, in 1773, elaborated on the Newtonian explanation of the tides; Austria's Franz Joseph von Gerstner, in 1802, published the first theory of surface waves in deep water; and

Gaspard Gustave de Coriolis, in 1835, described the force named after him—the Coriolis Force—which deflects winds to the right in the Northern Hemisphere, to the left in the Southern Hemisphere. The Coriolis Force became an important element in the calculation of ocean currents.

In the United States, oceanographic studies became a kind of seaward extension of the new republic's rapid territorial gains. Early research was supported by three important government agencies, created by Congress to help extend the life expectancy of sailors, minimize the loss of cargo, and maximize the catch of fish and whales.

The Ocean's River

The first of these agencies was the U.S. Coast Survey (now the National Ocean Survey), established in 1807 to chart the nation's coastal waters. Between 1843 and the Civil War, the Coast Survey was headed by Alexander Dallas Bache, great-grandson of Benjamin Franklin. Under his guidance, the survey undertook the first sustained study of the Gulf Stream, whose "qualities as hindrances and aids to navigation," Bache told Congress, "require that the navigator should be well informed in regard to it." Coast Survey scientists made 14 "transects" across the Gulf Stream between Florida and New Jersey, taking soundings, sampling temperatures, and collecting sediments.

Later, during the 1880s, the Coast Survey's John Elliot Pillsbury, a Navy lieutenant, measured the currents and countercurrents within the Gulf Stream from an anchored ship. "In a vessel floating [i.e., adrift] on the Gulf Stream," Lieutenant Pillsbury wrote, "one sees nothing of the current and knows nothing but what experience tells him; but to be anchored in its depths far out of the sight of land, and to see the mighty torrent rushing past at a speed of miles per hour, . . . one begins to think that all the wonders of the earth combined can not equal this one river in the ocean."

The Gulf Stream, we now know, carries roughly 1,000 times the volume of the Mississippi River: It pours some 70 million tons of water per second through the Straits of Florida. Evidence supplied by drift buoys suggests that by the time it reaches the Grand Banks off Newfoundland its internal structure consists of baroque spirals of eddies and countercurrents. Joined here by the Labrador Current, what is left of the Gulf Stream becomes the eastward-flowing North Atlantic Current, which eventually makes its way south as the Canary Current, then turns west and becomes the North Equatorial Current. The Gulf Stream is thus

American pioneers on a new frontier: the Coast Survey's Alexander Dallas Bache (left); Matthew Fontaine Maury of the Depot of Charts and Instruments (center); and the Fish Commission's Spencer Fullerton Baird (right).

but one portion of an enormous, clockwise gyre.

While Alexander Dallas Bache and his successors at the Coast Survey studied coastal waters, a second government agency, the Navy's Depot of Charts and Instruments (now the Naval Oceanographic Office), was turning its attention to conditions on the high seas. Founded in 1830 as a storage facility, the depot quickly evolved into a clearing-house for information on marine meteorology and physical oceanography. Directed between 1842 and 1861 by a strong-willed, self-taught polymath, Lt. Matthew Fontaine Maury, U.S. Navy, the depot was soon publishing wind and current charts for all of the most frequently traveled sea routes in the world. Maury gathered the necessary information by distributing thousands of "short-form" logs to merchant captains and requesting that they fill out the logs as they traveled. From these, Maury constructed monthly wind and current averages for each five-degree section of the ocean that lay across commercial shipping routes. Sea captains soon discovered that it was well worth their while to sail one of Maury's recommended routes which, though usually longer in miles, were graced by favorable winds and currents.

Encouraged by his success and rewarded by Congress with a growing budget, Maury turned to more ambitious explorations. Beginning in 1851, he sent a makeshift research vessel, the *Dolphin*, on three Atlantic cruises. Her crew used the Brooke Patent Sounding Lead, a device that measured the depths of the ocean quite reliably and, as a bonus, brought up samples of sea-floor oozes in its small sounding cup.

Maury used the 200 deep soundings made by his ships to

compile the first bathymetrical map of the North Atlantic basin in 1854. From the small number of soundings at his disposal, it was as accurate as could be expected. While the original edition of the map included an imaginary depression (seven to eight miles deep) off the Grand Banks, it also showed a broad rise in the middle of the Atlantic—what Maury called the "Dolphin Rise"—which was the first indication of the extensive Mid-Atlantic Ridge. This ridge, oceanographers later learned, is part of a massive, continuous chain of undersea mountains that winds for 34,000 miles underneath the Atlantic, Pacific, Indian, and Arctic oceans.

In 1855, just a year after his contour map appeared, Maury published an immensely popular book, *The Physical Geography of the Sea*. Readers across Europe and America were captivated by Maury's rolling style and his startling facts and speculations. Jules Verne, author of *Twenty Thousand Leagues under the Sea* (1873), was so impressed that he mentioned the lieutenant by name in the novel and borrowed heavily from *Physical Geography* for his information about the sea. Scientists were not quite as enthusiastic. Much of Maury's information, they knew, was wrong, or correct but poorly explained. Nevertheless, the book brought marine science for the first time to the attention of a wide audience.

'This Thing Called Science'

The third federal agency to take up marine exploration was the United States Fish Commission (now the Bureau of Fisheries). The commission was organized, in 1871, by Spencer Fullerton Baird, the assistant secretary of the Smithsonian Institution. While assuring Congress that a fish commission would help the country's fishing industry, Baird was in fact more interested in launching a sustained ecological study of North American waters. Within a decade of his appointment, Baird had convinced Congress to pay for the country's first specially-built oceanographic research vessel (the 234-foot steamer *Albatross*) and to build a laboratory at Woods Hole, Massachusetts, on Cape Cod. Every summer, scientists and graduate students came from universities throughout the East to collect shallow-water animals and study the life cycles of fish or the diseases and parasites that affected them. Friends and colleagues of Baird soon set up a second research institution at Woods Hole, the privately operated Marine Biological Laboratory (MBL).

Unfortunately, the Fish Commission's productive period

was cut short by Baird's death in 1887. Moreover, as shipping and maritime interests in the United States declined relative to inland industrial development, Washington grew increasingly ambivalent toward what one Congressman called "this thing called Science here." The directorship not only of the Fish Commission but also of the Coast Survey and the Depot of Charts and Instruments became a political appointment; all three agencies were forced to confine their endeavors to more immediately utilitarian pursuits. "The Fish Commission is hardly in condition to do more than attend to the problems they have in hand," lamented biologist Alexander Agassiz in 1902. In short, by the turn of the century, oceanographers in America were becalmed.

Across the Atlantic, meanwhile, marine science was developing along vastly different lines. To British, French, German, and Scandinavian naturalists, who had started collecting and cataloguing local shallow-water animals almost 100 years before the Americans did, the most exciting prospect during the

THE OCEANS: SOME FACTS AND FIGURES

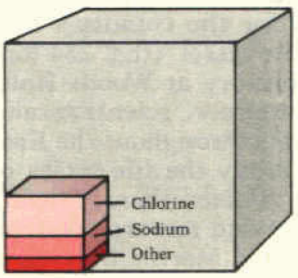
Area: 139.5 million square miles, covering 70.8 percent of the Earth's surface (including almost all of the Southern Hemisphere).

Volume: 318 million cubic miles.

Mean depth: 12,216 feet, or 2.3 miles. The Pacific is, on average, deeper than any other ocean; the Arctic, on average, shallower. Deepest recorded point (38,635 feet) is in the Pacific basin's Marianas Trench.

Mean Temperature: 39 degrees Fahrenheit.

Pressure: One atmosphere (i.e., one kilogram per square centimeter, or 14.7 pounds per square inch) at sea level, increasing by one atmosphere with each 10 meters (32.8 feet) of depth.



Composition: Seawater contains about 35,000 parts per million (ppm) of dissolved solids, mostly chlorine and sodium but also including significant amounts of magnesium (1,350 ppm), sulfur (885 ppm), calcium (400 ppm), and potassium (380 ppm). Though not commercially exploitable, traces of almost all known elements can be found in the oceans. Some 45 pounds of gold is dispersed in each cubic mile of seawater.

mid–19th century was that of studying the creatures of the deep, or *abyssal*, sea. That seemingly impractical fascination led the Europeans to organize the first purely oceanographic expeditions. This they could do because, unlike Americans, educated Europeans were accustomed to supporting the esoteric projects of scientific societies such as the British Association for the Advancement of Science or the *Institut de France.*

The Big Picture

European scientists had long held the sensible belief that the cold and black abyss, which stretched for unmeasured miles below the reach of fishermen's nets, could not possibly harbor any living things. The eminent Manx naturalist, Edward Forbes, contended during the 1840s that below 300 fathoms there was "a probable zero of life." That view changed dramatically during the middle of the 19th century, when bottom surveys by cable companies and the dredging done on polar expeditions inadvertently turned up a menagerie of starfish, tube worms, and other exotic creatures living in the depths.* As a result, wrote the Scottish botanist, C. Wyville Thomson, "the land of promise for the naturalist . . . [became] the bottom of the deep sea."

Thomson was director of Britain's *Challenger* expedition, the most important oceanographic effort of the 19th century. Between December 1872 and May 1876, the Royal Navy's 226-foot corvette *Challenger* circumnavigated the globe at a brisk "walking" pace, covering 68,930 miles and along the way collecting more than 13,000 new varieties of animals and plants, nearly 1,500 water samples, and hundreds of bottom deposits (including the first manganese nodules, which today lure those who would attempt to "mine" the ocean floor). The real work began when the ship returned to England. Over the course of the next two decades, subsidized by the Treasury, 76 scientists contributed to the 50-volume *Report on the Scientific Results of the Voyage of HMS* Challenger.

Here the grand outlines of oceanography were first drawn. By 1895, when the last of the *Report*'s volumes appeared, the bare bones that the *Challenger* staff had to some extent discovered, and to a greater degree arranged, had been fashioned into a skeleton that would support the further discoveries of oceanographers for many years, with remarkably few alterations. Es-

*The first transatlantic cable was laid by the Atlantic Telegraph Company in 1858. It failed after transmitting 723 messages, and a permanent connection was not established until 1866. Then as now, the needs of commerce encouraged some basic oceanographic inquiry: What is the texture of the sea floor? How corrosive is seawater? What are the teething habits of large fish that might chew on cables?

pecially in the fields of zoology and geology, later exploration filled in the blanks—discovered deeper trenches, a few more animals—but left the picture of the oceans much as it had been drawn in the *Challenger* report.

Sampling the Bottom

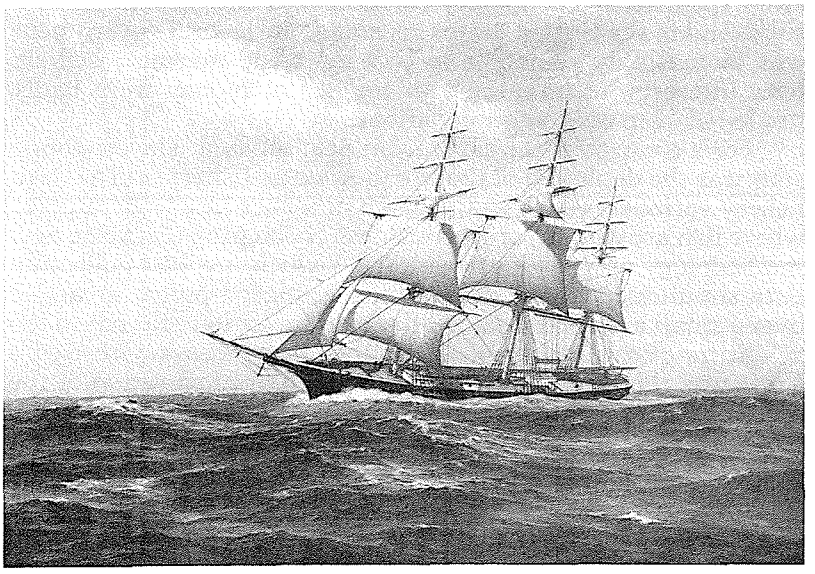
The expedition's profound impact on marine geology illustrates the point. When the *Challenger* put to sea in 1872, the sea floor lying off the immediate coastlines of busy maritime nations had already been mapped; scattered observations of depths and sediments (like the few made by Maury) had been made in the deep sea. But no one knew much about either the configuration of the ocean basins or their coatings of sediments.

Using dredges and trawls to gather sediments and various sounding devices to measure depth, the men aboard the *Challenger* found that coastal zones are filled with a jumble of rock and gravel that has been washed off the continents, primarily by rivers. At intermediate depths, the ocean floor is covered mostly by organic oozes. These are largely composed of planktonic shells and skeletons that, as Sir John Murray, second in command of the expedition's scientists, rightly concluded, are the remains of surface plankton that have "rained" on the bottom.* Below 2,500 fathoms, the nature of sea-floor sediment changes again—to a reddish brown clay. The reason: Pressures at these depths are so great (up to several tons per square inch) that the lime-like planktonic debris is dissolved before it reaches the bottom.

The slowly accumulating red clay, which Murray remembered as "soft, plastic, and greasy," also elicited considerable interest aboard the *Challenger*. Some of the clay consisted of volcanic material and minerals obviously blown from land. But Murray discovered that, if he dissolved bottom clay in a basin of water and stirred the mixture with a magnet wrapped in ironpaper, he could collect scores of metallic particles of a type not found in terrestrial rocks. These, he surmised, were thrown off by meteorites passing through the Earth's atmosphere. It is estimated today that from 35,000 to one million tons of cosmic matter plummet into the oceans every year.

In the very deepest portions of the oceans—five miles

*The term "plankton" was not actually coined until 1887, when biologist Victor Hensen used it to describe all the plants and animals in the sea that drift passively. A feathery mat of sargasso weed is plankton, as are fish eggs and larvae, but most members of Hensen's community are microscopic and many are transparent. Gradually the idea developed that plant plankton (phytoplankton) formed the same basis for life in the sea that land plants formed for animal life on Earth.



Thanks to Matthew Fontaine Maury's wind and current charts, clipper ships could save as much as a month on the 15,000-mile passage from New York around Cape Horn to San Francisco. The Flying Cloud *(above) made the trip in 89 days—a record—on her maiden voyage in 1851.*

down and more—still another kind of sediment was encountered, "radiolarian ooze." The *Challenger* first came across it in the eastern Pacific near the island of Guam. By chance, the ship hove to over what is now called the Marianas Trench, and a sounding was made in 4,475 fathoms of water. The sounding tube returned with a sample of straw-colored clay. When examined under a microscope, the clay was found to be composed of the glassy skeletons of small planktonic animals called radiolarians. These delicate creatures, shaped like stars with a hundred arms or like clusters of minute glass bubbles, live near the ocean surface like other kinds of plankton. But because their skeletons are made of silica, their remains do not dissolve as they lazily trickle down through five miles of water. Some 3,500 new species of radiolarians were discovered on the *Challenger* expedition.

Oceanography's status during the early 20th century was both potentially promising and curiously directionless. Practitioners of the young science had a vast new field to explore and new technologies at their disposal. But there were problems. In Europe, governments quickly grew weary of financing expen-

sive expeditions that merely corroborated the *Challenger*'s results. And in the United States, as noted, the federal government was increasingly reluctant to pay for basic marine research. New interests, techniques, and sources of money were badly needed to keep oceanography afloat.

For a time, all three came from Scandinavia. The economic spur was the depletion of the North Atlantic fisheries. (The term fishery variously refers to the catch of a particular fish, a place where fish are caught, or the business of catching fish.) The new methodology was "synoptic studies," which involves collecting data simultaneously at several closely spaced points arranged over a small area of the sea. And the organization that posed the scientific questions and coordinated the necessary research fleets was the International Council for the Exploration of the Sea (ICES), established in 1902.

Counting the Rings

Four times a year, each of the eight nations originally comprising the ICES—Norway, Sweden, Denmark, Finland, Germany, the Netherlands, Russia, and Britain—sent a research vessel into the Baltic or North seas, or the eastern North Atlantic on a specified date. The ships carried standardized thermometers, nets, water bottles, and other apparatus; each vessel serviced a tight grid of stations or data-collecting points. Once analyzed, the data from these cruises were sent to the council's headquarters in Copenhagen, where the thousands of physical measurements and plankton counts were synthesized into "snapshots" of the sea at given moments. The council's ultimate aim, in the words of one member, was to "tell the commercial [fishing] world how far greed might safely go."

The ICES brought European fishery scientists into contact with meteorologists and chemists. New projects were begun almost annually. Once biologists learned how to tell the age of fish—by counting the growth rings on their scales—the important concept of "year classes" was formulated, helping to explain why fish populations fluctuated so widely over time.*

*The Norwegian zoologist Johan Hjort discovered before World War I that the population dynamics of fish were very different from those of other animals, and that major fluctuations in fish populations were caused by the variable size of each age cohort or "year class." Hjort found that, every so often, when environmental conditions were just right, a particular species in a particular area would spawn an unusually large generation that would dominate the population for years to come. (Hjort showed, for example, that spring herring born in 1904 accounted for 43 percent of the herring catch in 1909, 77 percent in 1910, and more than 70 percent in 1911.) When conditions were poor, a "year class" might be abnormally small.

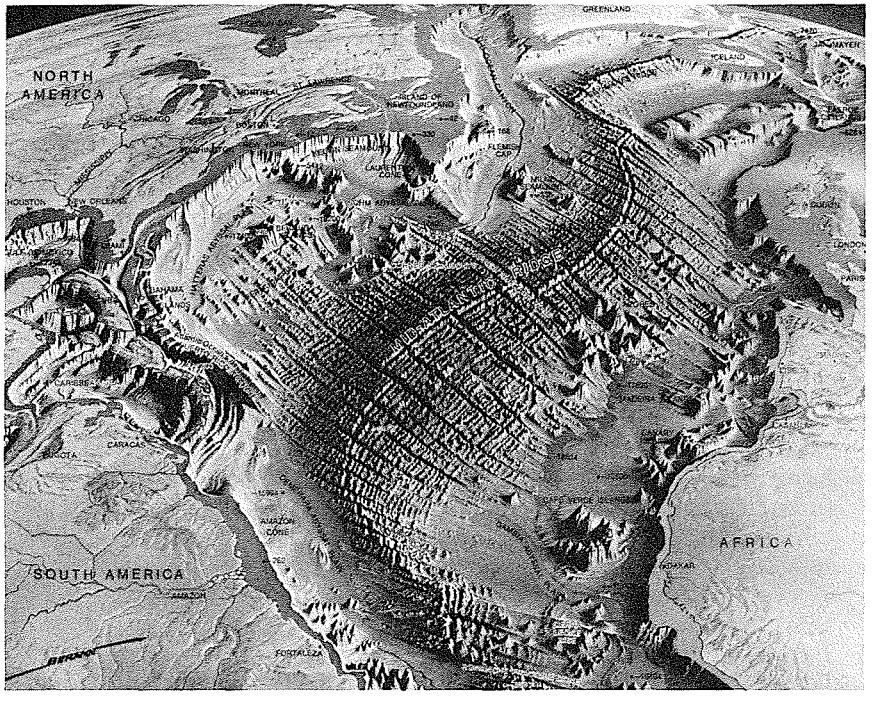
Biologists sampled the seas to measure the availability of plankton and thereby estimate potential fish concentrations from place to place. Meteorologists studied the geostrophic, or "turning," tendencies of ocean currents and developed the so-called dynamic method of current calculation, which Admiral Edward ("Iceberg") Smith adopted during the 1920s to aid the International Ice Patrol in tracking icebergs.

Summer School

The influence of the ICES was felt by scientists worldwide, and oceanographers soon ranked the importance of the council's work with that of the *Challenger* expedition. As the eminent American biologist Henry Bigelow remarked, for almost four decades the council "controlled the lines along which oceanography . . . advanced" in northern Europe. In the United States, however, modern ocean science remained in its infancy, confined to a handful of private laboratories on the Atlantic and Pacific coasts. There, part-time investigators struggled to use the new ICES methods without sufficient ship time or money.

In California, the Scripps Institution for Biological Research (now the Scripps Institution of Oceanography, at La Jolla) was begun, in 1892, as a portable laboratory-in-a-tent. Founded by biologist William Ritter, the informal collecting station took up a new location each summer, until Ritter had the good fortune to meet the wealthy newspaper baron, E. W. Scripps, and his sister, Ellen. They agreed to support his work. By 1906, Ritter had acquired a research ship and land on which to build a permanent laboratory. Unfortunately, for several decades, despite the Scripps family's generosity, a severe financial pinch limited the range of work done at Scripps. Not until the early 1940s, with the failure of the sardine fishery and the onset of World War II, did state or federal governments find compelling reasons to pour money into oceanography.

On the East Coast, the Woods Hole Oceanographic Institution (WHOI—"Whooey," as it is sometimes called) was organized in 1930. The laboratory built on the traditions and facilities of older institutions already established in Woods Hole, notably the Marine Biological Laboratory. Indeed, it was MBL director Frank Lillie who, in 1925, had urged the Rockefeller Foundation to make money available for a new oceanographic institution. The foundation eventually came through with $3 million. Within a year of its creation, WHOI had a three-story laboratory building, a new steel-hulled ketch (the *Atlantis*), and a distinguished director (Henry Bigelow).



A portion of the midocean ridge snakes beneath the Atlantic Ocean. Thanks to European and American interest, the North Atlantic has been the most thoroughly explored of any body of water. By contrast, much of the sea-bed terrain in the Southern Hemisphere has never been accurately mapped.

For a decade, WHOI was a summertime laboratory with a staff made up of a dozen university professors and their graduate students. The *Atlantis* made weekly cruises; regardless of the delicacy of digestive systems, all were expected to go to sea.* Much of the work done from the rolling decks of the *Atlantis* during the 1930s was biological. The ketch crisscrossed the Gulf Stream and Georges Bank, trailing plankton nets. Scientists measured the intensity of light at different depths to ascertain the limit of plant growth by photosynthesis. Summer workers produced studies on everything from "The Role of Bacteria in

*Except women, who were routinely excluded from oceanographic cruises until the late 1950s. The reason usually given involved the ships' primitive plumbing, but one female stowaway on a WHOI vessel during the 1950s discovered that a far more important reason was the sailors' and scientists' firm belief that a research ship, like Huck Finn's raft, was a floating male refuge, where all hands were free to sweat, swear, play poker, and generally ignore the polite conventions. Today, less than 12 percent of the nation's 1,357 oceanographers are women.

the Cycle of Life in the Sea" to "Marine Erosion of Glacial Deposits in Massachusetts Bay." After Labor Day, most of the staff and all of the students returned to their universities. Often, the remaining scientists then sailed south on the *Atlantis* to work the Caribbean or Gulf of Mexico.

Helping the Navy

Some of the *Atlantis*'s winter duties during the late 1930s involved military problems. Oceanographers had worked intimately with the Navy during World War I to perfect the echo-sounder as a submarine detection device. (Sonic depth finders were later used to make profiles of the topography of the ocean floor.) While collaboration was infrequent during the years between the wars, Henry Bigelow did agree, in 1937, to send the *Atlantis* to the U.S. naval base at Cuba's Guantánamo Bay to help explain why the Navy's new directional sonar system refused to work on sunny afternoons.

The destroyer *Semmes* had been equipped with a sonar system that swept a beam of sound through the water like the beam of light from a flashlight. With this beam, the destroyer's crew attempted to locate a companion submarine, which cruised beneath the bay. Men with earphones sat deep in the ship, listening for the echoes that should bounce off the submarine when it came within sonar range. The sonar operators found that they could track the submarine every morning; but during the afternoons, something frequently went wrong, especially on windless days when the hot sun glared off the deep blue waters of the bay.

That is when WHOI was called in. After two weeks of shadowing the *Semmes*, the scientists aboard the *Atlantis* came up with an explanation. They discovered that in the mornings, the surface water of Guantánamo Bay was fairly well mixed; although the temperature of the water dropped with depth (and temperature was known to affect the speed of sound), the gentle gradient did not greatly distort the sonar's beam. On hot afternoons, however, a thin layer of very warm water formed over the cooler, deeper water, and the abrupt gradient, or "thermocline," bent the sonar's beam so badly that the submarine could come right up to the destroyer without being detected.

Obviously, a thorough understanding of how the temperature of the sea affected sound transmission was essential for effective submarine and antisubmarine warfare. While few men in or out of the Navy realized it at the time, the two weeks of research done on the *Atlantis* helped open the door to an enormous

expansion in ocean science.

World War II lifted American oceanography out of the doldrums. It contributed to the ascendancy of physical and geophysical studies over marine biology. And it abruptly pushed the United States into the lead within the international oceanographic community, a position that it has retained.

A New Earth

Spurred by urgent needs for everything from accurate wind and wave predictions, which would aid amphibious landings, to an understanding of the sea-floor distribution of different ocean sediments (which distorted sonar pulses in distinctive ways), wartime Washington poured so much money into Scripps, Woods Hole, and other research laboratories that the budgets of these institutions had to be kept secret. The size of their staffs increased as much as 10-fold, and operations shifted from seasonal to year-round. Scientists could be found hanging hundreds of painted metal squares beneath local fishing wharves to see which compounds best resisted fouling. Others developed instruments such as the bathythermograph, which depicted temperature variations by depth and helped U.S. submarine crews "hide" acoustically from Japanese sonar. The contribution of oceanography to the war effort was significant. But it was dwarfed by the contribution of the war effort to oceanography.

Immediately after the war there was, to be sure, some question as to what role, if any, the federal government would play in ocean science. But before long, as the Cold War got under way, the Navy, the Atomic Energy Commission, the new National Science Foundation (1950), and other government agencies adopted a policy of long-term financing.* The postwar period became the time of real gain for oceanographers. Although the necessities of war had increased their numbers and the variety of their equipment, it was only in the years that followed that these strengths could be used for a basic investigation of the sea.

One of the most dramatic examples of postwar progress was provided by geologists and geophysicists, who developed an entirely new concept of the nature of the Earth's surface. Instead of

*In 1982 alone, the federal government spent some $1.2 billion on marine science, including $375 million for Pentagon-sponsored research, $321 million to support the ocean-related activities of the National Oceanic and Atmospheric Administration, and $105 million for ocean research funded by the National Science Foundation. In addition, many corporations now finance various types of marine research, usually associated with resource extraction. No precise figures are available.

SEA-FLOOR SPREADING

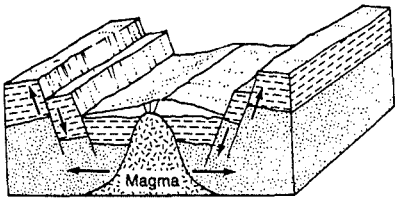
In The Origin of Continents and Oceans *(1915), geophysicist Alfred Wegener, noting the "fit" of the coastlines on either side of the Atlantic, advanced the theory of continental drift. He suggested that 100–200 million years ago there existed a single large continent, Pangaea, that was subsequently fractured into the seven major land masses that we have today. However, Wegener was unable to explain "what forces have caused these displacements." The answer was found not on land but under the sea, as investigations of the ocean floor yielded the theory of plate tectonics. Physicist Jean Francheteau explains:*

From the point of view of the earth scientist, our planet probably should be called Ocean rather than Earth, not only because 70 percent of it is covered by water but also because 60 percent of its solid surface is covered by the thin crust that is manufactured in a unique geologic mill at midocean.

In plate-tectonic theory the crust and the upper mantle of the earth are divided into the lithosphere, or strong layer, and the asthenosphere, or weak layer. The lithosphere includes the crust and part of the upper mantle. [It] is broken up into a set of fairly rigid plates that are much like rafts floating on the less rigid material of the asthenosphere.

The plates move at a rate of a few centimeters per year with respect to each other, and the boundary between two plates can be described according to the relative plate motion. At divergent boundaries the plates separate. At convergent boundaries the plates move toward each other, and one plate generally plunges under the other and into the asthenosphere in the process called subduction. At transform boundaries the plates slide past each other. The spreading center of the midocean ridge, where molten rock from the mantle is injected into the crust, is a divergent plate boundary.

The injection of magma, or molten silicate liquid, plugs the gap left by the moving apart of the plates [see diagram below]. The plates continue to diverge, however, and the plug is ultimately rifted open. A new cycle . . . begins. Meanwhile the crust formed in the previous round of upwelling is moving outward from the spreading center.



THE OCEANS AND CLIMATE

Weather (which exists in the short-term and changes quickly) and climate (which exists in the long-term and changes slowly) are determined by the interactions among water, air, land, and ice. The oceans, vast reservoirs of solar energy, play a generally stabilizing role. Slow to gain or lose heat, they warm the atmosphere during winter and cool it during summer, moderating extremes of temperature.

"In a sense," writes oceanographer Alastair Couper, "the atmosphere and the oceans constitute a single system of two fluids interacting with each other." The complicated feedback loops between these fluids—the chemical transactions, the interplay of winds and currents—are still not well understood. One question mark involves the impact of the sea on the level of carbon dioxide in the atmosphere, which is known to be increasing at a historically unprecedented rate (thanks largely to the burning of fossil fuels). There is 60 times more carbon dissolved in the ocean than exists in all the gaseous carbon dioxide of the atmosphere. To what extent does the sea regulate the global carbon-dioxide "budget"?

The capabilities of geodetic satellites have not only forged new links between oceanography and meteorology but have also prompted scientific interest in the possibility of long-range weather forecasting. Attention has been focused in particular on local variations in sea-surface temperature (SST) as predictors of weather patterns many months ahead.

SST fluctuations in the Pacific Ocean led meteorologists to suspect as early as May 1982 that *El Niño*—an anomalous warming of surface waters off the coast of South America—was on the way. Normally, the equatorial "easterlies" push seawater westward, building up a thick layer of warm surface water in the western Pacific. Only a thin layer of such water remains off the coasts of Ecuador and Peru, allowing nutrient-rich colder waters to well up from below and sustain an immense population of fish. Winds always blow from high-pressure to low-pressure areas. But every few years, the difference in atmospheric pressure between the eastern and western Pacific narrows; indeed, the pressure slope is sometimes reversed. This seesaw phenomenon—called the Southern Oscillation—causes the winds to collapse, even change direction. A mass of warm water moves back across the ocean, disrupting weather patterns throughout the Pacific basin and Western Hemisphere.

The most recent *El Niño*, which set in during July 1982, brought torrential rains to North and South America. It produced the snows that blanketed New England and the California storm that dogged Queen Elizabeth during February 1983. The shift of warm water also suppressed the upwelling of colder water off Peru and Ecuador, with disastrous results for the fish—and fishermen.

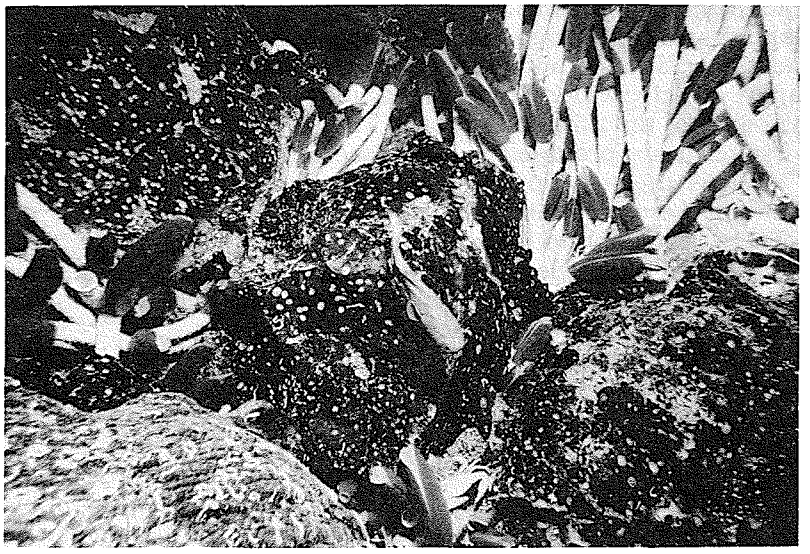
picturing the planet as permanently and statically divided into land masses and ocean basins, they postulated that the continents are situated on "plates" that are variously being pushed apart or driven together by a sea floor that is spreading along the axes of the midocean ridges. The theory of plate tectonics, first seriously proposed in 1960, seemed far-fetched to many. "What is the situation now with the new theory you are defending?" one Russian geologist wrote to a Canadian colleague, "There is simply no foundation to it." Bathymetric data, evidence from magnetic surveys, and the dating of undersea sediments eventually proved decisive. The validity of plate tectonics today is not seriously questioned (see box, p. 65).

Improved technology, including a new ability to drill deep holes in the sea floor and thereby probe once inaccessible layers of the Earth's crust, was crucial in advancing plate tectonics. Postwar oceanography has also made use of manned bathyscaphs (such as the French *Trieste*) and manned submersibles (such as the American *Alvin*), vessels capable of operating miles below the surface of the sea. Not only geology but also marine biology has benefited from development of new instruments such as remote-controlled, deep-sea cameras. One such camera, towed by the *Knorr* out of Woods Hole in 1977, brought back the first pictures of sea-floor vents and the remarkable assemblage of creatures that live around them.

Oases

Along the East Pacific Rise, the Galápagos Rift, and the Guaymas basin in the Gulf of California, at an average depth of 8,250 feet, chimney-like vents spew hot (up to 350 degrees Celsius), mineral-laden water into the perennial night of the abyss. These fissures, created by volcanic activity where the sea floor is spreading, are surrounded by communities of swaying tube worms three to six feet long, clams a foot wide, reefs of mussels, ambling crabs, a variety of darting fish, and clouds of bacteria. Everything about these oases is extraordinary.

For one thing, how can such a large population be supported miles from the ocean surface—miles, in other words, from the plankton that is the beginning of the food chain in the sea? As it happens, the tube worms and clams and other creatures can thrive because bacteria in these communities take the place of plants. The bacteria in turn derive their energy not from the sun via *photo*synthesis but from the vents via *chemo*synthesis; they live on hydrogen sulfide. The discovery of an ecosystem whose food chain is independent of the sun—the only one of its



Crabs, tube worms, and brotulid fish near a hot vent at the Galápagos Rift in the Pacific. One mystery: How do such "vent communities" re-establish themselves around new vents—perhaps 1,000 miles away—when old vents clog up? Most vents "die" within decades.

kind ever found—has far-reaching implications. As Roger Revelle, former director of the Scripps Institution, pointed out in a recent lecture, one of the perennial questions that man asks himself is: How (and where) did life begin? The undersea vent environment may help supply new answers.

Physical oceanography, meanwhile, is fast being transformed by the satellite and the computer. The measurements made from above of the variable temperature of the sea, of its roughness, color, topography, and so forth, will soon be so accurate, so closely spaced, and so frequently repeated, that oceanographers will attain a new level of understanding of the worldwide patterns of air and water circulation, and of the relationship between sea and atmosphere. Already, ocean-scanning satellites are capable of measuring the shape of the ocean surface with a radar altimeter that is accurate to within two inches.

When routinely employed, such measurements will give scientists their first accurate depiction of the low but massive mounds of wind-blown water from which some major ocean currents, including the Gulf Stream, arise. With virtually simultaneous observations of the whole ocean system, oceanographers expect that meteorologists will be better equipped to predict the

onset and consequences of such phenomena as the Southern Oscillation, which, giving rise to *El Niño*, disrupted normal weather patterns throughout the world in 1982–83 (see box, p. 66). It is also critically important that scientists come to understand the role that the oceans play in accelerating or retarding the build-up of carbon dioxide in the atmosphere, which, thanks to the "greenhouse effect," could result in a gradual warming of the Earth's atmosphere and partial melting of the polar ice caps. "If a global warming of about three or four degrees Celsius were to occur over the next hundred years," a 1983 National Academy of Sciences report warned, "it is likely that there would be a global sea-level rise of about 70 centimeters (2.3 feet), in comparison with a rise of about 15 centimeters over the last century."

Oceanography has advanced rapidly in the 108 years since the *Challenger* circled the globe. During that time, the science has been both led and driven by a variety of motives. During the past two decades, many of the most exciting developments in oceanography have come in basic science, and the pursuit of basic science will continue to help shape oceanography's character. So will continued improvements in technology. But oceanographic research is expensive. The two-year Lewis and Clark expedition in 1804–06 cost the United States government less than $275,000 (in 1984 dollars), an amount that would cover the operations of a typical ocean research vessel for about a month. The projects that Washington most readily subsidizes are those that have obvious practical applications: nuclear waste disposal, weather forecasting, oil and gas exploration. One cannot really cry foul; it is, after all, the taxpayers' money.

But we should take care lest a consuming U.S. interest in defense and economic growth constrict the range of imaginative ocean studies. Here as elsewhere, the distinction between basic and applied research is in many respects artificial. The quest for answers to seemingly esoteric questions has already yielded insights into the origins and functioning of the natural world; such insights are essential if the planet's resources are to be exploited without doing harm. As Francis Bacon wrote in 1620, "Nature, to be commanded, must be obeyed."

MANAGING THE OCEANS

by Ann L. Hollick

On April 30, 1982, the United Nations voted to adopt the Law of the Sea treaty that had been under negotiation for more than 10 years. The tally was 130 in favor, four opposed, and 17 abstaining. The United States was one of the four states in opposition. In the aftermath of this vote, proponents and opponents of the treaty began wielding their pens, variously campaigning to reverse or to reinforce the U.S. position.

By December, when 143 national delegations gathered at Montego Bay, Jamaica, for the signing ceremony, the Reagan administration's position had not changed. On this occasion, representatives of 119 nations signed the 320 articles of the United Nations Convention on the Law of the Sea. The United States did not, dissenting both on pragmatic grounds and on grounds of principle. While Washington endorsed those portions of the treaty dealing with boundaries and issues of jurisdiction—President Ronald Reagan described them as "consistent with United States interests"—it could not accept the provisions on deep–sea-bed mining.

Under the UN treaty, an International Sea-Bed Authority would be created both to undertake and oversee the recovery of minerals from the sea-bed beyond the areas claimed by coastal states. Among other things, the Sea-Bed Authority would enjoy taxing and licensing powers, operate a mining company, and be provided with ocean-exploiting technology developed by the industrialized countries, "whenever the Authority so requests."

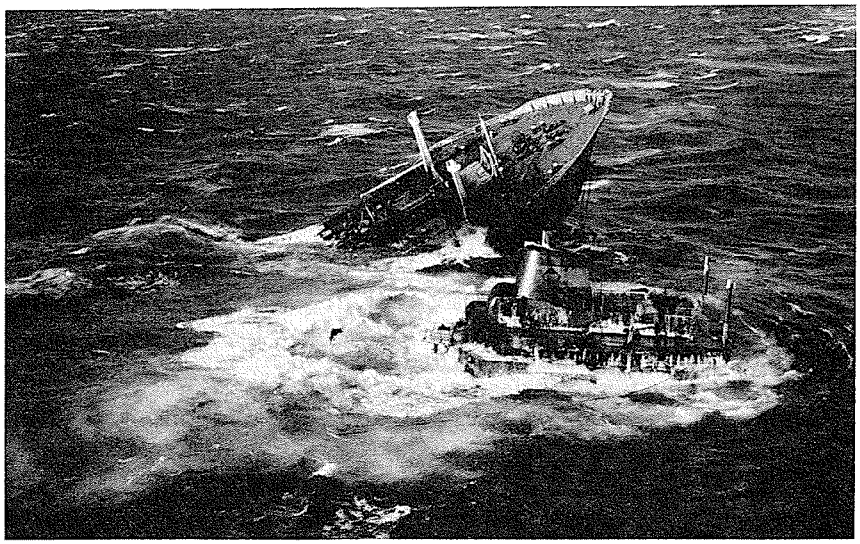
Twenty-two nations joined the United States in withholding signatures from the final version of the treaty.* Within a year, mining consortia from eight countries—the United States, Great Britain, West Germany, France, Japan, Italy, Belgium, and the Netherlands—reached an agreement that eliminated overlaps among their preferred sea-bed mining sites; the governments of the same eight nations in turn negotiated a Reciprocating States Agreement that allowed them to recognize one another's sites. These actions, though not necessarily inconsistent with the Law of the Sea treaty, have left open the possibility

*Some governments did so for reasons other than antipathy toward the treaty's deep–sea-bed provisions. Venezuela and Turkey, for example, were dissatisfied with the way boundary issues were handled in the treaty. Israel objected to a reference in the document to the Palestine Liberation Organization.

that the industrialized nations might take a separate course as far as sea-bed mining is concerned.

The Reagan administration's decision to pursue an independent course stirred criticism, both at home and abroad. Ambassador Elliot L. Richardson, a Republican who headed the U.S. delegation to the third United Nations Conference on the Law of the Sea (UNCLOS III) during the Carter years, called Washington's actions "self-defeating." He contended that the Law of the Sea treaty "clearly benefits a large number of national interests" and represented "our only means of assured access" to strategic sea-bed minerals. Defending the Reagan administration, White House counselor Edwin Meese countered that, by creating an international agency whose "authority over sea-bed mining would have been virtually complete," the sea-bed provisions jeopardized "the future national and economic security of the United States."

Whatever the merits of such arguments, or of thoughtful variants on them, the fact remains that the Law of the Sea treaty is only one part of a continuing process. Though the treaty may never come into force, the world's governments will continue to try to establish internationally recognized legal principles governing the



Grounded tanker Argo Merchant *breaks in two off Nantucket in December 1976, spilling 7.3 million gallons of heavy industrial fuel. Tanker accidents account for only five percent of petroleum pollution in the oceans. Motor vehicles indirectly account for 29 percent.*

use of the oceans and their resources. There is simply no peaceful alternative. The only question is whether a legal framework is put into place by means of practice, custom, and limited negotiations, or assembled in a single comprehensive treaty.

Before considering in more detail the recent efforts to fashion an all-embracing Law of the Sea treaty, let us look at the marine resources and activities that are now, or are potentially, at stake.

■ *Fish.* Thanks to increasing technological sophistication, including the advent of factory trawlers and the use of sonar to locate fish stocks, the world fish catch more than tripled between 1950 and 1970. It has currently leveled off at about 75 million metric tons annually, but with prudent management the yearly world catch could perhaps be maintained at 100 million metric tons. Fish are important not only as a source of protein—they are a dietary staple in countries as diverse as Norway, Portugal, Brunei, and Japan—but also as a source of animal feed and fertilizer. As an export commodity, fish earned $15 billion worldwide in 1982.

Most—more than 90 percent—of the world's fish are caught within 200 miles of shore. With some 20 percent of the world's fisheries, the North American coastal waters are particularly fertile, thanks to the upwelling of nutrients on the west coast and the broad continental margin on the east coast. For most of history, fishing vessels from any nation could cast their nets almost anywhere; in this century, some countries, notably the Soviet Union and Japan, have habitually worked the fisheries off distant shores. Beginning in the 1970s, however, in the context of the UNCLOS III negotiations, growing numbers of coastal states proclaimed 200-mile exclusive economic or fishing zones. The question of boundaries, and the need for coordinated management of important fisheries, are the key issues.

■ *Transport.* Like fishing, most international shipping—which accounts for over 80 percent of all goods (mostly oil, iron ore, grain, and coal) transported between countries—moves in or near coastal waters. As it has for fishing, technology has opened up new possibilities for seaborne trade, permitting construction of ships that are bigger (up to half a million tons) and faster (averaging 33 knots) than anything seen before. Between

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1950 and 1970, the world's merchant fleet doubled in numbers while increasing fourfold in tonnage. Today some 40,500 merchant vessels, including tankers, general cargo liners, bulk carriers, and container ships, ply the oceans.

The issues here are chiefly two: Will extended jurisdiction by coastal states over offshore waters interfere, in practice, with freedom of navigation? And what is to be done about the growing congestion in straits and coastal waters? Of particular concern are the 5,583 supertankers that move more than half of the world's oil and gas. Tanker accidents in recent years have included the grounding of the *Torrey Canyon* off Britain's Scilly Isles in 1967 and the breakup of the *Amoco Cadiz* off Brittany in 1978. Both oil spills did extensive damage to nearby shores.

■ *Energy.* Man began tapping the seas for oil and gas less than a century ago. Today, offshore fields supply more than 20 percent of the crude oil produced worldwide, a proportion that will probably increase. Almost 20 percent of all the natural gas likewise comes from under the sea.

Offshore oil and gas are recovered from the continental margin—that part of the continent that extends under water. The distribution of offshore oil and gas resources has generally coincided with substantial onshore deposits. Thus, the Middle East, the United States, Mexico, Venezuela, and Nigeria have promising reserves both offshore and onshore. But intensive exploration is also under way in the Red Sea, in the South China Sea, and in the coastal waters of India, Australia, and Argentina.

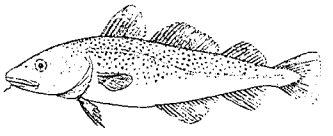
It may be that, some day, the oceans will yield energy in more unusual forms than hydrocarbons. Tidal fluctuations, waves, ocean currents, and the temperature differential between surface and deeper layers of the sea might all be used to generate significant amounts of electricity. But for the time being, oil and gas are the key ocean energy resources. So far, these fuels have been pumped mainly from fields in shallow water relatively close to shore. But as oil companies become proficient at drilling in deeper water—Shell has announced plans to drill in the Atlantic at a depth of 6,800 feet—the search for oil and gas will move farther out to sea. This raises the issue of where national jurisdiction ends and the international deep sea-bed begins.

■ *Minerals.* Manganese nodules—potato-sized, mineral-laden lumps—litter the ocean floor in many places and at many depths. The nodules that have attracted the most commercial interest, those with large amounts of copper, nickel, and cobalt, in addition to manganese, are found primarily on abyssal plains of the Pacific at depths of 12,000 to 20,000 feet. Several mining con-

GOOD NEWS FOR FISH

The rush by coastal nations during the mid-1970s to proclaim 200-mile exclusive economic zones offshore barred modern fleets of big "distant water" factory ships from many of the world's most productive fishing areas. Japanese, Soviet, West German, and other trawlers went elsewhere. For the fish in the North Atlantic, as William Warner observed in Distant Water *(1983), that was good news:*

What the decline of factory trawling has meant . . . is that the threat of commercial extinctions no longer exists. Nor will it ever, if all coastal states show themselves to be good stewards of their new oceanic preserves. The proof, theoretically speaking, is already at hand. The great arch of the North Atlantic—the world's most severely tested fishing laboratory—is providing it. Almost everywhere along its way, fish stocks are rejuvenating. The good market fish, the key species, are coming back.



Iceland, the first and most vigorous of the good stewards, has benefited most. In the eight years since establishment of a 200-mile zone, the island republic has seen an overall catch increase of 58 percent. The United States has had almost equal success. The endangered haddock has risen fivefold from its 1974 low, and the cod catch has almost doubled. Even the Atlantic herring once so coveted by foreign trawlers are coming back strongly from what Maine fishermen, who catch them as juveniles for packing as sardines, thought was the end of their inshore fishery. Now, five years after the cancellation of all foreign herring quotas, the Maine sardine canneries are glutted with more than they can handle. Canada, for her part, has been witnessing what fishery officials like to describe as bonanza years. Both the cod and the yellowtail flounder catches have doubled since 1976, and haddock have risen over 100 percent.

Capelin are still down, but the offshore stocks (now all but denied to foreign trawlers) are at least sufficient to support a growing Canadian fishery. Perhaps, someday, the same will be true inshore. Perhaps, that is, Newfoundland outports will once again celebrate the "sculls," the annual arrival of the beach-spawning capelin, with scoffs [fetes] and soirees.

Throughout the North Atlantic arch, at varying paces, there is rejuvenation or the promise thereof. The cycle begins with the smaller fish—the younger year classes that are always more abundant than the old. Then, with patience, as records already show, there come the fully mature fish, the optimum-size classes that were almost never seen when factory trawlers dominated the grounds.

sortia, including Japan's Deep Ocean Minerals Association and the United States's Kennecott Consortium, are studying the feasibility of various technologies, including remote-controlled submarines and vacuum reapers, for harvesting this crop of minerals.

Geologists also have their eyes on sulfide deposits, containing zinc, iron, copper, lead, silver, and cadmium, that have been discovered in several areas where there is rapid sea-floor spreading—an unexpected bonus from the study of plate tectonics. These deposits represent the accumulated discharge from the hydrothermal vents that can be found along the length of midocean spreading centers.

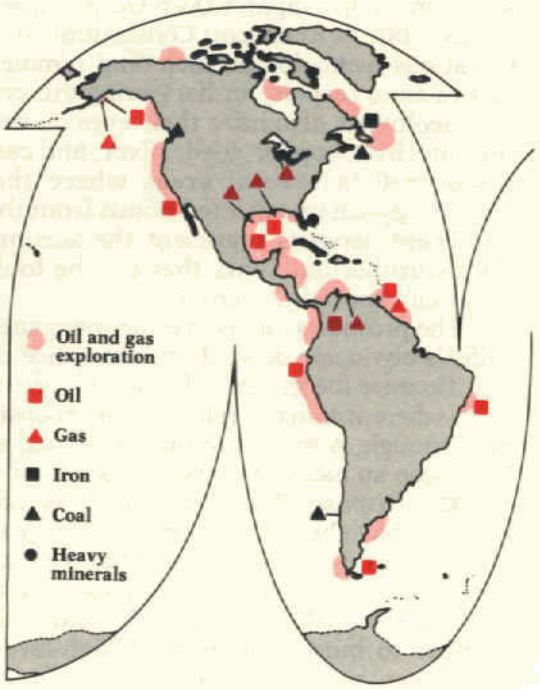
The prospects for recovering manganese nodules and metallic sulfides obviously depend on what price customers are willing to pay. Because the minerals found in these ores are still plentiful on land, where mining is relatively inexpensive, that price is not yet high enough. A more complicated issue, and one that would not have been an issue 20 years ago, is that of ownership.

■ *Disposal.* The oceans serve as man's big sink. For centuries they have been the ultimate destination for all wastes generated on land—so much so that the absorption capacity of enclosed seas like the Mediterranean and the Baltic has now been severely strained. A particularly heated debate today centers on whether to bury containers of high-level radioactive wastes in deep-ocean sediments. Low-level radioactive wastes, lodged in cannisters, are already being dumped at special sites in both the Atlantic and Pacific oceans.

Pollution is not a matter only of aesthetics, although aesthetics are important, and the recreational use of the sea is a big industry. (Seventy percent of the Earth's population lives within 50 miles of a seacoast.) Chemicals, metals, sludge, radioactivity: All of these things may build up in marine life, all may upset the biological and physical equilibrium of the seas. A deadly outbreak of methyl-mercury poisoning in Japan—caused by industrial dumping that infected fish in Minamata Bay—vividly highlighted the potential problem during the 1950s. Because the oceans wash all shores, the issue of pollution is a transnational one.

■ *Research.* Yet another use we make of the oceans is for science, and not only to satisfy curiosity. We study the oceans to improve our ability to predict and perhaps someday control the weather. Preserving world fisheries requires an understanding of ocean currents and upwellings. The freedom to navigate unhindered in near-shore waters as well as open seas is essential to much marine research. As coastal states extend jurisdiction, access will be restricted.

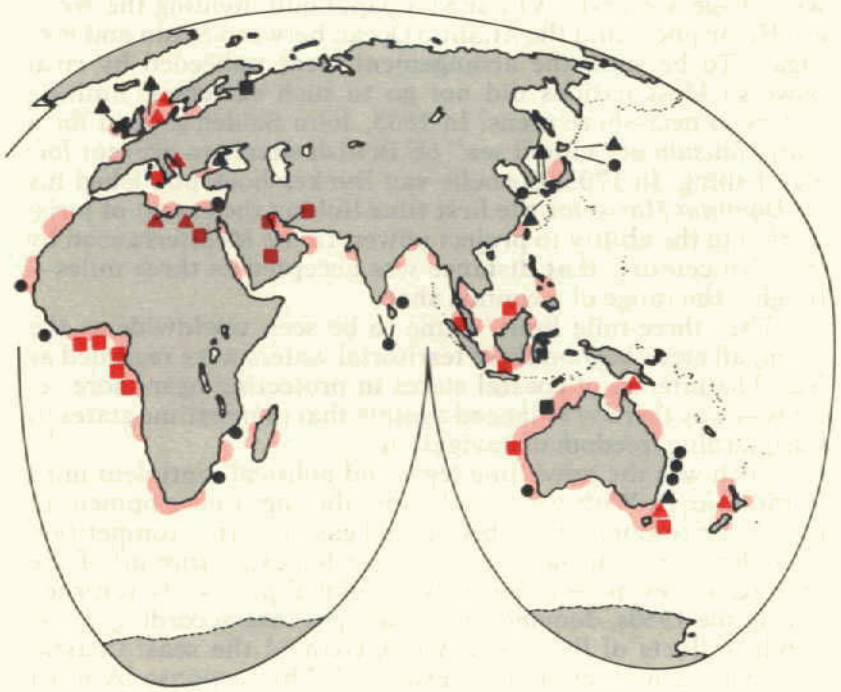
Man learned first to extract fish from the sea, then salt. Today, the oceans are exploited for a broader range of resources, but the quest for energy and minerals is still largely confined to coastal waters. According to a 1980 study, the "ocean sector" accounts for three percent of the U.S. gross national product, roughly equivalent to the contribution made by agriculture or communications.



■ *Defense.* Historically, the oceans have offered nations with naval forces an opportunity to project their power; at the same time, weaker countries have viewed the oceans as a defensive shield. The seas continue to fulfill both functions. As a place of concealment for missile-bearing submarines, they are instrumental in maintaining the strategic deterrent between the superpowers (see box, pp. 80–81).

Naval powers such as the United States and the Soviet Union depend on access to all of the world's seas. A major issue here has been the customary right of navigation through straits. A universal 12-mile territorial limit would cover more than 100 such vital choke points around the world, including the straits of Gibraltar, Bab el Mandeb, Hormuz, and Malacca. Without treaty or other guarantees, some straits' states might seek to impose obstacles to international navigation.

The intelligent handling of ocean resources, and of the multiple and sometimes conflicting activities conducted in and under the seas, is clearly today a necessity. It has not al-



ways been so. Until the 20th century, man's demand for ocean resources, and his ability to recover them, was far exceeded by available supply. The legal regime that evolved was based on the principle of "freedom of the seas": Ocean activities were to be freely conducted by all parties. The early freedom of the seas principle was eloquently expounded by the jurist Hugo Grotius, at the behest of the Dutch East India Company. "Is it not vastly more just," he wrote in his essay *Mare Liberum* (1609), "that the benefits from the enjoyment of common things should be given to the entire human race rather than to one nation alone?" Grotius's thesis that in wartime neutral vessels were entitled to use the seas without constraint was embodied, in 1856, in the Treaty of Paris (which was otherwise concerned with settling the Crimean War).

From the outset, of course, the freedom of the seas principle was challenged by a contrary notion—that of enclosure or division of the oceans for reasons of national security and profit. Perhaps the most ambitious attempt at enclosure came in 1493,

when Pope Alexander VI issued a papal bull dividing the Western Hemisphere and the Atlantic Ocean between Spain and Portugal. (To be sure, the arrangement went unheeded by rival powers.) Most nations did not go to such extremes, limiting claims to near-shore areas. In 1635, John Selden argued for a *mare clausum* or "closed sea" off British shores to prevent foreign fishing. In 1703, Cornelis van Bynkershoek published his *De Dominio Maris*, for the first time linking the extent of jurisdiction to the ability to project power. In the Mediterranean by the 18th century, that distance was accepted as three miles—roughly the range of a cannon shot.

The "three-mile limit" came to be seen worldwide as the norm; all areas beyond these territorial waters were regarded as free. The interest of coastal states in protecting near-shore resources was thereby balanced against that of maritime states in safeguarding freedom of navigation.

Such was the prevailing legal and political sentiment until World War II. With war's end came the rapid development of new ocean resources (notably oil and gas), growing competition for older ones, and new technologies for exploiting *all* of the sea's resources more intensively. As global prosperity returned during the 1950s, demand for oil and gas rose accordingly. Expanding fleets of fishing trawlers roamed the seas. Coastal waters became increasingly crowded. The response by most governments was twofold.

Enclosing the Commons

One course of action was to work out pragmatic rules and regulations to accommodate potentially conflicting uses of a given area of the sea. This process has actually been something of a success story. Despite all the publicity given to boundary disagreements or disputes, such as the 1975 Cod War between Britain and Iceland, governments have established a variety of rules and norms that regulate behavior on the high seas and in coastal waters, and do it quite well. Common understandings exist as to the maritime "rules of the road," assistance to vessels in distress, and procedures for abandoning ship and claiming salvage rights. In offshore areas, coastal states have designated special shipping lanes to permit other activities, such as oil drilling, to be safely pursued. All of this and much else has been accomplished via a mixture of domestic legislation, treaties among neighboring or regional states, and rules hammered out in such bodies as the UN's London-based International Maritime Organization.

The second course of action, justified by a variety of pretexts and precedents, was to proclaim sovereignty over ever-larger tracts of the ocean "commons." The United States led the way. As early as 1943, Interior Secretary Harold Ickes had drawn President Franklin Roosevelt's attention to the continental shelf, and to the possibility of "availing ourselves fully of the riches in this submerged land." World War II, Ickes said, pointed up "the necessity for an augmented supply of natural resources." In 1945, at Ickes's urging, President Harry Truman proclaimed U.S. jurisdiction over the resources of the continental shelf contiguous to the U.S. mainland. Truman also asserted an American right to establish conservation zones for the protection of fisheries in certain areas of the high seas—notably in the Pacific, where Japanese fishing fleets had before the war helped themselves to Alaska-spawned salmon.

Disputes at the UN

Two years after the Truman Proclamations, Chile, followed by Peru and Ecuador, laid claim to 200-mile territorial seas. With World War II surplus warships bought from the United States, the Peruvians and Ecuadorians began seizing foreign (mostly American) trawlers that dared trespass on their territorial waters. The most spectacular seizure occurred in 1954, when Peru captured five vessels of the Onassis whaling fleet that had been operating more than 160 miles from her coast.

During the 1940s and 1950s, few authorities from countries outside the west coast of South America regarded a 200-mile limit as legitimate. Indeed, in legal circles, the issue was whether the territorial sea should be limited to three miles, extended to 12, or perhaps fixed at some intermediate distance. The first UN Conference on the Law of the Sea met in Geneva in 1958 partly to resolve this very matter. The delegates were unable to do so. But the conference did produce other important agreements, including a Convention on the Continental Shelf that granted coastal states "sovereign rights" over sea-bed resources to a depth of 200 meters or, beyond that point, to water depths at which exploitation was possible. The "exploitability clause" ensured that sovereign rights would advance with technological capability. But it protected maritime states by limiting those rights to natural resources of the sea floor. In other respects, the seas remained free.

The second UN Conference on the Law of the Sea met in Geneva in 1960 to consider the territorial sea problem anew, but again the conferees could not agree. There was a general consen-

RUN SILENT, RUN DEEP

"Rule, Britannia, Britannia rule the waves." Thus began the chorus of England's proud song during the 19th-century heyday of the Empire when the Royal Navy's far-flung squadrons supported colonial expansion, protected merchant shipping, and curbed the ambitions of rival European powers. The trauma of two world wars ended all that. Today, nobody *rules* the waves, partly because the new ships are simply too expensive. A single *Nimitz*-class aircraft carrier costs $3.5 billion, a destroyer $500 million.

The oceans' military importance has not ended. Both the United States, once the naval giant of World War II, and the Soviet Union, its postwar challenger, are in a race of sorts. Since 1962, the Soviets have vastly increased the number (now roughly 650) and global deployment of their major combat ships; they are building their first nuclear-powered big carrier. The Reagan administration has countered with a proposed build-up to a "600-ship" Navy by the early 1990s, including 15 aircraft-carrier groups and several reactivated World War II battleships, all designed to support a controversial new "maritime strategy."

British naval planners focus on the North Atlantic, the Italians on the Mediterranean, the French on both. The United States worries about these areas, as well as the Caribbean, the Persian Gulf, and the Sea of Japan. Increasingly, U.S. skippers find themselves being shadowed by Soviet vessels.

Control of the seas, particularly along the North Atlantic convoy routes to Europe, is a prime NATO goal in any nonnuclear war with the Soviets. Yet, congressional critics contend, the U.S. Navy has put too many eggs in one basket: the big carrier, its 80–90 aircraft, and defending escort vessels. Such forces are vulnerable not only to short-range missiles, as the 1982 Falklands war indicated, and land-based bombers, but to torpedoes fired from submarines.

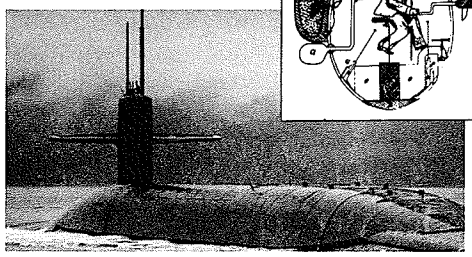
Indeed, the chief concern of both superpowers lies beneath the waves. The Soviets have 115 nuclear-powered attack submarines, the Americans, 93. In 1960, the United States deployed the first strategic missile–carrying submarine, creating a nuclear deterrent vir-

sus that the territorial sea should be an area of virtually complete state sovereignty. Beyond it, there should exist a special purpose or "contiguous" zone, a buffer where coastal states would enjoy limited powers—the right, for example, to stop vessels for customs inspections, or to restrict dumping.

But when it came down to exact dimensions, consensus eluded the conferees. The result, as the 1960s wore on, was the phenomenon of "creeping jurisdiction" as more and more countries—76 of them by 1974—claimed territorial seas extending to

tually invulnerable to detection and destruction by enemy missiles. The Soviets followed suit. Ever since, both sides have poured money into undersea research—on acoustics, on magnetic displacement—seeking to score a breakthrough that will allow detection of the other side's submarines. The Soviets' nuclear-powered submarines are often faster but "noisier" than the Americans'. To get to deep water from their home bases, U.S. submarines have a wide choice of routes. Soviet submarines must pass through geographical bottlenecks to reach the open sea. To monitor them in transit, the United States and its allies have moored thousands of hydrophones on the ocean floor in belts—e.g., between Greenland and Britain, between Japan and Alaska—as part of a global Sound Surveillance System. Possibly as a result, the Soviets keep most of their 62 strategic-missile submarines in protected waters near their home ports. But they can still reach the United States with their missiles—and they are no easier to spot than are the 35 wide-ranging U.S. Poseidon and Trident submarines. The oceans' characteristics—temperature change, salinity, eddies, currents, varying depths, fish—distort sound waves and confuse sonar detection systems.

By the 1990s, thanks to advances in ICBM accuracy, virtually every American land-based strategic nuclear weapon could be rendered useless by a Soviet first strike. The surviving leg of the U.S. strategic "triad" would be the nuclear-powered submarines roaming the murky deep, now able to hit Moscow from 4,000 miles away. After 20 years of intensive research, no one has figured out a way to make the seas "transparent." Thanks to the oceans' stubborn opacity, the U.S. retains a credible deterrent to Soviet surprise attack, and hence to World War III.



A Trident submarine, the USS Ohio*; inset, David Bushnell's* Turtle.

at least 12 miles from shore. Eventually, during the 1970s, most coastal states, from South Africa to Iceland to Japan, also asserted an exclusive right to exploit all of the resources within a 200-mile zone.

They did so in anticipation of the treaty that might be produced by the third UN Conference on the Law of the Sea. This round of negotiations got under way in New York in 1973 after six years of preparation; the guiding assumption was that the resources of the oceans beyond national jurisdiction were "the

common heritage of mankind." The conference met in 11 sessions over the course of a decade before agreeing on a detailed treaty that dealt with everything from archaeological exploration and piracy to resource rights in offshore areas and principles of boundary delimitation.

The Great 'Sea-grab'

The character of the third Law of the Sea Conference inevitably reflected the altered character of the United Nations itself, an eventuality that Washington's negotiators failed to foresee. The United States entered the Law of the Sea negotiations with limited objectives and the mistaken belief that it could retain some sort of control over the proceedings. Unfortunately, the UN's membership had almost doubled since the first Law of the Sea Conference in 1958. The number of African delegations alone had increased from six to 41. Virtually all of the new member states were newly independent former colonies. Most were poor.

To say the least, the existence of this bloc of developing countries—organized as the so-called Group of 77—complicated the politics of the conference. "These days," UN Ambassador Daniel Patrick Moynihan wrote in 1975, "the United Nations often takes on the appearance of an international court with the Third World pressing the charges and conducting the trial." What was true of the General Assembly was at times also true of UNCLOS III. On questions of jurisdiction over offshore areas and activities, the divergence of interest between coastal and maritime states was paramount. But on the matter of managing the sea-bed, the clash was between rich and poor, between industrialized countries with capital, expertise, and technology, and "developing" nations with none.

On the question of jurisdiction, the coastal states—which include influential Third World countries like India and Brazil—carried the day. They sought and won control over all coastal resources assumed to be of value. Under the treaty, a 200-mile exclusive economic zone (EEZ) gives coastal states sovereign rights to all resources within 200 miles of shore—and beyond, if the continental margin stretches farther. Archipelagic states, such as Indonesia or Fiji, are allowed to draw "baselines" linking their outermost islands and to designate the enclosed areas as "archipelagic waters." Within these waters, the archipelagic state is authorized to draw sea-lanes for ships and aircraft. Beyond these waters, the state may claim a 200-mile EEZ.

The extent of each nation's "territorial sea" was finally set

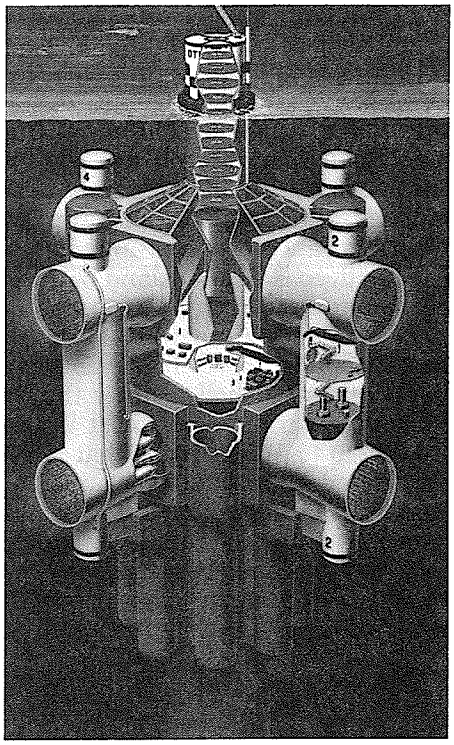
at 12 nautical miles from shore, with a contiguous zone occupying another 12. After difficult negotiations, it was agreed that in international straits that were overlapped by a 12-mile territorial sea, the coastal or straits state was authorized to designate sea-lanes for all shipping. But "transit passage"—a new concept—and rights of overflight were assured for all states. Submarines were allowed to pass submerged. These provisions satisfied both the United States and the Soviet Union, which generally saw eye-to-eye on most navigation issues.

In all, coastal and island nations have succeeded in reserving the resources in roughly 40 percent of the ocean—including the most productive portions—for themselves. (Six countries together acquire more than one-third of the newly created EEZs and continental shelf regions: the United States, Indonesia, New Zealand, Australia, the Soviet Union, and Japan.) The big losers are the 40 to 50 countries that are landlocked, or whose EEZ is constricted because of overlap with that of a neighbor (as often occurs, for example, in Southeast Asia and West Africa). Many international lawyers and diplomats had favored a Law of the Sea treaty as a means of heading off what they foresaw as a massive "land-grab" of the oceans. Ironically, the "grab" was at least partly brought about by the treaty process itself.

Transferring Wealth

But partition of coastal waters was only one item on the agenda. Sea-bed mining in areas beyond national jurisdiction was another, and here the political alignment was different. The basic question was: Who should mine the sea-bed? Negotiations were quickly mired in an ideological morass involving the so-called New International Economic Order, the Group of 77's plan put forward during the early 1970s, that calls for a massive redistribution of wealth from the Western industrial nations to the Third World. "In one world as in one state," explained Tanzania's President Julius Nyerere, "when I am rich because you are poor, and I am poor because you are rich, the transfer of wealth from rich to poor is a matter of right."

In the Law of the Sea negotiations, the Group of 77 sought to create a "one-nation, one-vote" International Sea-Bed Authority that would in turn oversee an operating company called the Enterprise (the popularity of the U.S. television spaceship show "Star Trek" in Latin America accounts for the name). The Enterprise would be a monopoly, exploiting the sea-bed on behalf of "mankind as a whole" and allowing for direct participation by developing countries in the process of mining. The



The Lockheed Ocean Thermal Energy Conversion (OTEC) system. OTEC systems exploit the temperature differential between surface and deeper water to generate electricity. Warm water heats a fluid medium (such as ammonia), creating vapor that drives a turbine. Cold water returns vapor to liquid state, and the cycle begins again.

industrial states proposed instead that the Sea-Bed Authority simply issue licenses to existing mining companies and collect a small tax in return to be distributed to developing nations. The developing nations found this unacceptable.

Ultimately, the delegates agreed on a compromise "parallel system." Public and private mining companies would explore and submit two promising sites to the Sea-Bed Authority, one of which the Enterprise would take for itself. Financing for the Enterprise would come from the mining firms by way of an application fee, a fixed annual fee, and royalties paid on profits. Appropriate technology would be transferred to the Enterprise from the private sector, and the Authority would be able to control the rate of production of sea-bed mineral prices for land-based producers. The treaty also stipulated that many of the Enterprise's important business decisions would have to be made by consensus (guaranteeing stalemate) while others could only be made by a two-thirds or three-quarters majority of an Executive Council dominated by the developing nations.

The United States and other countries were particularly alarmed about the provisions on decision-making. Washington had always insisted on "weighted" voting in international economic organizations, consistent with the size of each member's financial contribution. Washington also objected to the provisions for production controls and mandatory transfer of technology as well as to provisions allowing the treaty to be brought up for revision after 20 years by dissatisfied parties.

No Treaty, No Tragedy

There were many components of the Law of the Sea treaty —provisions dealing with scientific research, management of fisheries, pollution control, and much else besides—but the jurisdiction and sea-bed provisions made up the document's core. And as late as 1981, incremental changes were still being made in the draft negotiating text in order to persuade the United States and others to accept the treaty. The Reagan administration was ideally situated to insist on changes. However, plagued by inexperience and incompetence, the new U.S. delegation not only failed to negotiate the necessary improvements in the text but, by all accounts, also managed to antagonize virtually everyone at the conference.

Although 119 parties have signed the Law of the Sea treaty, its status is up in the air. Until the treaty is formally ratified by the appropriate bodies in at least 60 nations—in the United States, this would be the Senate—the document is a dead letter. So far, fewer than a dozen countries, including Belize, Fiji, and Zambia, have ratified the treaty; the rest appear to be in no hurry to do so. If the treaty eventually goes into effect with only a minimum number of adherents, its authority will be suspect. No matter how many countries ratify the treaty, if the industrialized nations are not among them, the International Sea-Bed Authority will be an empty shell. (Of the eight Western countries that have negotiated among themselves a Reciprocating States Agreement on sea-bed mining, none has ratified the treaty and five have not signed it.) Other imponderables remain.

The likelihood is that, in the end, there will be either no treaty or a very weak treaty. This is not necessarily a tragedy. For one thing, the jurisdictional aspects of the convention, which provide a useful basis for managing activities in and on the oceans, will probably come to be accepted anyway as customary international law. The United States acknowledged this reality in March 1983 when it unilaterally proclaimed a 200-mile exclusive economic zone consistent with that per-

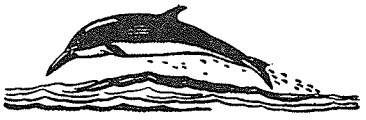
mitted by the Law of the Sea treaty.

That still leaves many issues unresolved, of course. Looking ahead, it is not difficult to pinpoint probable bones of contention. As coastal states vigorously exploit their EEZs, for example, boundary disputes will become commonplace, and some may take years to resolve. Fishing stocks will need careful, coordinated management in areas where they span many narrow or small jurisdictions. The threat of pollution is likely to get worse, not better. Heavily traveled straits and coastal areas will become more, rather than less, crowded.

Some mechanisms, such as the International Court of Justice and the International Maritime Organization, already exist to deal with certain of these issues. Other concerns may prove susceptible to regional initiatives. Twelve Mediterranean countries, for example, have drawn up plans to help revive their dying sea, and states bordering other imperiled bodies of water are beginning to follow suit. There is no reason why this approach should not be applied to other problems.

In the end, a new legal regime covering offshore jurisdiction as well as the deep sea-bed is likely to evolve through some combination of unilateral claims, regional practice, the influence of international organizations, and the provisions of the UNCLOS III treaty (ratified or not). As long as a widely accepted body of customary law develops that provides a satisfactory degree of predictability, states should be content with it. The process may be messy, but it is vastly preferable to resuming negotiations in a single forum on the whole range of contentious issues.

White House aide Richard Darman, a former member of the U.S. delegation to UNCLOS III, once described the emerging Law of the Sea treaty as the work of "internationalist lawyer-codifiers" who conceived the world in "neat, static terms." Managing the oceans does not readily lend itself to such treatment. In the end, the sea may simply be too big, its range of uses too broad, to be rationally encompassed by a single set of immutable laws.



BACKGROUND BOOKS

THE OCEANS

"Each region of the sea has its own characteristics of temperature, salinity, biology, currents and tides, and above all of sea state or character: the 'grey and stormy Bay of Biscay,' the 'blue and placid Mediterranean,' are typical popular perceptions. But any sea can change in a remarkably short time from calm to violent storm. Only in the tropical South Pacific outside the hurricane zones and in the tropical South Atlantic is the sea free from storms for any length of time."

So begins one chapter—"The Weather"—of **The Times Atlas of the Oceans** (Times Books, 1983), an engrossing and brilliantly illustrated guide to the oceans and marine environment.

Into 272 tabloid-size pages, Alastair Dougal Couper, head of the Department of Maritime Studies at the University of Wales Institute of Science and Technology, has packed 400 color maps and a tightly written text brimming with information on every conceivable aspect of the sea.

This is the prime source book for the reader who wants to know the volume of sludge and sewage dumped into the North Sea every day (7.3 million cubic meters), how many simultaneous telephone conversations modern transatlantic submarine cables carry (5,000), the number of vessels lost at sea in 1980 (387), or how many people fish in the Chesapeake Bay on a typical summer weekend (100,000).

Other good general works include F. S. Russell and C. M. Yonge's **The Seas** (Warne, rev. ed., 1975), a revision of their respected 1928 volume; Robert Barton's **The Oceans** (Facts on File, 1980), an example of the better sort of "coffee-table" book; David A. Ross's **Introduction to Oceanography** (Prentice-Hall, 1982); and C. P. Idyll's **Abyss** (Crowell, 1976, cloth & paper), an exploration of "by far the most extensive environment in our planet," the deep sea.

No one knows for certain how the oceans were created, but many geologists today believe that they came slowly into existence beginning roughly 4.5 billion years ago. At that time, the still-molten Earth is thought to have flung out plumes of carbon dioxide, nitrogen, and water vapor. Together these gases formed a thick atmosphere around the globe, which condensed as the Earth's crust began to harden and cool. The ensuing rains lasted for millions of years until, as C. P. Idyll describes it, "the clouds thinned slowly and then broke, and the sun glinted on the fresh new sea."

While the science of oceanography is barely a century old, ocean exploration is ancient. Its origins are shrouded in the unrecorded past. "Man hoisted sail before he saddled a horse," argues Thor Heyerdahl, the Norwegian anthropologist and voyager, in his speculative **Early Man and the Ocean** (Doubleday, 1979, cloth; Random, 1980, paper).

In 1947, Heyerdahl sailed a balsa raft from the coast of Peru to Tahiti in order to demonstrate that an Inca tribe could have migrated to Polynesia around A.D. 1100. In 1969, Heyerdahl sailed from Morocco to Barbados aboard the *Ra*, a 49-foot facsimile of an ancient Egyptian reed ship. Heyerdahl chronicled his adventures in **Kon-Tiki** (Rand McNally, 1966, cloth; Washington Square, 1983, paper) and **The Ra Expeditions** (Doubleday, 1971, cloth;

New American Library, 1972, paper).

Whatever the feats of the Egyptians and the Incas, the true Age of Discovery came much later, at the height of the European Renaissance, when "almost the whole world was brought into enduring association." So comments Cambridge University historian G. V. Scammell in his smartly written **The World Encompassed** (Univ. of Calif., 1982), a survey of European exploration and expansion.

Between 1492 and 1500, Christopher Columbus made three trips to the New World; in 1497, Vasco da Gama rounded the Cape of Good Hope and reached India. And a quarter century later, Spain's Ferdinand Magellan attempted the first circumnavigation of the Earth. The voyage was not without incident. The crew, Scammell recounts, survived on rats and sawdust during the 98-day Pacific crossing. And Magellan himself was killed in 1521 in a skirmish with the natives in the Philippines. But his ship, the *Victoria*, eventually made it back to Spain.

By 1800, man was adept at traversing the high seas. But he knew little, as yet, about the marine environment. Three important 19th-century expeditions helped to change that state of affairs, and each has been described in a highly readable volume.

In **Darwin and the Beagle** (Harper, 1969, cloth; 1972, paper), Alan Moorehead recounts Charles Darwin's five-year, round-the-world adventure aboard HMS *Beagle* in 1831–36; William Stanton's **The Great United States Exploring Expedition of 1838–1842** (Univ. of Calif., 1975) describes the first U.S. scientific survey of Antarctic waters; and Eric Linklater's **The Voyage of the Challenger** (Doubleday, 1972) chronicles what was, at the time (1872–76), the most extensive oceanographic expedition ever mounted. Other landmarks in the evolution of marine science are described by the 78 contributors to **Oceanography: The Past** (Springer, 1980), edited by Mary Sears and Daniel Merriman. The work contains 69 relatively technical essays on such topics as "The Physical Oceanography of the Chilean Sea" and "The Victorian Aquarium in Ecological Perspective."

While submarines are a relatively recent invention, the idea of underwater travel has beguiled seafarers for centuries. As *New York Times* military correspondent Drew Middleton observes in **Submarine** (Playboy, 1976), "Man has always displayed a stubborn ambition to do what nature never intended him to do."

The first submarine, according to Middleton, was built in 1620 by the Dutch inventor Cornelis Drebbel. Twelve oarsmen propelled the vessel, made of greased leather stretched over a wooden frame. James I was fascinated by Drebbel's contraption, but neither he nor the inventor foresaw any military application.

Connecticut's Richard Bushnell showed true Yankee ingenuity in this regard. In 1776, as the American War of Independence got under way, Bushnell, a Yale graduate, developed the *Turtle*, an egg-shaped, self-propelled, one-man military submarine. With it, he intended to sneak up on and, if possible, sink Royal Navy warships.

The plan of attack, writes Richard Humble in his history of **Undersea Warfare** (New English Library, 1981), called for the *Turtle*'s pilot to affix a keg of gunpowder to the hull of HMS *Eagle*, which was anchored off Manhattan, in the Hudson River. Unfortunately, the pilot's air supply dwindled before the job was done,

and the *Turtle* swiftly withdrew, never to be used again. The attempted assault went down in the history books as "an insignificant, if supremely gallant, gesture."

Not all underwater vessels have been used to wreak havoc. In **Half Mile Down** (Harcourt, 1934; Duell, Sloan, and Pearce, rev. ed., 1951), zoologist William Beebe describes how he and his colleague, Otis Barton, developed the first diving chamber capable of withstanding the sea's enormous pressures at great depths.

Their so-called bathysphere was four feet nine inches in diameter and weighed 5,400 pounds. On June 6, 1930, off Bermuda, Beebe and Barton climbed into the chamber, which was then lowered by cable 800 feet below the waves—275 feet farther than any living man had descended before.

"These descents of mine beneath the sea seemed to partake of a real cosmic character," Beebe later wrote. "First of all there was the complete and utter loneliness and isolation . . . a loneliness more akin to a first venture upon the moon or Venus than that from a plane in mid-ocean or a stance on Mount Everest."

The armchair naturalist can find a variety of introductions to the intricacies of marine life. Sir Alister Hardy's **The Open Sea: Its Natural History** (Houghton, 1971) is both comprehensive and informal. Under headings such as "The Story of the Plaice," "Whales, Walruses and Wild Men," and "Hake, Haddock, Cod and Co.," Hardy summons up the denizens of the deep as if they were old friends.

Other useful works include Gunnar Thorson's concise, if dry, **Life in the Sea** (World, 1971, cloth; McGraw-Hill, 1971, paper); **The Living Sea** (Putnam's, 1976), a marine encyclopedia compiled by Robert Burton, Carole Devaney, and Tony Long, and graced with striking color photographs; and C. M. Yonge's **The Sea Shore** (Collins, rev. ed., 1966). Yonge describes the shore, "the meeting place of sea and land," as "the most fascinating and complex of all the environments of life."

However close man ever comes to understanding the hidden processes of the deep and how they shape and influence his destiny on land, the oceans will always retain the primeval grandeur evoked by Rachel Carson in her eloquent **The Sea Around Us** (Oxford, 1961, rev. ed.).

"For the sea lies all about us," Carson writes. "The commerce of all lands must cross it. The very winds that move over the lands have been cradled on its broad expanse and seek ever to return to it. . . .

"In its mysterious past it encompasses all the dim origins of life and receives in the end, after, it may be, many transmutations, the dead husks of that same life.

"For all at last return to the sea—to Oceanus, the ocean river, like the ever-flowing stream of time, the beginning and the end."

—Neil Spitzer

EDITOR'S NOTE: *Neil Spitzer is an assistant editor of* The Wilson Quarterly. *Many of these titles were suggested by Frederick Bayer, an invertebrate zoologist at the Museum of Natural History in Washington, D.C., and C. P. Idyll, former fisheries biologist at the University of Miami's Rosentiel School of Marine and Atmospheric Science.*

THE CAUSES OF WARS

Since the mid–18th century, many European and American theorists have attempted to explain war as an aberration in human affairs or as an occurrence beyond rational control. Violent conflicts between nations have been depicted, variously, as collective outbursts of male aggression, as the inevitable outcome of ruling-class greed, or as necessary, even healthy, events in the evolutionary scheme. One exception to the general trend was the 19th-century Prussian strategist Karl von Clausewitz, who declared, in an oft-quoted dictum, that war was the extension of politics "by other means." Here, historian Michael Howard argues further that war is one of Reason's progeny—indeed, that war stems from nothing less than a "superabundance of analytic rationality."

by Michael Howard

No one can describe the topic that I have chosen to discuss as a neglected and understudied one. How much ink has been spilled about it, how many library shelves have been filled with works on the subject, since the days of Thucydides! How many scholars from how many specialties have applied their expertise to this intractable problem! Mathematicians, meteorologists, sociologists, anthropologists, geographers, physicists, political scientists, philosophers, theologians, and lawyers are only the most obvious of the categories that come to mind when one surveys the ranks of those who have sought some formula for perpetual peace, or who have at least hoped to reduce the complexities of international conflict to some orderly structure, to develop a theory that will enable us to explain, to understand, and to control a phenomenon which, if we fail to abolish it, might well abolish us.

Yet it is not a problem that has aroused a great deal of interest in the historical profession. The causes of specific wars, yes: These provide unending material for analysis and interpreta-

Der Tag—*the day when war was to be declared—was eagerly awaited by many German generals during the years preceding World War I.*

tion, usually fueled by plenty of documents and starkly conflicting prejudices on the part of the scholars themselves.

But the phenomenon of war as a continuing activity within human society is one that as a profession we take very much for granted. The alternation of war and peace has been the very stuff of the past. War has been throughout history a normal way of conducting disputes between political groups. Few of us, probably, would go along with those sociobiologists who claim that this has been so because man is "innately aggressive." The calculations of advantage and risk, sometimes careful, sometimes crude, that statesmen make before committing their countries to war are linked very remotely, if at all, to the displays of tribal "machismo" that we witness today in football crowds. Since the use or threat of physical force is the most elementary way of asserting power and controlling one's environment, the fact that men have frequently had recourse to it does not cause the historian a great deal of surprise. Force, or the threat of it, may not settle arguments, but it does play a considerable part in

determining the structure of the world in which we live.

I mentioned the multiplicity of books that have been written about the causes of war since the time of Thucydides. In fact, I think we would find that the vast majority of them have been written since 1914, and that the degree of intellectual concern about the causes of war to which we have become accustomed has existed only since the First World War. In view of the damage which that war did to the social and political structure of Europe, this is understandable enough. But there has been a tendency to argue that because that war caused such great and lasting damage, because it destroyed three great empires and nearly beggared a fourth, it must have arisen from causes of peculiar complexity and profundity, from the neuroses of nations, from the widening class struggle, from a crisis in industrial society. I have argued this myself, taking issue with Mr. A. J. P. Taylor, who maintained that because the war had such profound consequences, it did not necessarily have equally profound causes. But now I wonder whether on this, as on so many other matters, I was not wrong and he was not right.

It is true, and it is important to bear in mind in examining the problems of that period, that before 1914 war was almost universally considered an acceptable, perhaps an inevitable and for many people a desirable, way of settling international differences, and that the war generally foreseen was expected to be, if not exactly brisk and cheerful, then certainly brief; no longer, certainly, than the war of 1870 between France and Prussia that was consciously or unconsciously taken by that generation as a model. Had it not been so generally felt that war was an acceptable and tolerable way of solving international disputes, statesmen and soldiers would no doubt have approached the crisis of 1914 in a very different fashion.

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But there was nothing new about this attitude to war. Statesmen had always been able to assume that war would be acceptable at least to those sections of their populations whose opinion mattered to them, and in this respect the decision to go to war in 1914—for continental statesmen at least—in no way differed from those taken by their predecessors of earlier generations. The causes of the Great War are thus in essence no more complex or profound than those of any previous European war, or indeed than those described by Thucydides as underlying the Peloponnesian War: "What made war inevitable was the growth of Athenian power and the fear this caused in Sparta." In Central Europe, there was the German fear that the disintegration of the Habsburg Empire would result in an enormous enhancement of Russian power—power already becoming formidable as French-financed industries and railways put Russian manpower at the service of her military machine. In Western Europe, there was the traditional British fear that Germany might establish a hegemony over Europe which, even more than that of Napoleon, would place at risk the security of Britain and her own possessions, a fear fueled by the knowledge that there was within Germany a widespread determination to achieve a world status comparable with her latent power. Considerations of this kind had caused wars in Europe often enough before. Was there really anything different about 1914?

Ever since the 18th century, war had been blamed by intellectuals upon the stupidity or the self-interest of governing elites (as it is now blamed upon "military-industrial complexes"), with the implicit or explicit assumption that if the control of state affairs were in the hands of sensible men—businessmen, as Richard Cobden thought, the workers, as Jean Jaurès thought—then wars would be no more.

By the 20th century, the growth of the social and biological sciences was producing alternative explanations. As Quincy Wright expressed it in his massive *A Study of War* (1942), "Scientific investigators . . . tended to attribute war to immaturities in social knowledge and control, as one might attribute epidemics to insufficient medical knowledge or to inadequate public health services." The Social Darwinian acceptance of the inevitability of struggle, indeed of its desirability if mankind was to progress, the view, expressed by the elder Moltke but very widely shared at the turn of the century, that perpetual peace was a dream and not even a beautiful dream, did not survive the

Great War in those countries where the bourgeois-liberal culture was dominant, Britain and the United States. The failure of these nations to appreciate that such bellicist views, or variants of them, were still widespread in other areas of the world, those dominated by Fascism and by Marxism-Leninism, was to cause embarrassing misunderstandings, and possibly still does.

For liberal intellectuals, war was self-evidently a pathological aberration from the norm, at best a ghastly mistake, at worst a crime. Those who initiated wars must in their view have been criminal, or sick, or the victims of forces beyond their power to control. Those who were so accused disclaimed responsibility for the events of 1914, throwing it on others or saying the whole thing was a terrible mistake for which no one was to blame. None of them, with their societies in ruins around them and tens of millions dead, were prepared to say courageously: "We only acted as statesmen always have in the past. In the circumstances then prevailing, war seemed to us to be the best way of protecting or forwarding the national interests for which we were responsible. There was an element of risk, certainly, but the risk might have been greater had we postponed the issue. Our real guilt does not lie in the fact that we started the war. It lies in our mistaken belief that we could win it."

The trouble is that if we are to regard war as pathological and abnormal, then all conflict must be similarly regarded; for war is only a particular kind of conflict between a particular category of social groups: sovereign states. It is, as Clausewitz put it, "a clash between major interests that is resolved by bloodshed—that is the only way in which it differs from other conflicts." If one had no sovereign states, one would have no wars, as Rousseau rightly pointed out—but, as Hobbes equally rightly pointed out, we would probably have no peace either. As states acquire a monopoly of violence, war becomes the only remaining form of conflict that may legitimately be settled by physical force. The mechanism of legitimization of authority and of social control that makes it possible for a state to moderate or eliminate conflicts within its borders or at very least to ensure that these are not conducted by competitive violence—the mechanism to the study of which historians have quite properly devoted so much attention—makes possible the conduct of armed conflict with other states, and on occasion—if the state is to survive—makes it necessary.

These conflicts arise from conflicting claims, or interests, or

ideologies, or perceptions; and these perceptions may indeed be fueled by social or psychological drives that we do not fully understand and that one day we may learn rather better how to control. But the problem is the control of social conflict *as such*, not simply of war. However inchoate or disreputable the motives for war may be, its initiation is almost by definition a deliberate and carefully considered act and its conduct, at least at the more advanced levels of social development, a matter of very precise central control. If history shows any record of "accidental" wars, I have yet to find them. Certainly statesmen have sometimes been surprised by the nature of the war they have unleashed, and it is reasonable to assume that in at least 50 percent of the cases they got a result they did not expect. But that is not the same as a war begun by mistake and continued with no political purpose.

Statesmen in fact go to war to achieve very specific ends, and the reasons for which states have fought one another have been categorized and recategorized innumerable times. Vattel, the Swiss lawyer, divided them into the necessary, the customary, the rational, and the capricious. Jomini, the Swiss strategist, identified ideological, economic, and popular wars, wars to defend the balance of power, wars to assist allies, wars to assert or to defend rights. Quincy Wright, the American political scientist, divided them into the idealistic, the psychological, the political, and the juridical. Bernard Brodie in our own times has refused to discriminate: "Any theory of the causes of war in general or any war in particular that is not inherently eclectic and comprehensive," he stated, ". . . is bound for that very reason to be wrong." Another contemporary analyst, Geoffrey Blainey, is on the contrary unashamedly reductionist. All war aims, he wrote, "are simply varieties of power. The vanity of nationalism, the will to spread an ideology, the protection of kinsmen in an adjacent land, the desire for more territory . . . all these represent power in different wrappings. The conflicting aims of rival nations are always conflicts of power."

In principle, I am sure that Bernard Brodie was right: No single explanation for conflict between states, any more than for conflict between any other social groups, is likely to stand up to critical examination. But Blainey is right as well. Quincy Wright provided us with a useful indicator when he suggested that "while animal war is a function of instinct and primitive war of the mores, civilized war is primarily a function of state politics."

Medievalists will perhaps bridle at the application of the term "primitive" to the sophisticated and subtle societies of the Middle Ages, for whom war was also a "function of the mores," a way of life that often demanded only the most banal of justifications. As a way of life, it persisted in Europe well into the 17th century, if no later. For Louis XIV and his court war was, in the early years at least, little more than a seasonal variation on hunting. But by the 18th century, the mood had changed. For Frederick the Great, war was to be pre-eminently a function of *Staatspolitik*, and so it has remained ever since. And although statesmen can be as emotional or as prejudiced in their judgments as any other group of human beings, it is very seldom that their attitudes, their perceptions, and their decisions are not related, however remotely, to the fundamental issues of *power*, that capacity to control their environment on which the independent existence of their states and often the cultural values of their societies depend.

And here perhaps we do find a factor that sets interstate conflict somewhat apart from other forms of social rivalry. States may fight—indeed as often as not they do fight—not over any specific issue such as might otherwise have been resolved by peaceful means, but in order to acquire, to enhance, or to preserve their capacity to function as independent actors in the international system at all. "The stakes of war," as Raymond Aron has reminded us, "are the existence, the creation, or the elimination of States." It is a somber analysis, but one which the historical record very amply bears out.

It is here that those analysts who come to the study of war from the disciplines of the natural sciences, particularly the biological sciences, tend, it seems to me, to go astray. The conflicts between states which have usually led to war have normally arisen, not from any irrational and emotive drives, but from almost a superabundance of analytic rationality. Sophisticated communities (one hesitates to apply to them Quincy Wright's word, "civilized") do not react simply to immediate threats. Their intelligence (and I use the term in its double sense) enables them to assess the implications that any event taking place anywhere in the world, however remote, may have for their own capacity, immediately to exert influence, ultimately perhaps to survive. In the later Middle Ages and the early Modern period, every child born to every prince anywhere in Europe was registered on the delicate seismographs that monitored the

shifts in dynastic power. Every marriage was a diplomatic triumph or disaster. Every stillbirth, as Henry VIII knew, could presage political catastrophe.

Today, the key events may be different. The pattern remains the same. A malfunction in the political mechanism of some remote African community, a coup d'état in a minuscule Caribbean republic, an insurrection deep in the hinterland of Southeast Asia, an assassination in some emirate in the Middle East—all these will be subjected to the kind of anxious examination and calculation that was devoted a hundred years ago to the news of comparable events in the Balkans: an insurrection in Philippopoli, a coup d'état in Constantinople, an assassination in Belgrade. To whose advantage would this ultimately redound, asked the worried diplomats, of *ours* or *theirs*? Little enough in itself, perhaps, but will it not precipitate or strengthen a trend, set in motion a tide whose melancholy withdrawing roar will strip us of our friends and influence and leave us isolated in a world dominated by adversaries deeply hostile to us and all that we stand for?

There have certainly been occasions when states have gone to war in a mood of ideological fervor like the French republican armies in 1792; or of swaggering aggression like the Americans against Spain in 1898 or the British against the Boers a year later; or to make more money, as did the British in the War of Jenkins' Ear in 1739; or in a generous desire to help peoples of similar creed or race, as perhaps the Russians did in helping the Bulgarians fight the Turks in 1877 and the British dominions certainly did in 1914 and 1939. But, in general, men have fought during the past two hundred years neither because they are aggressive nor because they are acquisitive animals, but because they are reasoning ones: because they discern, or believe that they can discern, dangers before they become immediate, the possibility of threats before they are made.

But be this as it may, in 1914 many of the German people, and in 1939 nearly all of the British, felt justified in going to war, not over any specific issue that could have been settled by negotiation, but *to maintain their power*; and to do so while it was still possible, before they found themselves so isolated, so impotent, that they had no power left to maintain and had to accept a subordinate position within an international system dominated by their adversaries. "What made war inevitable was the growth of Athenian power and the fear this caused in Sparta." Or,

to quote another grimly apt passage from Thucydides:

> The Athenians made their Empire more and more strong . . . [until] finally the point was reached when Athenian strength attained a peak plain for all to see and the Athenians began to encroach upon Sparta's allies. It was at this point that Sparta felt the position to be no longer tolerable and decided by starting the present war to employ all her energies in attacking and if possible destroying the power of Athens.

You can vary the names of the actors, but the model remains a valid one for the purposes of our analysis. I am rather afraid that it still does.

Something that has changed since the time of Thucydides, however, is the nature of the power that appears so threatening. From the time of Thucydides until that of Louis XIV, there was basically only one source of political and military power—control of territory, with all the resources in wealth and manpower that this provided. This control might come through conquest, or through alliance, or through marriage, or through purchase, but the power of princes could be very exactly computed in terms of the extent of their territories and the number of men they could put under arms.

In 17th-century Europe, this began to change. Extent of territory remained important, but no less important was the effectiveness with which the resources of that territory could be exploited. Initially there were the bureaucratic and fiscal mechanisms that transformed loose bonds of territorial authority into highly structured centralized states whose armed forces, though not necessarily large, were permanent, disciplined, and paid.

Then came the political transformations of the revolutionary era that made available to these state systems the entire manpower of their country, or at least as much of it as the administrators were able to handle. And finally came the revolution in transport, the railways of the 19th century that turned the revolutionary ideal of the "Nation in Arms" into a reality. By the early 20th century, military power—on the continent of Europe, at least—was seen as a simple combination of military manpower and railways. The quality of armaments was of secondary importance, and political intentions were virtually excluded from account. The growth of power was measured in

terms of the growth of populations and of communications; of the number of men who could be put under arms and transported to the battlefield to make their weight felt in the initial and presumably decisive battles. It was the mutual perception of threat in those terms that turned Europe before 1914 into an armed camp, and it was their calculations within this framework that reduced German staff officers increasingly to despair and launched their leaders on their catastrophic gamble in 1914, which started the First World War.

But already the development of weapons technology had introduced yet another element into the international power calculus, one that has in our own age become dominant. It was only in the course of the 19th century that technology began to produce weapons systems—initially in the form of naval vessels—that could be seen as likely in themselves to prove decisive, through their qualitative and quantitative superiority, in the event of conflict. But as war became increasingly a matter of competing technologies rather than competing armies, so there developed that escalatory process known as the "arms race." As a title, the phrase, like so many coined by journalists to catch the eye, is misleading.

"Arms races" are in fact continuing and open-ended attempts to match power for power. They are as much means of achieving stable or, if possible, favorable power balances as were the dynastic marriage policies of Valois and Habsburg. To suggest that they in themselves are causes of war implies a naive if not totally mistaken view of the relationship between the two phenomena. The causes of war remain rooted, as much as they were in the preindustrial age, in perceptions by statesmen of the growth of hostile power and the fears for the restriction, if not the extinction, of their own. The threat, or rather the fear, has not changed, whether it comes from aggregations of territory or from dreadnoughts, from the numbers of men under arms or from missile systems. The means that states employ to sustain or to extend their power may have been transformed, but their objectives and preoccupations remain the same.

"Arms races" can no more be isolated than wars themselves from the political circumstances that give rise to them, and like wars they will take as many different forms as political circumstances dictate. They may be no more than a process of competitive modernization, of maintaining a status quo that commands general support but in which no participant wishes, whether

from reasons of pride or of prudence, to fall behind in keeping his armory up to date. If there are no political causes for fear or rivalry, this process need not in itself be a destabilizing factor in international relations. But arms races may, on the other hand, be the result of a quite deliberate assertion of an intention to *change* the status quo, as was, for example, the German naval challenge to Britain at the beginning of this century.

This challenge was an explicit attempt by Admiral Alfred von Tirpitz and his associates to destroy the hegemonic position at sea which Britain saw as essential to her security, and, not inconceivably, to replace it with one of their own. As British and indeed German diplomats repeatedly explained to the German government, it was not the German naval program in itself that gave rise to so much alarm in Britain. It was the intention that lay behind it. If the status quo was to be maintained, the German challenge had to be met.

The naval race could quite easily have been ended on one of two conditions. Either the Germans could have abandoned their challenge, as had the French in the previous century, and acquiesced in British naval supremacy; or the British could have yielded as gracefully as they did, a decade or so later, to the United States and abandoned a status they no longer had the capacity, or the will, to maintain. As it was, they saw the German challenge as one to which they could and should respond, and their power position as one which they were prepared, if necessary, to use force to preserve. The British naval program was thus, like that of the Germans, a signal of political intent; and that intent, that refusal to acquiesce in a fundamental transformation of the power balance, was indeed a major element among the causes of the war. The naval competition provided a very accurate indication and measurement of political rivalries and tensions, but it did not cause them; nor could it have been abated unless the rivalries themselves had been abandoned.

It was the general perception of the growth of German power that was awakened by the naval challenge, and the fear that a German hegemony on the Continent would be the first step to a challenge to her own hegemony on the oceans, that led Britain to involve herself in the continental conflict in 1914 on the side of France and Russia. "What made war inevitable was the growth of *Spartan* power," to reword Thucydides, "and the fear which this caused in *Athens*." In the Great War that followed, Germany was defeated, but survived with none of her la-

tent power destroyed. A "false hegemony" of Britain and France was established in Europe that could last only so long as Germany did not again mobilize her resources to challenge it. German rearmament in the 1930s did not of itself mean that Hitler wanted war (though one has to ignore his entire philosophy if one is to believe that he did not); but it did mean that he was determined, with a great deal of popular support, to obtain a free hand on the international scene.

With that free hand, he intended to establish German power on an irreversible basis; this was the message conveyed by his armament program. The armament program that the British reluctantly adopted in reply was intended to show that, rather than submit to the hegemonic aspirations they feared from such a revival of German power, they would fight to preserve their own freedom of action. Once again to recast Thucydides:

> Finally the point was reached when German strength attained a peak plain for all to see, and the Germans began to encroach upon Britain's allies. It was at this point that Britain felt the position to be no longer tolerable and decided by starting this present war to employ all her energies in attacking and if possible destroying the power of Germany.

What the Second World War established was not a new British hegemony, but a Soviet hegemony over the Euro-Asian land mass from the Elbe to Vladivostok; and that was seen, at least from Moscow, as an American hegemony over the rest of the world; one freely accepted in Western Europe as a preferable alternative to being absorbed by the rival hegemony. Rival armaments were developed to define and preserve the new territorial boundaries, and the present arms competition began. But in considering the present situation, historical experience suggests that we must ask the fundamental question: *What kind of competition is it?* Is it one between powers that accept the status quo, are satisfied with the existing power relationship, and are concerned simply to modernize their armaments in order to preserve it? Or does it reflect an underlying instability in the system?

My own perception, I am afraid, is that it is the latter. There was a period for a decade after the war when the Soviet Union was probably a status quo power but the West was not; that is, the Russians were not seriously concerned to challenge the American global hegemony, but the West did not accept that of the Russians in Eastern Europe. Then there was a decade of rel-

ative mutual acceptance between 1955 and 1965; and it was no accident that this was the heyday of disarmament/arms-control negotiations. But thereafter, the Soviet Union has shown itself increasingly unwilling to accept the Western global hegemony, if only because many other people in the world have been unwilling to do so either. Reaction against Western dominance brought the Soviet Union some allies and many opportunities in the Third World, and she has developed naval power to be able to assist the former and exploit the latter. She has aspired in fact to global power status, as did Germany before 1914; and if the West complains, as did Britain about Germany, that the Russians do not *need* a navy for defense purposes, the Soviet Union can retort, as did Germany, that she needs it to make clear to the world the status to which she aspires; that is, so that she can operate on the world scene by virtue of her own power and not by permission of anyone else. Like Germany, she is determined to be treated as an equal, and armed strength has appeared the only way to achieve that status.

The trouble is that what is seen by one party as the breaking of an alien hegemony and the establishment of equal status will be seen by the incumbent powers as a striving for the establishment of an alternate hegemony, and they are not necessarily wrong. In international politics, the appetite often comes with eating; and there really may be no way to check an aspiring rival except by the mobilization of stronger military power. An arms race then becomes almost a necessary surrogate for war, a test of national will and strength; and arms control becomes possible only when the underlying power balance has been mutually agreed.

We would be blind, therefore, if we did not recognize that the causes which have produced war in the past are operating in our own day as powerfully as at any time in history. It is by no means impossible that a thousand years hence a historian will write—if any historians survive, and there are any records for them to write history from—"What made war inevitable was the growth of Soviet power and the fear which this caused in the United States."

But times *have* changed since Thucydides. They have changed even since 1914. These were, as we have seen, bellicist societies in which war was a normal, acceptable, even a desirable way of settling differences. The question that arises today

is, how widely and evenly spread is that intense revulsion against war that at present characterizes our own society? For if war is indeed now *universally* seen as being unacceptable as an instrument of policy, then all analogies drawn from the past are misleading, and although power struggles may continue, they will be diverted into other channels. But if that revulsion is not evenly spread, societies which continue to see armed force as an acceptable means for attaining their political ends are likely to establish a dominance over those which do not. Indeed, they will not necessarily have to fight for it.

My second and concluding point is this: Whatever may be the underlying causes of international conflict, even if we accept the role of atavistic militarism or of military-industrial complexes or of sociobiological drives or of domestic tensions in fueling it, wars begin with conscious and reasoned decisions based on the calculation, made by *both* parties, that they can achieve more by going to war than by remaining at peace.

Even in the most bellicist of societies this kind of calculation has to be made and it has never even for them been an easy one. When the decision to go to war involves the likelihood, if not the certainty, that the conflict will take the form of an exchange of nuclear weapons from which one's own territory cannot be immune, then even for the most bellicist of leaders, even for those most insulated from the pressures of public opinion, the calculation that they have more to gain from going to war than by remaining at peace and pursuing their policies by other means will, to put it mildly, not be self-evident. The odds against such a course benefiting their state or themselves or their cause will be greater, and more *evidently* greater, than in any situation that history has ever had to record. Society may have accepted killing as a legitimate instrument of state policy, but not, as yet, suicide. For that reason I find it hard to believe that the abolition of nuclear weapons, even if it were possible, would be an unmixed blessing. Nothing that makes it easier for statesmen to regard war as a feasible instrument of state policy, one from which they stand to gain rather than lose, is likely to contribute to a lasting peace.

A society wedding in Newport, Rhode Island, in 1910. By the end of the 17th century, white had become identified with maidenly innocence. But pink, blue, and yellow bridal dresses persisted until the late 19th century, when "white weddings"—with bridesmaids, the best man, and composer Richard Wagner's "Bridal Chorus"—became an established tradition.

Traditions

Defining "tradition" is no easy matter. Sociologist Edward Shils called it "anything which is transmitted or handed down from the past to the present." In Chinese weddings as in the U.S. Marine Corps, beliefs, images, social practices, and institutions may all partake of the traditional. Yet the symbols and rituals are less important than the human motives that guide their transmission down through the ages. Tradition may simply function as a means of promoting social stability and continuity. On the other hand, scholars note, it may be deliberately developed and cultivated as a way of rewriting the past in order to justify the present. Here, in two case studies, Hugh Trevor-Roper and Terence Ranger suggest that what we now regard as "age-old" traditions may have their origins in inventive attempts to "establish or legitimize . . . status or relations of authority."

THE HIGHLANDER MYTH

by Hugh Trevor-Roper

Today, whenever Scotsmen gather together to celebrate their national identity, they wear the kilt, woven in a tartan whose colors and pattern indicate their clan. This apparel, to which they ascribe great antiquity, is, in fact, of fairly recent origin. Indeed, the whole concept of a distinct Highland culture and tradition is a retrospective invention.

Before the later years of the 17th century, the Highlanders of Scotland did not form a distinct people. They were simply the overflow of Ireland. On the broken and inhospitable coast of western Scotland, in that archipelago of islands large and small, the sea unites rather than divides, and from the late fifth century, when the Scots of Ulster landed in Argyll, until the mid–18th century, when it was "opened up" after the Jacobite revolts, the west of Scotland, cut off by mountains from the

east, was always linked rather to Ireland than to the Saxon Lowlands.*

The Gaelic language spoken there was regularly described, in the 18th century, as Irish. The native literature, such as it was, was a crude echo of Irish literature. The bards of the Scottish chieftains came from Ireland or went thither to learn their trade. The creation of an independent Highland tradition occurred in the 18th century, with a cultural revolt against Ireland or, more precisely, with the usurpation of Irish culture and the rewriting of Scottish history. The claim that the Celtic, Irish-speaking Highlanders of Scotland were not merely invaders from Ireland but were in fact the Caledonians who had resisted the Roman armies, was of course an old legend. It was reasserted successfully in the 1760s by two writers of the same surname: James Macpherson, the "translator" of Ossian, and the Reverend John Macpherson, pastor of Sleat on the island of Skye. These two Macphersons, though unrelated, were known to each other, and they worked in concert.

The sheer effrontery of the Macphersons must excite admiration. James Macpherson picked up Irish ballads in Scotland and, in 1763, reworked them into an "epic," which he attributed to a legendary third-century Gaelic bard named Ossian; he transferred the whole scenario from Ireland to Scotland, and then dismissed the genuine ballads thus maltreated as debased modern compositions.

John Macpherson, the pastor of Sleat, then wrote a *Critical Dissertation* in which he provided the necessary context for his colleague's "discovery": He placed Irish-speaking Celts in Scotland four centuries before their historical arrival and explained away the genuine, native Irish literature as

*The Jacobites supported the restoration of the Stuart dynasty to the thrones of Scotland and England. James VI of Scotland had become James I of England following the death, in 1603, of his first cousin once removed, the childless Queen Elizabeth. Eighty-five years later, in 1688, James II, a Catholic and the fourth of Britain's Stuart monarchs, was deposed in the Glorious Revolution that brought the Dutch Protestant William of Orange to the throne. Led from France first by the unseated King, then by his son, James Francis Edward, and then by his grandson, Charles Edward ("Bonny Prince Charlie"), the Jacobites sought to achieve their ends by invasion (1708) and insurrection (1715). Jacobite opposition was finally crushed at the Battle of Culloden in 1746.—ED.

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having been stolen, in the Dark Ages, by the unscrupulous Irish from the innocent Scots.

Of the success of the Macphersons in literary London, no more need be said than that they seduced even the normally careful and critical Edward Gibbon, author of *The Decline and Fall of the Roman Empire* (1788). He acknowledged as his guides in early Scottish history those "two learned Highlanders" and thus perpetuated what historian M. V. Hay has called "a chain of error in Scottish history."

These two insolent pretenders had achieved a lasting triumph: They had put the Scottish Highlanders on the map.

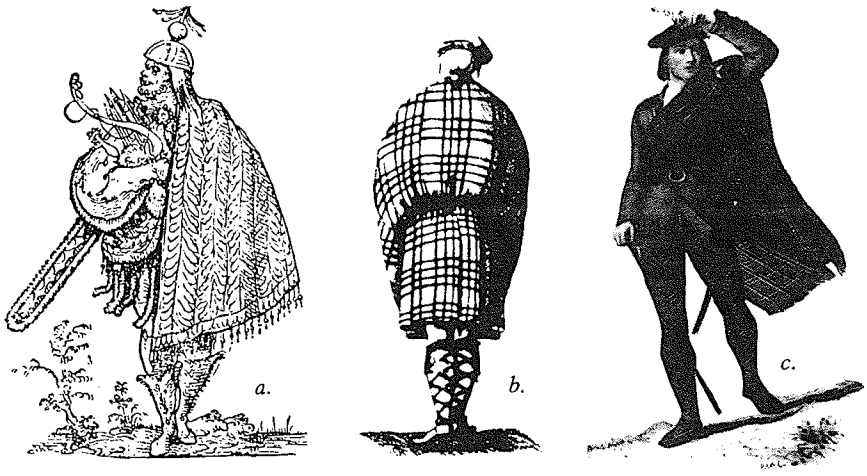
Previously despised alike by the Lowland Scots as disorderly savages, and by the Irish as their unlettered poor kinsmen, Highlanders were now celebrated throughout Europe as a *Kulturvolk* which, when England and Ireland were sunk in primitive barbarism, had produced an epic poet of exquisite refinement and sensibility, equal (said Madame de Staël) or superior (said F. A. Wolf) to Homer. And even as the Scottish Highlands acquired, however fraudulently, an independent ancient culture, a new tradition sprang up—that of a peculiarity of dress.

Inventing the Kilt

Since the Scottish Highlanders were, in origin, Irishmen, it is natural to suppose that originally their dress was the same as that of the Irish. And indeed this is what we find. Accounts written in the 16th century show that the ordinary dress of the Highlanders was a long "Irish" shirt, which the higher classes—as in Ireland—dyed with saffron; a tunic; and a rough cloak, or "plaid," which, in general, was of a russet or brown effect, as protective coloring in the heather.

Chieftains and great men who had contact with the more sophisticated inhabitants of the Lowlands might wear trews, a combination of breeches and stockings. Trews could be worn outdoors in the Highlands only by men who had attendants to protect or carry them: They were therefore a mark of social distinction. The higher classes' plaids and trews were probably of colorful tartan, a design that seems to have come originally from Flanders and reached the Highlands through the Lowlands.

In the course of the 17th century, the Irish long shirt fell into disuse. Accounts of the British civil wars depict Highland officers wearing trews, but the ordinary soldiers with their legs and thighs bare. The name "kilt" first appears in 1727, when Edward Burt, an English officer posted to Scotland, wrote a series of letters, mainly from Inverness, describing the character and cus-



The (a) Irish dress, adopted by the Scots, of long shirt and cloak gave way to the (b) belted plaid in the 17th century. (c)Trews were worn by the upper classes. In 1727, Thomas Rawlinson designed the (d) short kilt. Restricted

toms of the country. In his letters, he gives a careful description of the "quelt," which, he explains, is simply the plaid "set in folds and girt round the waist to make of it a short petticoat that reaches half-way down the thigh, and the rest is brought over the shoulders and then fastened before." This petticoat, Burt adds, was normally worn "so very short that in a windy day, going up a hill, or stooping, the indecency of it is plainly discovered." Clearly he is describing not the modern kilt but a particular method of wearing the plaid, called the belted plaid or *breacan*.

Burt was explicit about the Highland dress because already, in his time, it was the object of political controversy. After the Jacobite rebellion of 1715, the British Parliament had considered banning it by law, as the Irish dress had been banned under Henry VIII, to help integrate the Highlanders into modern British society. The proposed law, however, was not passed. The Highland dress, it was conceded, was convenient and necessary in a country where a traveler must "skip over rocks and bogs and lie all night in the hills."

Ironically, if the Highland dress had been banned after the rebellion of 1715, the kilt, which is now regarded as one of the ancient traditions of Scotland, would probably never have come into existence. Its inventor was an English Quaker ironmaster from Lancashire, Thomas Rawlinson.

to British Highland regiments from 1745 until 1782, the (e) *kilt returned in a more elaborate mode, and is now a symbol of all things Scottish, including the* (f) *Dewar's Whiskey Highlander.*

In 1727, Rawlinson made an agreement with Ian MacDonell, chief of the MacDonells of Glengarry near Inverness, for a 31-year lease of a wooded area at Invergarry. There he built a furnace to smelt iron ore, which he had shipped up from Lancashire. During his stay at Glengarry, Rawlinson became interested in the Highland costume, but he also became aware of its inconvenience. For men who had to fell trees or tend furnaces, the belted plaid was "a cumbrous, unwieldy habit." Being "a man of genius and quick parts," Rawlinson sent for a tailor and, with him, set out "to abridge the dress and make it handy and convenient for his workmen."

The result was the *felie beg*, philibeg, or "small kilt," which was achieved by separating the skirt from the plaid and converting it into a distinct garment, with pleats already sewn. Rawlinson himself wore this new garment, and his innovation, we are told, "was found so handy and convenient that in the shortest space the use of it became frequent in all the Highland countries and in many of the Northern Lowland countries also."*

The first painting to feature a person wearing a recognizable modern kilt, not a belted plaid, was a portrait of Alexander MacDonell of Glengarry (the son of Rawlinson's friend) and his

*This account, from Ivan Baillie of Abereachen, was published in the *Edinburgh Magazine*, March 1785.

servant. It is interesting to note that, in this portrait, the kilt is worn not by MacDonell but by the servant—thus emphasizing, once again, its "servile" status.

If this was the origin of the kilt, a question immediately arises. Was a distinctive "sett" or pattern of colors devised for a Lancashire Rawlinson, or did he became an honorary member of the clan of MacDonell? When did the differentiation of patterns by clans begin?

The 16th-century writers who first noticed the Highland dress did not remark any such differentiation. They describe the plaids of the chiefs as colored, those of their followers as brown, so that any differentiation of color, in their time, was by social status, not by clan. A carefully painted series of portraits of the different members of the Grant family by Richard Waitt in the 18th century shows all of them in different tartans. The only way in which a Highlander's loyalty could be discerned in battle was by the colored cockade in his bonnet; tartans were a matter of private taste.

The great Scottish rebellion of 1745, however, changed the sartorial as well as the social and economic history of Scotland. Acts of Parliament that followed the victory at Culloden not only disarmed the Highlanders and deprived their chiefs of their hereditary jurisdictions but also forbade the wearing of Highland costume—"plaid, philibeg, trews, shoulder-belts . . . tartans or parti-coloured plaid or stuff."

Touting the Philibeg

This last draconian measure remained in force for 35 years, years during which the whole Highland way of life quickly crumbled. In 1773, when Samuel Johnson and James Boswell made their famous tour of Scotland, they found that they were already too late to see what they had expected, "a people of peculiar appearance and a system of antiquated life." It was during this period that the Macphersons composed their ancient literature and inventive history.

The Highland costume did indeed die out among those who had been accustomed to wearing it. When the ban was lifted in 1782, the simple sheep-raising peasantry of the Highlands saw no reason, after a generation in trousers, to resume the belted plaid or the tartan, which they had once found so serviceable. They did not even turn to the "handy and convenient" new kilt.

On the other hand, the upper and middle classes, who had previously despised the "servile" costume, now picked up, with enthusiasm, the garb discarded by its traditional wearers. Dur-

ing the years when it had been banned, some Highland noblemen had taken pleasure in wearing it and being portrayed in it in the safety of their homes. Now that the ban was lifted, the fashion spread. Anglicized Scottish peers, improving gentry, well-educated Edinburgh lawyers, and prudent merchants of Aberdeen would exhibit themselves publicly, not in the historic trews, the traditional costume of their class, nor in the cumbrous belted plaid, but in a costly and fanciful version of that recent innovation, the philibeg, or small kilt.

Two causes explain this remarkable change. One was the romantic movement in Europe, the cult of the noble savage whom civilization threatened to destroy. Before 1745, the Highlanders had been despised as idle predatory barbarians. In 1745, they had been feared as dangerous rebels. But after 1746, when their distinct society crumbled so easily, they combined the romance of a primitive people with the charm of an endangered species.

Enter George IV

The second cause was the formation, by the British government, of the Highland regiments.

The creation of the Highland regiments had begun before 1745—indeed, the first such regiment, the Black Watch, had fought at Fontenoy in 1740. But it was during the years 1757–60 that William Pitt the Elder systematically sought to divert the martial spirit of the Highlanders from Jacobite adventure to imperial war. The Highland regiments also helped to establish a new sartorial tradition. For by the "Disarming Act" of 1747, they were explicitly exempted from the ban on Highland dress.

Originally, the Highland regiments wore as their uniform the belted plaid; but once Rawlinson had invented the kilt and its convenience had made it popular, it was adopted by them. Moreover, it was probably their use of the kilt that gave birth to the idea of differentiating tartan by clans; for as the Highland regiments were multiplied to meet the needs of Britain's overseas wars, so their tartan uniforms were differentiated.

At least one Scotsman, from the beginning, raised his voice against the whole process whereby the Celtic Highlanders, so recently despised as outer barbarians, were claiming to be the sole representatives of Scottish history and culture. John Pinkerton was a man whose undoubted eccentricity and violent prejudices cannot rob him of his claim to be the greatest Scottish antiquary since Thomas Innes. He was an implacable enemy of the historical and literary falsification of the two Macphersons. He was also, in the late 1700s, the first scholar to document the history

of the Highland dress, terming the philibeg "modern," "grossly indecent," and "effeminate."

He wrote in vain. The Highland takeover, already begun, was given emphatic publicity in 1822 by King George IV's state visit to Edinburgh.

Never before had a Hanoverian monarch appeared in the capital of Scotland, and elaborate preparations were made to ensure that the occasion would be a success. The master of ceremonies entrusted with all practical arrangements was Sir Walter Scott, already the author of 11 novels, including *Waverly* (1814) and *Ivanhoe* (1819). Carried away by romantic Celtic fantasies, Scott was determined to forget historic Scotland, his own Lowland Scotland, altogether. "Do come and bring half-a-dozen or half-a-score of clansmen," Scott wrote to one Highland chief. "Highlanders are what he will best like to see."

The Highlanders duly came, wearing the clan tartans provided by local manufacturers who had a long history of resourcefulness in creating markets for their wares.

The greatest of these firms was that of William Wilson and Son of Bannockburn. Messrs. Wilson had seen early the advantage of building up a repertoire of differentiated clan tartans and thus stimulating tribal competition. For this purpose, they entered into alliance with the Highland Society of London (which had been founded in 1788, and whose early members included both James Macpherson and Sir John Macpherson), thereby throwing over their commercial project, a cloak, or plaid, of historical respectability.

In 1819, when the royal visit was first suggested, the firm prepared a "Key Pattern Book" and sent samples of its various tartans to London, where the Society duly "certified" them as belonging to this or that clan. However, when George IV's visit was confirmed, the time for such pedantic consistency had passed. The spate of orders was now such that "every piece of tartan was sold as it came off the loom."

The Brothers Allen

In these circumstances, the first duty of the firm was to keep up the supply and ensure that the Highland chiefs were able to buy what they needed. So Cluny Macpherson, heir to the discoverer of Ossian, was given a tartan from the peg. For him it was now labeled "Macpherson." Previously, having been sold in bulk to a Mr. Kidd to clothe his West Indian slaves, it had been labeled "Kidd."

Thus was the capital of Scotland "tartanized" to receive its

King, who himself came dressed in a kilt, played his part in the Celtic pageant, and at the climax of the visit solemnly invited the assembled dignitaries to drink a toast, not to the actual or historical elite, but to "the chieftains and clans of Scotland."

So we come to the last stage in the creation of the Highland myth: the reconstruction and extension, in ghostly and sartorial form, of that clan system whose reality had been destroyed after 1745. The essential figures in this episode were two of the most elusive and most seductive characters who have ever ridden the Celtic hobbyhorse or aerial broomstick: the brothers Allen.

They came from a well-connected English naval family. Their grandfather, John Carter Allen, had been an admiral. His son, their father, had served briefly in the Royal Navy; their mother was the daughter of a learned clergyman in Surrey.

An Exciting Discovery

The early life of the two sons is undocumented. All that we can say of them is that they were both talented artists in many fields. They wrote romantic poems in the style of Scott; they were learned, though evidently self-taught, in many languages; they were skillful draftsmen, woodcarvers, furniture makers. Their persuasive manners and great social charm enabled them to move at ease in the best society.

The exact occasion of their first appearance in Scotland is unknown, but they were evidently there with their father during the royal visit in 1822. There is some reason to think that the Allen family was in touch with Wilson and Son at this time.

In the following years, the brothers may have spent some time abroad, but they also appeared occasionally in great Scottish houses or at fashionable functions, dressed (as one English observer put it) "in all the extravagance of which the Highland costume is capable—every kind of tag and rag, false orders and tinsel ornaments."

They had now Scoticized their name, first as Allan, then, via Hay Allan, as Hay; and they encouraged the belief that they were descended from the last Hay, earl of Errol. (As the earl had remained a lifelong bachelor, they presumably credited him with a secret marriage; but their claims were never weakened by explicit assertion.)

Much of the brothers' time was spent in the far north, where the earl of Moray gave them the run of Darnaway Forest, and they became expert deer hunters. They never lacked aristocratic patrons such as Sir Thomas Dick Lauder, whose wife had an estate in Elgin. To him, in 1829, they revealed that they had in

On his 1822 visit to Edinburgh, King George IV (left) gave royal sanction to the Highlander craze by donning the kilt. This caricature depicts him proclaiming, "I am every inch a Scot," to William Curtis, London's Lord Mayor.

their possession an important historical document. This was a manuscript that (they said) had once belonged to John Leslie, bishop of Ross, the confidant of Mary Queen of Scots, and had been given to their father by none other than the Young Chevalier, Bonny Prince Charlie.

The manuscript was entitled *Vestiarium Scoticum*, or *The Garde-robe of Scotland*, and was a depiction of the clan tartans of Scottish families, declaring itself to be the work of one Sir Richard Urquhart, knight. Bishop Leslie had inserted his date—1571—but the manuscript could have been, of course, much earlier.

Sir Thomas was very excited by this discovery. Not only was the document important in itself, but it also provided an authentic ancient authority for distinct clan tartans, and it showed that such tartans had been used by Lowlanders as well as Highlanders—a fact very gratifying to Lowland families eager to scramble in on the act. So Sir Thomas made a transcript of the text, which the younger brother obligingly illustrated for him. He then wrote to Sir Walter Scott, as the oracle on all such matters, urging that the document be published to correct the numerous "uncouth, spurious, modern tartans which are every day manufactured, christened after particular

names, and worn as genuine."

Scott was not taken in. He did not believe that Lowlanders had ever worn clan tartans, and he suspected a tartan weavers' scheme. At the very least, he insisted that the original manuscript be submitted to experts at the British Museum.

Sir Thomas followed up this suggestion, and the elder brother very readily agreed; but that line of research was blocked when he produced a letter from his father, signed "J. T. Stuart Hay," firmly reprimanding him for even mentioning the document, which (he said)—apart from the futility of seeking to revive a world now irrecoverably lost—could never be exhibited to profane eyes on account of certain "private memorandums on the blank leaves."

Seeing Is Believing

Defeated by the authority of Scott, the brothers retired again to the north and gradually perfected their image, their expertise, and their manuscript. They had now found a new patron, Lord Lovat, the Catholic head of the Fraser family, whose ancestor had died on the scaffold in 1747. They also adopted a new religious loyalty, declaring themselves Roman Catholics, and a new and grander identity. They dropped the name of Hay and assumed the royal name of Stuart. The elder brother called himself John Sobieski Stuart (John Sobieski, the hero-king of Poland, was the maternal great-grandfather of the Young Chevalier); the younger became, like the Young Chevalier himself, Charles Edward Stuart.

In 1842, the brothers at last published their famous manuscript, *Vestiarium Scoticum*. It appeared in a sumptuous edition limited to 50 copies. The series of colored illustrations of tartans was the first ever to be published.

John Sobieski Stuart, as editor, supplied a learned commentary and new proofs of the authenticity of the manuscript, including a "traced facsimile" of Bishop Leslie's autograph. The manuscript itself, he said, had been "carefully collated" with a second manuscript recently discovered by an unnamed Irish monk in a Spanish monastery, unfortunately since dissolved. Another manuscript, recently in the possession of Lord Lovat, was also cited, although it had unfortunately been carried to America and there lost; but it was being actively sought. . . .

The *Vestiarium Scoticum*, being of such limited distribution, attracted little notice on its publication. Scott was now dead, and Dick Lauder, though he had remained "a believer," held his peace. Had he scrutinized the printed setts, he might

STAGING AN EMPIRE

"Britain may have lost out on a number of things, but we can still show the world a clean pair of heels when it comes to ceremonial. Yesterday's pageantry . . . proves there is something to be said for doing things the old-fashioned way." So proclaimed London's *Daily Mirror* on the occasion of Elizabeth II's Silver Jubilee in 1977. Yet, according to Cambridge historian David Cannadine, the "old-fashioned way" isn't all that old: Most British royal ceremonial "traditions" date back a scant 100 years.

The antics of drunken undertakers marred the funeral of Princess Charlotte in 1817. In 1821, George IV indulged in a coronation of pomp and style "so overblown," writes Cannadine, "that grandeur merged into farce": Prize fighters were called into Westminster Hall to maintain order. By contrast, William IV's coronation in 1831 was "so truncated that it became mockingly known as the 'Half-Crownation.'" Victoria's in 1838 "was completely unrehearsed." And the 1861 funeral of her consort, Albert, was described as "almost a private affair."

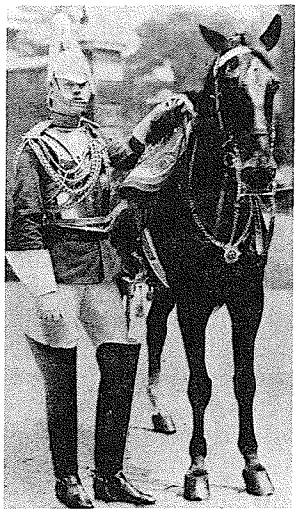
So it was that the last century in which the British monarchy exercised any real political influence saw royal pageantry that was downright shabby. But according to Cannadine, this contradiction was no coincidence. In an age that boasted of self-made men, "continuing royal power made grand royal ceremonial unacceptable." Royal ritual remained "a group rite in which the aristocracy, the church, and the royal family . . . re-affirmed their solidarity (or animosity) behind closed doors."

Toward the end of the century, however, a change occurred. It began, somewhat shakily, with Victoria's Golden Jubilee celebration in 1887. (Victoria refused to don the robes of state or even the crown, but nonetheless, as the *Illustrated London News* reported, the occasion produced "pageantry such as this generation never saw.") The trend developed in earnest during the reign of Edward VII (1901–10), when many cherished "traditions" were inaugurated—the opening of Parliament in full regalia, the elaborate yet dignified coronation, even the public lying-in-state of deceased monarchs at Westminster Hall.

Credit for the royal face-lift goes to three men: Sir Edward Elgar, whose stirring compositions such as "Pomp and Circumstance no. 1" rescued British ceremonial music from the previous century's banality; Reginald Brett, Viscount Esher, the deputy constable and lieutenant governor of Windsor Castle, who oversaw every major royal ceremonial from Victoria's Diamond Jubilee (1897) to Edward VII's funeral (1910); and finally, Edward VII himself, whose own "promptness, imagination, and invention" in ceremonial matters drew Esher's high praise.

Edward, age 59 at his accession, had waited a good long while to en-

joy the trappings of monarchy. The reasons for the growing British infatuation with elaborate royal ritual are more complex. An important factor, as Cannadine points out, was the "gradual retirement of the monarchs from active politics." Victoria's reclusion in widowhood and Edward's penchant for vacations, acquired during his long years of unemployment, were one side of this coin; a broadening franchise and growing party strength were the other. No longer a *force* to contend with, the monarch became a symbol of unity above the fray during an era when rising worker unrest was making political and social dealings increasingly fractious. As the Archbishop of Canterbury put it after Victoria's Golden Jubilee, "Everyone feels that the Socialist movement has had a check."



Moreover, the British Empire was finally facing serious competition abroad. The scramble for Africa intensified during the century's third quarter. And by 1886, both Germany and the United States were outproducing Britain in steel; Britain's annual rate of growth dropped below two percent, and its textile industry declined. Nations jockeyed symbolically for status: Germany and Italy's "*parvenu* monarchies," Austria's Habsburgs, and Russia's Romanovs all strove to outdo one another in ceremonial displays; even republican nations got into the act, with the French creating Bastille Day in 1880, and the Americans staging a mammoth Centennial. But in Britain, similar efforts, hailed by the populace, were "an expression of . . . bravado," observes Cannadine, "at a time when [the nation's] real power was already on the wane."

In the 20th century, the British monarchy has grown more visible as the world's other major monarchies have vanished. As the British Empire has faded, new royal ceremonies have been invented and elaborated—notably, the public weddings of royal offspring. For this, the British press must take some credit. Just as the popular illustrated newspapers of the late 19th century fanned Britons' enthusiasm for royal events, so have radio and television nurtured growing affection for the royal family, heightened popular enjoyment of regal ceremonies, and reinforced prevailing misconceptions about their origins.

The truth, says Cannadine, would no doubt surprise "those commentators and journalists who, on every great royal ceremonial occasion, talk glibly of a 'thousand-year-old tradition.'"

have noted, with surprise, that they had been considerably revised since they had been copied by the younger brother into his own transcript.

But the published *Vestiarium*, it soon appeared, was only a preliminary *pièce justificative* for a far more wide-ranging original work. Two years later, the two brothers published an even more sumptuous volume, clearly the result of years of study. This stupendous folio, lavishly illustrated by the authors, and dedicated to Ludwig I, King of Bavaria, as "the restorer of the Catholic arts of Europe," was entitled *The Costume of the Clans*.

Claiming Royal Blood

The Costume of the Clans is an extraordinary work. It cites the most arcane sources, Scottish and European, written and oral, manuscript and printed. It draws on art and archaeology as well as on literature. It is intelligent and critical. The authors admit the modern invention of the kilt. Nothing that they say can be immediately discounted. On the other hand, nothing can be taken on trust.

Elusive manuscripts cited in *The Costume of the Clans* include "a large copy of the original poems of Ossian and many other valuable Gaelic manuscripts" obtained from Douay by the late chevalier Watson but now, alas, invisible; a Latin manuscript of the 14th century found, with other manuscripts, in that Spanish monastery now so unfortunately dissolved; and, of course, the *Vestiarium Scoticum* itself, now firmly ascribed "on internal evidence" to the end of the 15th century.

The thesis of *The Costume of the Clans* is that Highland dress was the fossil relic of the universal dress of the Middle Ages. It had been replaced throughout the rest of Europe in the 16th century, but had survived, debased but still recognizable, in that forgotten corner of the world.

For in the Middle Ages (according to these authors), Celtic Scotland had been a flourishing part of cosmopolitan Catholic Europe, a rich, polished society in which the splendid courts of the tribal chiefs were nourished—thanks to the advanced Hebridean manufactures—by the luxuries and the enlightenment of the Continent. Unfortunately, that rich civilization had not lasted: By the close of the Middle Ages, those humming Hebridean looms, those brilliant island courts, that "high intellectual sophistication" of Mull, Islay, and Skye had declined; Highland society had become impoverished and introverted and its costume drab and mean.

Only the *Vestiarium*—that great discovery of the two broth-

ers—by revealing the brilliance of the original tartan setts, opened a narrow window onto that splendid culture now gone forever. For the authors professed no interest in the modern attempt to revive the costume alone, divorced from the Catholic Celtic culture of which it was a part. That was to convert it into mere fancy dress. The only true revival was one in which the whole past lived again—as it was lived by the Stuart brothers, writing poetry, hunting the deer, maintaining their own tribal court on an island in the Beauly River.

Unfortunately, *The Costume of the Clans* never received the criticism, or even the notice, of the learned world. Before that could happen, the authors made a grave tactical error. In 1846, they went as near as they would ever go toward explicitly claiming royal blood. They did this in a series of short stories, which, under romantic but transparent names, professed to reveal historical truth.

The work was entitled *Tales of a Century*, the century from 1745 to 1845. The burden of these tales was that the Stuart line was not extinct; that a legitimate son had been born to the wife of the Young Chevalier in Florence; that this infant, through fear of assassination by Hanoverian agents, had been entrusted to the care of an English admiral who had brought him up as his own son; and that, in due course, he had become the legitimate father of two sons who, having fought for Napoleon at Dresden, Leipzig, and Waterloo, and been personally decorated by him for bravery, had then retired to await their destiny in their ancestral country, and were now seeking to restore its ancient society, customs, costumes.

Creating Prosperity

At this point, a hidden enemy struck. In 1847, under the cloak of a belated review of the *Vestiarium*, an anonymous writer published in the *Quarterly Review* a devastating exposure of the royal claims of the two brothers. The elder brother attempted to reply. The reply was Olympian in tone, but weak in substance.

The household at Eilean Aigas, the romantic residence lent to them by Lord Lovat, suddenly broke up; and for the next 20 years, the two brothers maintained abroad, in Prague and Pressburg, the royal pretensions that had been fatally damaged at home. In the same year, Queen Victoria bought Balmoral, and the real Hanoverian court replaced the vanished, illusory Jacobite court in the Highlands of Scotland.

The Sobieski Stuarts never recovered from the exposure of

1847. But their work was not wasted. The *Vestiarium* might be discredited, *The Costume of the Clans* ignored, but the spurious clan tartans devised by them were taken up, without their damaged names, by the Highland Society of London, and became the means of the continuing prosperity of the Scottish tartan industry. For the rest of the century, numerous books of clan tartans were regularly published. All of them were heavily dependent—directly or indirectly—on the *Vestiarium*.

This essay began with reference to James Macpherson. It ends with the Sobieski Stuarts. Both imagined a golden age in the past of the Celtic Highlands. Both created literary ghosts, forged texts, and falsified history in support of their theories.

But Macpherson was a sensual bully whose aim, whether in literature or in politics, was wealth and power, and he pursued that aim with ruthless determination and ultimate success. The Sobieski Stuarts were amiable, scholarly men who won converts by their transpicuous innocence; they were *fantaisistes* rather than forgers. They were genuine in the sense that they lived their own fantasies.

Unlike Macpherson, they died poor. The wealth that they generated went to the manufacturers of the differentiated clan tartans now worn, with tribal enthusiasm, by Scots and supposed Scots from Houston to Hong Kong.

THE BLACK MAN'S BURDEN

by Terence Ranger

The 1870s, 1880s, and 1890s were the time of a great flowering of invented tradition—ecclesiastical, educational, military, republican, monarchical—in Europe. They were also the years of the European rush into Africa. There were many and complex connections between the two processes. The concept of empire was central to the process of inventing tradition within Europe itself, but the Europeans' African empires came so late in the day that they demonstrate the effects, rather than the causes, of European invented tradition. Deployed in Africa, however, the new traditions took on a peculiar character, distinguishing them from both their European and Asian imperial forms.

In contrast to India, many parts of Africa became colonies of white settlement. This meant that the settlers had to define themselves as natural and undisputed masters of vast numbers of Africans. They drew upon the freshly minted European traditions both to define and to justify their roles, and also to provide models of subservience into which it was possible to draw Africans. In Africa, therefore, the whole apparatus of invented school and professional and regimental traditions became much more starkly a matter of command and control than it was within Europe itself.

In contrast to India once again, Africa did not offer its conquerors the framework of an indigenous imperial state nor existing centralized rituals of honor and degree. Ready connections between African and European systems of governance could be made only at the level of the monarchy. Africa possessed, so the colonizers thought, dozens of rudimentary kings. Hence, in Africa the British made an even greater use of the idea of imperial monarchy than they did within Britain or India. The "theology" of an omniscient, omnipotent, and omnipresent monarchy became almost the sole ingredient of imperial ideology as it was presented to Africans. For the Germans, the Kaiser stood as the dominant symbol of German rule. The French had the more difficult task of incorporating Africans into a republican tradition.

But serviceable as the monarchical ideology was to the British, it was not enough in itself to provide the theory or justify the structures of colonial governance. Since so few connections could be made between British and African political, social, and legal systems, British administrators set about inventing African traditions for Africans. Their own respect for

"tradition" disposed them to look with favor upon what they took to be traditional in Africa. They set about to codify and promulgate these traditions, thereby transforming flexible custom into hard prescription.

There were two very direct ways in which Europeans sought to make use of their invented traditions to transform and modernize African thought and conduct. One was the extension of training in a neotraditional context to some Africans, a concrete expression of the belief that certain Africans could become members of the governing class of colonial Africa after considerable exposure to British custom. The second—and more common—was an attempt to make use of what European invented traditions had to offer in terms of a redefined relationship between leader and led.

Crash Courses in French Glory

The best illustration of the first idea—that some Africans might be turned into governors by exposure to British neotradition—is perhaps King's College, Budo, the famous school in Uganda. As G. P. McGregor observes in *King's College, Budo* (1967), in Uganda, the missionaries aimed to impose a neotraditional, British-style secondary education on a British-style elementary education. They were always clear that their aim was "the adaptation of our English Public School method to the African scene." They succeeded to an extraordinary extent. King's College was built on the Coronation Hill of the Buganda kings, so that "both Coronation Services of this century have been held" in the college chapel; "though some of the traditional ceremonies were observed," the service "followed many of the features of the English coronation service. The English Public School house spirit [was] quickly established," and the Gandan members of Turkey House petitioned that its name be changed to Canada House so as to go with England House, South Africa House, and Australia House—Turkey seemed "distinctly unimperial." The school motto, again said to have been chosen at the request of the pupils, was a Gandan version of Cecil Rhodes's dying words, "So little done—so much to do."

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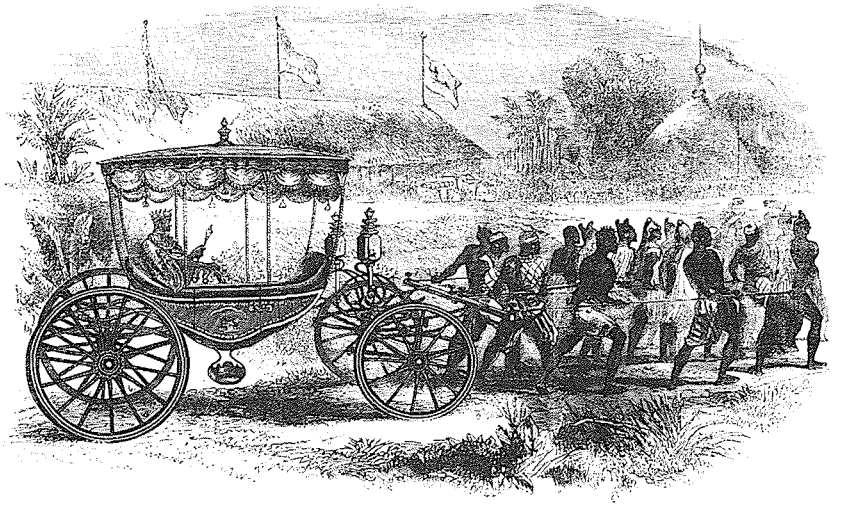


Gelele, the King of Dahomey, riding to a state ceremony during the 1860s in a carriage given to him by the British. The King also received a silk tent and a coat of mail with gauntlets.

McGregor quotes a letter written by a Ugandan pupil in the first year of the school's existence, which enables us to see this remarkable process of socialization through Gandan eyes. "First in the mornings when we have got up we arrange properly our beds. If you do not arrange it properly there is judgement or rebuke when the Europeans make a visit. . . . We sing one hymn and pray and then we learn English. . . . When we come out at four, we go and play football, on one side eleven and on the other side eleven, and we arrange every man in his place, goal-keeper and back men and ba-half-back and ba-forward."

There is no doubt that the missionaries created at Budo a successful complex of new traditions that paralleled the increasing ceremonialism of the role of the kabaka and the other Ugandan kings, thus achieving a synthesis similar to that accomplished in 19th-century England. The Golden Jubilee ceremonies of the college—"We had four Kings at the high table"—were also a ritual expression of the commitment of a large section of the Gandan ruling class to these by now hallowed invented traditions.

But the Budo experiment was not to become a general model: The British themselves came to regret their original alliance with the Ganda chiefs and to believe that real modernizing change could not be brought about through their agency. Real

change would be the product of European commanders loyally supported by African subordinates.

Various traditions of subordination were available. One was the traditional hierarchy of the great-house. Few whites in Africa, however, maintained domestic establishments of a size that would have allowed the full "traditional" panoply of the British servant hierarchy. A more elaborate application of European neotraditions of subordination came with the restructuring of African armies. In Sylvanus Cookey's fascinating account of this process, the French emerge as the first and most imaginative manipulators of the military invented tradition, disbanding demoralized pressed levies during the 1850s and attracting African volunteers with "séduisant" uniforms, modern arms, Koranic oaths of allegiance and crash courses in the military glory of the French tradition.

The British were slower to follow such a policy. But in the face of the French threat, they also moved to regularize their African regiments. Lord Frederick Lugard devoted his meticulous passion for detail to the transformation of his Nigerian levies from a "rabble" to a disciplined and effective fighting force. Soon he came to esteem them highly; official praise was lavished on them for their conduct in campaigns in the Gold Coast and northern Nigeria.

The Socialization of Idi Amin

This kind of admittance of Africans into the European military tradition had both the same ambiguities and the same degree of success as did the operation of the spirit of Budo. Sometimes the two forms of socialization came together, as in the case of Kabaka Edward Mutesa. Mutesa became Kabaka while still a schoolboy at Budo and remained there to complete his studies; his coronation was solemnized in the school chapel; he led the procession celebrating Queen Victoria's Golden Jubilee. But he was also admitted into the regimental tradition of the British Army, joining the Officers' Corps at Cambridge and later becoming a captain in the Grenadier Guards.

The acceptance of Mutesa into the officer ranks was, however, a rare exception. Much more common was the production of men like Mutesa's successor Idi Amin as president of Uganda. In his *Soldiers and Kinsmen in Uganda* (1975), Ali A. Mazrui argues that the rise of Amin and his "lumpen-militariat" can be seen as a revival of pre-colonial military traditions, in abeyance since the colonial conquest. But in fact, Amin's career provides us with an excellent example of socialization through the colo-

nial army. As Mazrui tells us, when Amin was recruited into the King's African Rifles in 1946, he showed "all the signs of colonial conditioning into dependency. . . . Within seven years, he was promoted to lance corporal and was displaying the qualities which so endeared him to his British superiors—instant obedience, fierce regimental pride, reverence toward Britain and the British, a uniform which crackled with razor sharp starched creases and boots with toe-caps like black mirrors."

Black mirrors of English privates and noncommissioned officers were precisely what African soldiers were intended to be.

Hail to the Kaiser

Admission of Africans into what were intended as replicas of the neotraditions of Britain did not end with schools like Budo or with recruitment into the army. Bishop Frank Weston's hypothetical African Christian in search of "brotherhood" might, if he were very fortunate, "conceivably learn to be a typist," and many mission-educated Africans were taken into the lower ranks of the bureaucratic hierarchy. African clerks came to value the rubber stamp and the row of pens in the breast pocket; African dance societies made use of purloined rubber stamps to authenticate their correspondence with one another and danced in full bureaucratic, as well as military, array. And of course, the African Christians, who were taken up as clergy into the imperfect brotherhood of the Christian churches themselves, were trained to perform the invented and reinvented rituals of 19th-century European ecclesiology.

Colonial governments in Africa did not wish to rule by a constant exercise of military force and they needed a range of collaborators that extended beyond those Africans who were brought into the neotraditions of subordination. In particular, they needed to collaborate with chiefs, headmen, and elders in the rural areas. This collaboration was, in essence, a very practical affair of exchanged benefits. But the colonial rulers felt the need for a shared ideology of empire that could embrace whites and blacks alike, dignify the practicalities of collaboration, and justify white rule. The British and the Germans found this in the concept of imperial monarchy.

In German East Africa, the notion of the monarchy had two aspects. On the one hand, the Germans believed that Africans themselves had a rudimentary idea of kingship. Especially in the first stages of interaction with African rulers, they were prepared to play up to African assertions of kingliness and to decorate Africans with some of the stage props of 19th-century

TRADITION IN THE NEW WORLD

European traditions, invented or not, never caught on in America as they did in Africa. Indeed, the Founding Fathers considered their colonial past under the English an impediment to the future. As Thomas Jefferson noted in a letter to James Madison in 1789, "The earth belongs in usufruct to the living. . . . The dead have neither powers nor rights over it."

The robust, egalitarian principles of the new republic went against the established, hierarchical ways of the Old World thrones. George Washington, importuned by many to become "king" of America, rejected the trappings of monarchy. His Presidency opened with a simple oath of office and a short speech at the corner of Broad and Wall Streets in New York City on April 30, 1789. Despite attempts at embellishment by later presidents, the simplicity remains. At his inauguration in 1976, Jimmy Carter wore a blue business suit instead of the morning coat worn by John F. Kennedy in 1960 and (to the delight of the TV networks) walked down Pennsylvania Avenue hand-in-hand with his wife to the White House.

The constant shift in population and westward expansion of 18th- and 19th-century America hindered the development of "native" traditions. But some religious, ethnic, and regional observances of custom did flourish. One of the earliest and most popular (especially along the Eastern seaboard) was Thanksgiving, originated in 1621 by Governor William Bradford of the Massachusetts Bay Colony, who ordered turkeys roasted to celebrate a bountiful harvest. In 1863, in the middle of the Civil War, President Abraham Lincoln officially set aside the fourth Thursday of November "as a day of thanksgiving and praise to our beneficent Father who dwelleth in the heavens."

Many Christmas traditions, including the exchange of gifts, caroling, and decorated fir trees, arrived in America with Dutch and German immigrants during the 17th and 18th centuries and were quickly adopted. Santa Claus was homegrown. Dr. Clement Moore based the "right jolly old elf" in "A Visit from St. Nicholas" (1823) on his handyman and borrowed Washington Irving's idea of a reindeer sleigh that flew through the air. In an 1863 issue of *Harper's Illustrated Weekly*, illustrator Thomas Nast added the final touch—the red, fur-trimmed coat worn by modern department store Santas.

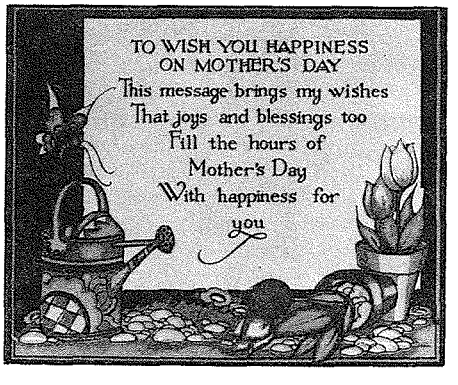
As Americans moved further away in time from the revolutionary era, their distrust of *nationalistic* rituals waned. Alexis de Tocqueville's 1835 observation that "there are no traditions, or common habits, to forge links between [Americans]" became less and less true. The placing of flowers on the graves of soldiers on Memorial Day (originally on May 30) was begun three years after the Civil War by General John A. Logan. Special ceremonies were held in the National Cemetery in Arlington, Virginia, marking the first formal observance of the day, an ob-

servance that continues today with little change.

During the 1890s, the divisive effects of labor unrest, economic depression, and renewed immigration made many Americans yearn for common national bonds. The Sons of the American Revolution, founded in 1889, and the Daughters of the American Revolution and the Colonial Dames of America, both founded the following year, together helped institute such practices as reciting the Pledge of Allegiance (first done by Boston schoolchildren in 1892) and the flying of U.S. flags over public buildings. These "American" rituals aided the assimilation of the more than 18 million immigrants who arrived between 1880 and 1920.

In many cases, merchants exploited and abetted the new receptivity of Americans to the creation of traditions. Stirred by the success of Christmas cards (first marketed in America by Marcus Ward and Company in the 1870s), greeting card manufacturers endorsed schoolteacher Anna M. Jarvis's campaign to designate the second Sunday in May as Mother's Day; florists promoted the designation of the carnation as the official Mother's Day flower. On May 9, 1914, President Woodrow Wilson gave federal approval by signing a joint congressional resolution lauding mothers (who still lacked the vote) as "the greatest source of the country's strength and inspiration." But even with commercial and federal encouragement, other rituals—such as the observance of Father's Day (the third Sunday in June) and Grandparent's Day (the first Sunday in September)—have yet to catch on.

The armed services, notably the Marine Corps, have been the one consistent exception to the relative indifference of Americans to the preservation of traditions. Officers in the Corps (established in 1775) have worn dress trousers with distinctive scarlet stripes since 1798 and carried the Mameluke Sword since 1805. The Navy, following British custom, still "pipes aboard" senior officers and lines the rails in salute to the Commander-in-Chief.

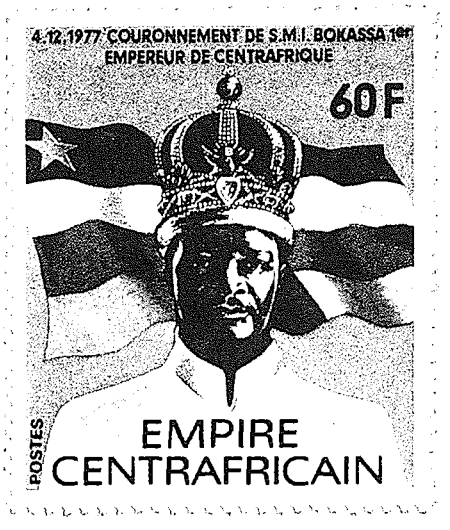


The pageantry surrounding the nationwide 1976 Bicentennial suggests that Americans have not lost a yen for parades. But they draw the line at pomp: When President Nixon ordered fancy new uniforms with gold braid, gold buttons, and plastic shakos for the White House police in 1970, widespread ridicule in Congress and the press soon forced him to shelve the new attire.

European ceremonial drama. Thus, a German officer reported to the Kaiser in 1890 that he had presented gifts from the emperor to Chief Rindi of the Chagga: "While the soldiers presented arms, I . . . encircled his shoulders with the coronation cloak . . . from the Berlin Opera House and placed on his head the helmet under which Niemann once sang Lohengrin." On the other hand, the Germans believed that African ideas of personal rule by a monarch could be infinitely enlarged so that the figure of an all-powerful Kaiser could come to personify German imperial authority.

The British King had nothing like the very real executive power of the German Kaiser, and he was spoken of more in mystical than in practical terms. J. E. Hine, bishop of Northern Rhodesia, found the coronation of King George V "a great ceremonial act of religion. . . . It was no mere piece of medieval pageantry. . . . It was symbolism of the utmost splendour, but there was reality behind it all."

In Northern Rhodesia itself, the acting administrator summoned all the Ngoni chiefs and their people to a Coronation Day fete: The "native police" band played; the Anglican "representative robed and said the special prayer chosen for the occasion, standing near the saluting flag." An enraptured missionary reported on the celebrations of that evening: "In the valley were four huge bonfires, around which some hundreds of dusky natives capered and danced. Some had bells on their feet, and almost all carried knobkerries. . . . The Europeans, sheltered by a grass



Jean Bedel Bokassa became President of the Central African Republic following a coup in 1966. After the discovery of local uranium and oil deposits, Colonel Bokassa declared his nation an empire and spent $22 million on his 1977 coronation as Bokassa I.

screen, sat in a semicircle, and between them and the fire danced the inhabitants of the soil. . . . Then the police band came forward and in the dying flames regaled us with 'The March of the Men of Harlech,' 'Onward Christian Soldiers,' and other tunes."

Secular administrators presented to African audiences a King who was almost divine—omnipotent, omniscient, and omnipresent. A series of official speeches to the Sotho, for example, stressed the royal knowledge of their situation, the royal concern for their well-being, and the royal responsibility for decisions that, in reality, had been taken by the cabinet. In 1910, Prince Arthur of Connaught told the Sotho Paramount Chief that the new King George V "remembers the representations you made to His late Majesty, King Edward," and that he knew "that, if and when, He decides that the time has come for Basutoland to be included in the South African Union you will loyally obey His decision."

Tea Parties for Lewanika

When the King addressed the Sotho directly—as in the Royal Message of 1910—British colonial officials put into his mouth words of a high patriarchal tone: "When a child is in trouble, he will go to his father, and his father after hearing all about the matter will decide what must be done. Then the child must trust and obey his father, for he is but one of a large family and his father has had great experience in settling the troubles of his older children and is able to judge what is best not only for the young child but for the peace and advantage of the whole family."

To give credibility to these claims, colonial administrators regarded the ceremonial side of the British monarchy as crucially important. When, in 1919, the Paramount Chief of Basutoland petitioned for permission to visit the Vatican as well as Buckingham Palace on his journey to Europe, the high commissioner feared that he "might be unduly impressed by the pomp and state of reception at the Vatican and might form the conclusion that the pope was more important than the King!" Permission was refused.

Not surprisingly, "tribal" African rulers found themselves contesting for the visible attributes of monarchy because their status came into question. In the early days, colonial administrators were happy enough to recognize African rulers as kings, and to present them, like Rindi, with the properties of stage monarchy. But as the colonial regimes established themselves and became less dependent on concessions extracted from African rulers, so there began a process of deflation. Thus, much of the British South Africa Company administration's claim to northwestern Rhodesia depended

upon the concessions it had gained from Lewanika of Barotseland. Lewanika was described as a great King and rewarded with access to the glamour of the British crown.

The symbolic climax of Lewanika's career came with his invitation to attend the coronation of Edward VII in 1902. Lewanika was received with honor by English high society. According to historian Brian Willan, "He had royal carriages put at his disposal, his horses were taken out of his carriage in a Dorset village so that village people could drag the carriage, he was taught to play simple games at tea parties by people like the Duchess of Abercorn." He was encouraged to acquire for his use both in England and back home some of the symbols of British royal ceremonialism—a royal coach, the uniform of a full-dress admiral, scarlet coats for his servants at Lealui. "When Kings are seated together," proclaimed the old Lozi ruler, "there is never a lack of things to discuss."

But soon the old man was being denied his kingliness altogether. As the North Rhodesian administration came to feel more secure, it cut back Lewanika's powers, rebuffed his protestations, and dramatized this withdrawal of favor through a double manipulation of royal symbolism. It was laid down that the high commissioner and the administrator must be greeted with the Lozi royal salute; it was also laid down that Lewanika himself should no longer be referred to as "King," since this elevated him above the other chiefs and drew what was considered to be an altogether inappropriate analogy with the imperial monarch. A similar pattern is apparent in the Ankole kingdom in Uganda. There was an initial period of colonial support for the Ankole monarchy, followed by a reaction in which, as M. R. Doornbos notes in *Regalia Galore* (1975), "officers at work in the country disliked the title of King being used for the rulers of small African states."

Beyond Victoria Falls

Nevertheless, African "paramounts" still strove to gain the title of king, to obtain invitations to British coronations in faraway London, to dramatize their internal authority with crowns and thrones, British-style coronations and jubilees. The Omugabe of Ankole managed to acquire a throne and a coat of arms and a crown. Lewanika's successor, Yeta, worked indefatigably to proclaim special royal status. He had certain advantages. Whenever a royal personage visited Northern Rhodesia, the local administration looked fairly desperately around for something other than the Victoria Falls to show him. They always had to fall back on the Lozi. Reviewing the ceremonial possibilities for the Prince of Wales's visit in 1925, the British governor

Boy Scouts from the Nyadiri School in Southern Rhodesia during the 1930s. Founded in 1908 by Lt. Gen. Robert Baden-Powell in Great Britain, the Scout movement soon spread to the rest of the empire.

complained that "generally speaking, none of these Chiefs are likely to look very impressive," but consoled himself with the thought that the Lozi "aquatic display" was likely to be "a fairly picturesque affair as native ceremonies go."

Those African rulers who *did* succeed in acquiring some of the trappings of neotraditional monarchy were caught up in an ironic process. What was involved, as Doornbos notes, was a transformation from flexible and adaptable customary monarchical institutions to a colonial monarchy "fitted into the bureaucratic structure and in time adorned with a thick overlay of new ceremonialism." The essence of the change in Ankole was to turn the Omugabe "into an instrument of bureaucratic hierarchy and to relegate the traditional values to the level of folklore." Aspirations to become more like the king/emperor ended in African rulers *really* becoming more like him, as they came more and more to occupy the ceremonial center, rather than the political or cultural center, of their societies.

It was a process neatly summed up by the title of Doornbos's book, *Regalia Galore*. But unlike the ceremonial of the king/emperor, which still serves a function in shrunken, post-imperial Britain, the ceremonial of African kings ultimately failed to mirror anything very important. The Ankole kingship was abolished without a ripple of dissent, and the local press headlined the

transition to a more openly bureaucratic symbol of authority—"The Throne Replaced by Chairman's Seat."

But it was not only African rulers and clergymen who tried to manipulate the symbols of European invented tradition. They were also seized upon by thousands of others who were experiencing the colonial economy, whether as migrant laborers or as petty clerks and functionaries. Both of these two groups sought to come to terms with the new colonial society, and they did so partly by means of participation in dance associations, which drew on various European invented traditions to express the essence of colonialism.

In his *Modern History of Tanganyika* (1979), John Iliffe has described the coastal dance associations in German East Africa just before the First World War. Dances were performed in the Kaiser's honor in 1911 by *ngoma ya kihuni*—the hooligans' dance association, a name defiantly chosen by "low-class, up-country immigrants." They danced the *Bom*, an imitation of German military drill, named after the sound of the machine gun. The dance associations of clerks and bureaucratic servants gathered in houses furnished in European style; they drank tea; "and at the end of the feast they said 'Hurrah' three times."

The Myth of Tribes

In the towns of the Kenyan coast, a similar class division produced competition between the Arinoti up-country migrants and the Marini Swahili youth. The Marini rejoiced in rich aristocratic patrons, and they triumphed over their plebeian opponents with processions headed by replicas of British governors and their equerries; with floats of battleships, with admirals in full dress taking the salute on the bridge; and on one glorious occasion, still much celebrated in the photograph albums of Lamu, with a stately line of peers of the House of Lords, all in full ceremonial dress.

Ironically, the most far-reaching inventions of tradition in colonial Africa took place when the Europeans believed themselves to be respecting age-old African custom. What were called customary law, customary land-rights, customary political structure, and so on, were in fact *all* invented by colonial administrators as these Europeans codified what they thought to be African tradition.

There is a growing anthropological and historical literature on this process, which it is not possible to summarize here. But the essentials are clear. For example, John Iliffe describes the "creation of tribes" in colonial Tanganyika: "The

notion of the tribe lay at the heart of [Imperial Germany's] indirect rule in Tanganyika. Refining the racial thinking common [at home, Kaiser Wilhelm's] administrators believed that every African belonged to a tribe, just as every European belonged to a nation. . . . Tribes were seen as cultural units 'possessing a common language, a single social system, and an established common law.' Their political and social systems rested on kinship. Tribal membership was hereditary. Different tribes were related genealogically."

This concept totally misrepresented the realities of African societies. Almost all recent studies of 19th-century, pre-colonial Africa have emphasized that, far from adopting a single "tribal" entity, most Africans moved in and out of multiple identities, defining themselves at one moment as a member of that cult, at another moment as part of this clan, and at yet another moment, as an initiate in that professional guild.

Similarly, 19th-century Africa was *not* characterized by lack of internal social and economic competition, by the unchallenged authority of the elders, by an acceptance of custom that gave every person—young and old, male and female—a place in society that was defined and protected. Marcia Wright has shown, for instance, in a stimulating account of late 19th-century society in the Lake Tanganyika corridor, that economic and political competition overrode the "customary securities" offered to women by marriage or extended kinship relations. Women constantly found themselves being shaken out of the niches in which they sought security. Later on, of course, and in the 20th century, the dogmas of customary security and fixed relationships grew up in these societies. But, as Wright remarks, the terms of this reconstruction "were dictated by the colonial authorities in the years after 1895, when pacification came to mean immobilization of populations, reinforcement of ethnicity and greater rigidity of social definition."

In the end, Africans were left with an ambiguous legacy from the colonial invention of tradition. After independence, those Africans who repudiated the British-style "elite" culture and regimental traditions imported from Europe faced the paradoxical danger of embracing another set of colonial inventions—dubbed "native African custom"—instead.

BACKGROUND BOOKS

TRADITIONS

Man has always been shaped to some degree by tradition, whether in his personal relations, his economic life, or his capacity as a political animal. As late as the 18th century in the West, most people still ordered their lives (as historian Marc Bloch wrote of medieval man) "on the assumption that the only title to permanence was that conferred by long usage. Life was ruled by tradition, by group custom." The intellectual upheavals of the Renaissance and Reformation, and the triumph of the Enlightenment two centuries later, helped to change all that.

"Ignorance, superstition, clerical dominance, religious intolerance, social hierarchy, [and] inequality in the distribution of wealth"—all of these, writes sociologist Edward Shils in **Tradition** (Univ. of Chicago, 1981, cloth & paper), were blamed by Voltaire, Diderot, and other Philosophes on blind adherence to custom.

In France, the leaders of the 1789 Revolution set out to break with the past and create a new, egalitarian social order. Powdered wigs were frowned upon. Townsmen were to greet one another as *citoyen* rather than *monsieur*. On playing cards, Liberty, Equality, and Fraternity replaced Kings, Queens, and Jacks. Crane Brinton chronicles these and other failed attempts to make over French society in **A Decade of Revolution: 1789–1799** (Harper, 1934, cloth; 1963, paper).

The Founding Fathers of the new United States of America did not go so far. But as historian Michael Kammen relates in his **A Season of Youth: The American Revolution and the Historical Imagination** (Knopf, 1978, cloth; 1980, rev. ed., paper), which traces evolving perceptions of the American Revolution, Americans did share the Gallic distrust of anything tainted by the ancien régime (in this case, the British version).

Yet in America, as in France, the vacuum created by the rejection of one set of traditions was eventually filled by another. "Authority once achieved must have a stable and usable past." That is the conclusion of historian J. H. Plumb, who reflects on the use and misuse of history in **The Death of the Past** (Houghton, 1971, cloth; Penguin, 1973, paper).

Between 1870 and 1914, industrialization, expanded suffrage, and the emergence of new nation-states prompted all of the great powers to experiment with what the University of London's Eric Hobsbawm has described as "the use of ancient materials" to devise "novel traditions."

In Britain, the late 19th century saw a popular revival, abetted by church and state, of supposed "chivalric" values. As architectural historian Mark Girouard observes in **The Return to Camelot: Chivalry and the English Gentleman** (Yale, 1981), "organizers" of every stripe combed the medieval past for rituals and credos pertinent to new groups such as the Boy Scouts. Chapter 7 of Lord Baden-Powell's *Scouting for Boys* was entitled "The Chivalry of the Knights" and aimed at imbuing working-class boys with "the code of the Victorian gentleman."

Across the North Sea, in a newly united Germany, Chancellor Otto von Bismarck and Kaiser Wilhelm I sought to provide a popular focus for the Second German Empire. As George L. Mosse notes in **The Nationalization of the Masses** (Fertig, 1975, cloth; New American Library, 1977, paper), a study of political symbolism

in Germany, "Festivals, gestures, and forms had to be created which, in turn, would themselves become traditional." Every year, German schoolchildren commemorated the fatherland's victory in the Franco-Prussian war (1870–71) by singing the "Wacht am Rhein" ("The Watch on the Rhine") and planting "imperial" oak trees—the oak having been revered by ancient Germanic tribes for its magical powers.

As modernization gained momentum throughout the Continent, traditional folk culture slowly vanished. In **Peasants into Frenchmen** (Stanford, 1976, cloth & paper), a portrait of rural France during the half century before World War I, historian Eugen Weber shows how dance festivals, charivaris, and other rural celebrations—decried by government authorities as sources "of moral laxity, superstition, and heathenish debauchery"—were supplanted by officially sanctioned events such as Bastille Day.

Some countries proved more adept than others at integrating old and new. In **Tradition and Modernization in Japanese Culture** (Princeton, 1971, cloth & paper), a collection of essays covering the Meiji era (1868–1912), historian Donald H. Shively and others describe how a "nativist reaction" halted the wave of Westernization that threatened to engulf Japanese culture. Japan's leaders labored, says Shively, to "stress the merits of Japan's past" and to resist unnecessary innovations.

Beisubaru (baseball) swept the country, but fancy dress balls never displaced the tea ceremony, and by the end of the 19th century, the old concept of ancestor worship was successfully incorporated into the structure of a modern government, led by a figurehead emperor.

Joseph Stalin faced a problem of a different sort. In **The Rites of Rulers** (Cambridge, 1981, cloth & paper), Christel Lane notes that the new Communist regime in Moscow during the 1920s not only had to confront "the necessity of immediate radical social and political transformation" but was also committed to "achieving an ideal end-state, a secular millenium." To help rally his countrymen, Stalin contrived the "cult of personality," building one first around the person of V. I. Lenin (a cult that has persisted) and then around himself (a cult that has not).

Yet, as the experience of the Soviet Union, France, the United States, and other countries has shown, the past cannot be shed like a reptile's skin. Despite continued Soviet attempts to secularize the burial rite, the ancient religious custom of throwing dirt onto the coffin as it is lowered into the ground has been preserved in popular practice.

At its best, tradition satisfies a fundamental human yearning for continuity and stability, for a bit of ballast. "The idea of inheritance furnishes a sure principle of conservation and a sure principle of transmission," Edmund Burke stated in 1790 as he reflected on the upheavals in France. "People will never look forward to posterity who never look backward to their ancestors."

EDITOR'S NOTE: *Several of these titles were suggested by Michael Kammen, professor of history at Cornell University.*

CURRENT BOOKS

FELLOWS' CHOICE

Recent titles selected and reviewed by Fellows of the Wilson Center

THE GREAT CAT MASSACRE AND OTHER EPISODES IN FRENCH CULTURAL HISTORY
by Robert Darnton
Basic, 1984
298 pp. $17.95

Historians of the French *Annales* school, many of them affiliated with the political Left, have shifted the focus of studies in 18th-century French history from the cataclysmic events of the Revolution (1789–99) to the more enduring folkways and institutions of the Old Regime that preceded it.

Robert Darnton is one of the growing number of American historians influenced by the *Annalistes*. His *Literary Underground of the Old Regime* (1981) concentrated on the hacks, printers, and booksellers of France's 18th-century Grub Street. Earlier, his *Business of Enlightenment: A Publishing History of the* Encyclopédie, *1775–1800* (1979) described the commercial sale and distribution of the quarto edition of Denis Diderot's monumental publication, exposing the cutthroat competition and unscrupulous double-dealing behind its promotion. Like the *Annalistes*, who show more interest in peasants and vagabonds than in courtiers and ministers of state, Darnton deals more with culture-peddlers than with the intellectual luminaries and Philosophes such as Jean-Jacques Rousseau and Voltaire.

Since 1978, Darnton has been regularly teaching courses on popular culture with his Princeton colleague, anthropologist Clifford Geertz. This book, partly the product of that collaboration, reflects a broad anthropological concern with questions of popular attitudes, or, as the French would say, *mentalités*. Its six essays range widely about the world of 18th-century France, from the meaning of Mother Goose stories to French peasants, to readers' reactions to Rousseau, to the bizarre cat massacre mentioned in the title. Each chapter draws heavily on one previously unexploited documentary source—a file, for instance, kept by a mid–18th-century royal police inspector whose job was to keep an eye on intellectuals.

While the book manages to touch on all social classes, beginning with peasants and ending with Rousseau's elite readers, Darnton's goal is not to create the sort of global history written by such *Annaliste* historians as Fernand Braudel. He chooses, rather, the "thick description" of specific events or close analysis of single texts and, from these, extracts broader social and psychological meanings.

Relating the story of the "riotous massacre of cats" in a Paris printing shop during the late 1730s, Darnton explains how and why a group of workers carried out a cruelly ingenious act of revenge against their abusive masters. Imitating howling cats all night long, the workers convinced their employer and his wife that the neighborhood cats, including their own beloved pets, were bewitched. Alarmed, the master ordered his work-

ers to kill the animals. This they did, staging mock trials and executions. Killing the cats, although ordered by the master, was the workers' way of striking back. Darnton then proceeds to examine the general deterioration of working conditions in the French printing industry and explores the circumstances in which cats had been mistreated in various rituals since the 14th and 15th centuries ("witchcraft, orgy, cuckoldry, charivari, and massacre"), all expressing a deep, sadistic "current of popular culture." Darnton concludes that the cat executions, far from being "a dress rehearsal for the September Massacres of the French Revolution," were simply a ritualistic form of popular rebellion.

Darnton's method makes for colorful history, but even he recognizes its shortcoming. "Is there not," he asks, "something arbitrary in the selection of such material and something abusive in drawing general conclusions from it?" He is not alone in feeling some disquietude with his narrow picture of Old Regime society, where rakes, swindlers, restive workers, minor writers on the make, and women swooning under the influence of Rousseauian sentiment tend to crowd out their more plain and honest countrymen.

The moral world of Darnton's Old Regime is perhaps too uniformly one of advantage, self-interest, domination, and envy. In the Mother Goose tales that he claims were the favorites of French peasants, he finds a consistent message: "The world is made of fools and knaves, they say: better to be a knave than a fool." But how does this sweeping conclusion square with the moralistic romances and devotional chapbooks peddled throughout France in the 17th and 18th centuries and read at the same evening fireside gatherings where the the fairy tales were read? Has Darnton made an unbalanced selection of his Mother Goose tales, resulting in an overly one-dimensional picture of peasant mentality?

Finally, there is a problem with the anthropological approach, which assumes little or no constancy of human nature over time. When Darnton writes about 18th-century peasants, he seems almost to be writing about another species. Implicit in this approach is a belief that progress and enlightenment have since fundamentally separated *them* from *us*. A tone of condescension inevitably creeps in, and anthropology, which supposedly aims at eliminating the presumptions of cultural superiority, becomes a new means of portraying a moral and intellectual gulf between the traditional and modern worlds, a gulf which may not, in fact, be as wide as Darnton would have us believe.

—Robert Emmet Kennedy, Jr.

WHAT DO UNIONS DO?
by Richard B. Freeman
and James L. Medoff
Basic, 1984
350 pp. $19.95

Almost 100 years ago, in 1889, a news story from Pittsburgh caught the public's eye. Some unionized steelworkers, it was reported, made so much money that they were coming to work in horse-drawn carriages. The very idea of pampered workers in the Gilded Age repelled many middle-class Americans, and there was widespread applause when Andrew Carnegie crushed the Amalgamated Association of Iron, Steel, and Tin Workers in the Homestead strike of 1892. After the strike, wages for most steelworkers plummeted to under two dollars a day and remained extremely low through the Great Depression.

Today, the industrial unions that arose in the United States during the 1930s are under similar attack for cutting business productivity through excessive wages and restrictive work practices. As was the case 100 years ago, the evidence cited is almost always anecdotal. The effect has been to cloud the merits of unionism and to bring Big Labor stereotypes to the fore.

To get beyond the generalities, Harvard economists Freeman and Medoff compiled a vast data base documenting the performances of thousands of businesses during the 1970s and early 1980s. Their statistics permit a comparison of the *actual* performances of union and nonunion firms within several different industries—everything from furniture and textiles to chemicals and construction. Their conclusion: Unions help boost productivity, reduce labor turnover, and promote wage-scale equality for workers, but these benefits *do* come at a cost.

The authors' findings concerning productivity, in particular, run counter to popular assumptions. With the amount of capital per worker and other factors held constant, unionized companies show higher rates of productivity (as much as 30 percent in some heavy construction companies) than nonunion companies in the same sector. Moreover, there appear to be no statistically significant differences in the *growth* of productivity between union and nonunion firms in the same industry. Unionized firms tend to be more efficient, say the authors, because they have better trained workers and lower turnover.

A crucial added benefit is the role of union grievance procedures, negotiations, and arbitrations in producing more attentive management. The authors repeatedly underscore the importance of management in labor relations: Where union-management relations are good, such as in the construction and cement industries, productivity rises; in industries characterized by strife, such as in coal mining during the 1970s, productivity drops noticeably.

What about the costs? Although unionized firms tend to have better, more reliable workers and lower turnover rates than nonunion companies, these efficiencies do not generally surmount the higher costs of union contracts, "on the order," say the authors, "of 20 to 25 percent." Overall, unions reduce profitability: A 1982 study of 902 individual firms shows that profits average 16 percent lower in unionized firms. The discrepancy

is lowest in industries where competition is keen, highest in concentrated sectors of the U.S. economy such as steel.

While this finding lends credence to the complaints of auto, steel, and other manufacturers, the authors point out that such industries traditionally have lower rates of return. They also suggest that unions actually *improve* efficiency in monopoly-sector companies, which otherwise would have few market incentives to innovate.

This conclusion will no doubt be debated. So will the book's other claims that unionism promotes wage equality and brings representative democracy to the workplace. But such debates should be welcomed. As the authors note, unions have far too long been depicted as either villains or heroes rather than as the complex institutions that they are.

—Mark Reutter

THE EMERGENCE OF AFRICAN CAPITALISM
by John Iliffe
Univ. of Minn., 1983
113 pp. $29.50 cloth, $10.95 paper

American, European, and African scholars have radically revised their view of African history three times in the past quarter century. John Iliffe, a Cambridge historian, was a leader in the first revisionist swing two decades ago. But Iliffe did not stand still. Here, in this illuminating portrait of the sources of African capitalism, he proves himself to be one of the major contributors to the third shift.

Until the late 1950s, African history as written in the West was primarily the chronicle of European activity on the continent. African economic and social organization was considered to be almost too primitive to merit scholarly consideration. The first revisionist swing altered the picture: African resistance to the "predatory" European colonial intrusion became the focus of the historical drama. Iliffe was prominent among those scholars who led the way in this radical and nationalist reinterpretation.

The second shift, which followed quickly, was an attempt to explain the lackluster economic and political performances of many newly independent African states under nationalist leadership, including Ghana, Mali, and Guinea. Scholars borrowed from Latin American studies the well-worn notion of "dependency," and once again assigned Africans and their institutions a passive role—this time as pawns in an elaborate international system of capitalist exploitation.

The manifest exaggerations of the dependency theory have recently prompted a third interpretation by scholars, one which places renewed emphasis on the internal causes of change. A crucial issue separating the most recent revisionists from the dependency folk is the question of the origins of capitalist forms of production in Africa. According to the dependency theory, capitalism was imposed from the outside, a pathetically deformed and peripheral version of advanced industrial economies. To Iliffe and others, this explanation overlooks some crucial dimensions of the autonomous development of capitalism in Africa.

African forms of entrepreneurship, Iliffe argues, cannot be dismissed as the parasitical ventures of a comprador bourgeoisie—an African commercial class working, in effect, as agents of multinational corporations. Iliffe briefly sketches some of Africa's homegrown enterprises: commercial agriculture, such as Ghana's cocoa plantations and Uganda's coffee farms, both created by local initiative; long-distance trade, particularly of kola nuts, gold, and gems in inner West Africa; artisanal production of such goods as textiles and dyes in northern Nigeria; and even the industrial manufacture of a wide range of light consumer commodities in several countries. He also explains how cultural forces, such as religion, have played a major role in the development of an indigenous economy: The Islamic culture of the West African savanna, for instance, has long provided a code of shared law, values, and honor—a code that helped foster trade and cooperation even in the absence of political unity in late pre-colonial times.

Iliffe notes what is perhaps the most distinctive feature of early African capitalism: the virtual inseparability of the "firm" and the individual entrepreneur and his family. Such a personal form of business is not without its limitations. Plural marriages and large households result in the distribution of the "capitalist's" wealth among many heirs—an obvious constraint on capital accumulation over time. But the family firm has certain advantages. The exchange of family members through marriage can serve as a guarantee of contract; family clients can be a useful asset; multiple wives enlarge the pool of household labor available for commercial agricultural production.

The backing of national governments could help make these small-scale ventures even more productive, thinks Iliffe. But the African state has usually been more a hindrance than a help. Colonial administrators often systematically impeded indigenous enterprise by favoring businesses run by Europeans, Indians, and other immigrants. And a number of post-colonial "socialist" regimes, including Kwame Nkrumah's Ghana and Julius Nyerere's Tanzania, have been hostile to domestic capitalism. It is, Iliffe believes, a misplaced antipathy: "African governments have shown that they can prevent capitalism; they have not yet shown that they can replace it with anything else that will release their peoples' energies."

—Crawford Young

NEW TITLES

History

MY DEAR PARENTS: The Civil War Seen by an English Union Soldier
by James Horrocks
Harcourt, 1983
188 pp. $13.95

Named in a paternity suit over a child he claimed was not his own, Horrocks, the author of these entertaining letters, fled his hometown of Farnworth, England, in 1863, hoping for a kinder fate in America, then torn by the Civil War. Enticed by a $288 bounty, he enlisted, at age 19, as a private in the New Jersey Volunteers under the Scottish pseudonym Andrew Ross. ("The English are very unpopular here, but the Scotch are a sort of go-between.") From 1863 to 1865, Horrocks sent regular bulletins home from Virginia, relating personal anecdotes about his fellow soldiers, describing battles and skirmishes around such places as Fortress Monroe and Richmond, and remarking upon the peculiar etiquette of war: "These pickets do not fire at each other. . . . It could not advance the cause or strategy of either side and consequently a kind of friendship is established. . . ." Complaining of the private's lot, and always scheming for promotion, Horrocks still found camp life generally comfortable. Like most of his fellow volunteers, Horrocks was indifferent to the Union cause and gave little thought to the issues of slavery and secession. (In fact, he wrote rather snidely about a black candidate for the "colored troops" who could not name the principal Russian seaport or distinguish between a right and obtuse angle.) But his constant optimism—possibly feigned to comfort his parents—and his foreigner's eye put the soldier's life during the Civil War in a distinctively fresh perspective.

CLARENDON AND THE ENGLISH REVOLUTION
by R. W. Harris
Stanford, 1983
456 pp. $39.50

According to T. S. Eliot, writing in 1947, "The [English] civil war of the 17th century . . . has never been concluded." Apparently, it still has not. *Clarendon and the English Revolution* is of particular value to American partisans in the hostilities. England's bitter revolution was in so many ways a prelude to America's that Yankees have long been disposed to take the side of the Englishmen who not only rebelled against but beheaded King Charles I.

Harris, a historian formerly of King's School, Canterbury, deplores the spirit of intolerance and violence that prevailed among the King's enemies. His biography of Henry Hyde (1609–1674), first earl of Clarendon and loyal supporter of the monarchy during England's experiment with republican government from 1649 to 1660, is a hymn to such royalist virtues as tradition, reason, moderation, and reconciliation. Clarendon sometimes vanishes in the fascinating welter of details about the battles between the House of Commons and Charles I, the execution of the King in 1649, and the triumphant return of Charles II in 1660. But toward the end of Harris's book, Clarendon comes more into his own. In 1667, he was exiled to France by Charles II, the "merry monarch" by then grown weary of his Chancellor's censorious counsel and in need of a scapegoat on whom to blame England's debacles in the Anglo-Dutch War. Clarendon, ever his sovereign's loyal servant, died in exile but not before completing his *History of the Rebellion and Civil Wars in England* (published 1702–04), on which, writes Harris, "in a sense this whole book has been in the nature of a commentary."

THE DEVELOPMENT OF THE FAMILY AND MARRIAGE IN EUROPE
by Jack Goody
Cambridge, 1983
308 pp. $39.50 cloth, $12.95 paper

Before the end of the fourth century A.D., Europe was not radically different from North Africa, Asia, or the Near East in its marital customs and domestic arrangements. Close marriage (the practice of marrying relatives) was common, even encouraged; a bachelor was obliged to marry his brother's widow; and adoption was routine. All of this began changing, says Goody, a Cambridge University anthropologist, as the Christian Church, under the aegis of Rome's converted Emperor Constantine (A.D. 280–337), shifted from being a loosely organized sect to a "property-holding corporation, capable of acquiring land by gift, by inheritance, or by purchase." Faced with growing responsibilities, including the care and feeding of its ecclesiastical ranks, the church began supporting a system of marital injunctions that would tend, over time, to make it harder for families to accu-

mulate or even to retain wealth and land. The object: to divert inheritances to the church. Bans against the marriage of cousins, such as that issued by the Emperor Theodosius I in 384–385, had little scriptural justification; indeed, Christ's earthly parents may have been cousins. Theologians were forced to plunder the Old Testament (e.g., Leviticus) to justify their regulations. Furthermore, adoption, a common practice under Roman law, virtually disappeared in Europe, as the church became the sole guardian of orphans. (In France, common law adoption was not reintroduced until 1892.) Goody traces the impact of the church's new interest in families, showing how it contributed to the rise of chivalry, romantic love, and new forms of kinship, including godparenthood. Goody's history is a provocative reminder of the plasticity of society's most cherished, and supposedly immutable, institutions.

Contemporary Affairs

THE RECONSTRUCTION OF PATRIOTISM: Education for Civic Consciousness
by Morris Janowitz
Chicago, 1983
220 pp. $22.50

For years dismissed by most intellectuals as the pride of fools and the refuge of scoundrels, patriotism is long overdue for serious scholarly contemplation in America. The conspicuous silence, argues Janowitz, a noted University of Chicago sociologist, is symptomatic of a general decline, since 1945, of this nation's civic spirit. According to current fashion, U.S. citizenship involves rights and entitlements, not duties and responsibilities. Janowitz surveys the decline of those institutions that once provided Americans with a strong civic education. The tradition of the "citizen-soldier," forged during the revolutionary war, instructed the citizen in the relationship between the state and the military and united him with a wide range of fellow countrymen in the nation's defense. Since World War II, the changing nature of warfare, rejection of conscription by Left and Right alike, and a general antimilitary mood have gradually eroded support for a citizen soldiery. Its death blow was delivered by President Richard Nixon in 1973, when he ended

the Selective Service System. Janowitz also charts the changing tenor of civic education in the public schools. During the 19th century, students were offered courses that gave a long-term historical sense of the American "experience." Since the Great Depression, a new breed of social studies teachers has begun focusing on specific current political and social conflicts, thus reinforcing a general trend toward ethnic and racial "fragmentation." Recalling Franklin D. Roosevelt's Civilian Conservation Corps (which, between 1933 and 1942, employed more than three million young adults), Janowitz urges the creation of similar programs of national service, perhaps even privately supported, to help restore a unifying sense of civic obligation—and health to the idea of patriotism.

THE POLITICS AT GOD'S FUNERAL: The Spiritual Crisis of Western Civilization
by Michael Harrington
Holt, 1983
308 pp. $16.95

With the disappearance of God from the modern world, an event proclaimed by many philosophers and theologians, "one of the prime motives for noncoerced obedience and acquiescence in the social order" has vanished. That conclusion, surprisingly, comes from one of America's best-known socialists, Michael Harrington (*The Other America*, 1962). Not surprisingly, however, he laments the demise of religious faith mainly for social, political, and economic reasons. Capitalism, for instance, no longer restrained by John Calvin's austere ethic, has become the "compulsory hedonism of unplanned and irresponsible economic growth." Values and moral responsibilities that once bound people together have given way to relativistic codes, all encouraging an unhealthy individualism. Theologians of the 1960s (e.g., Harvey Cox and Paul Tillich) who tried to "demythologize" God created a God too "problematic, subjective, [and] existential" to provide a moral center for individual Americans. And Harrington dismisses the new Protestant fundamentalists as "too secular" to inspire a broad religious reawakening. Religion, Harrington concludes, can no longer be the integrating force it once was in medieval Europe,

but something must fill the vacuum. He calls on religious and atheistic humanists to bury the hatchet and work together "to introduce moral dimensions into economic and social debate and decision."

Arts & Letters

ECCENTRIC TRAVELLERS: Excursions with Seven Extraordinary Figures from the Eighteenth and Nineteenth Centuries
by John Keay
Tarcher, 1983
216 pp. $12.95

English eccentrics seem to have a penchant for travel to out-of-the-way places. In our century, the renowned Alfred Thesiger sojourned so long in Arabia that he all but became a Bedouin; his *Arabian Sands* (1959) is a brilliant record of the experience. But the 18th and 19th centuries had their share of oddball British travelers—many of them gifted writers. Keay, a Scottish author, offers portraits of seven. James Holman, a Royal Navy officer who retired in 1810 at age 25 because of blindness, became what Keay calls "the travelling phenomenon of the age." In 1823, he set off on one of his bolder adventures—a 3,500-mile trek from Moscow to Irkutsk. Advised against making the arduous trip through desolate Siberia, particularly since it offered so little to see, Holman reasoned that the trip was a logical one for a blind man. In the life of William Gifford Palgrave, scholar, soldier, Jesuit, "eccentricity lay not in the manifestations of an extraordinary personality, but in the baffling diversity of alibis under which he concealed it." From 1846 until his death in 1888, he posed, variously, as a sheik in Damascus while attempting to convert Moslems to Christianity; as a priest in Egypt while filing reports for the French Foreign Ministry; and as an Arab physician in Gaza. Where his ultimate allegiance lay is hard to determine: Near death in Japan, he seemed to abandon his Catholic faith for Shintoism. All Keay's voyagers were unusually determined and courageous. Not content with merely *observing* animals, the naturalist Charles Waterton, much admired by his junior in the field, Charles Darwin, journeyed far and wide "to come to grips with them—literally." Traveling in Guyana in 1805 to collect specimens, he enlivened his days by wrestling

with alligators. Being at odds with their own society gave these eccentric globetrotters an advantage over their more inhibited countrymen: unfettered curiosity. All were, as Waterton put it, "well fitted out for adventure."

ONE WRITER'S BEGINNINGS
by Eudora Welty
Harvard, 1984
104 pp. $10

Born in Jackson, Mississippi, in 1909, Eudora Welty has, with an absolute indifference to self-promoting fanfare, established herself as one of America's foremost writers of short stories and novels, many of which deal with the power and mystery of family relations. Here, in the space of three lectures (originally delivered at Harvard University in 1983), she relates the story of her genesis as a writer. Along the way, Welty manages not only to evoke the book-filled world of her childhood (back when "the dark was dark") but also to describe the lasting influence of her parents. When she was a little girl, living in the house she inhabits to this day, her father, an insurance executive, a lover of clocks, telescopes, and gadgets, scored the soles of her shoes so that she would not slip on the hardwood floors. From him, the future writer acquired a lasting fascination with time, a keenness of observation, and the knowledge that one could never take enough precautions. From her mother, she learned, among other things, about secrets—that, specifically, "one secret is liable to be revealed in the place of another that is harder to tell, and the substitute secret when nakedly exposed is often the more appalling." (Her mother would not explain where babies came from but did tell her, in morbid detail, about the death, at his birth, of an older brother.) Looking, as she did over the years, at the affection between her parents, Welty became, as she puts it, a "loving kind" of observer. And what she looked and listened for most of all were stories—stories that came out of gossip, jokes, and fibs. "It took me a long time," she recalls, "to realize that these very same everyday lies . . . were in fact the basis of the *scenes* I so well loved to hear about and hoped for and treasured in the conversation of adults."

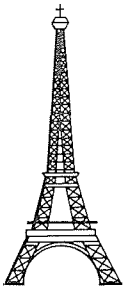
Science & Technology

INSIDE THE CRIMINAL MIND
by Stanton E. Samenow
Times Books, 1984
285 pp. $15.50

"To understand crime," writes Samenow, a Washington, D.C., clinical psychologist, "we must focus on personality, not laws and social mores." Samenow rejects the widespread notion that poverty, parental pressure, or other external causes have a significant role in the making of a criminal. Instead, he believes, the criminal *chooses* from earliest childhood to behave in antisocial and destructive ways. Rehabilitation fails, Samenow contends, because there is nothing positive in the criminal to restore. The only way to change him is to alter the way he thinks. Reviewing case histories of patients and prisoners, Samenow finds that the criminal sees himself as a victim and that his idea of going wrong is getting caught. To the felon, the law-abiding life not only seems dull but fails to reward personal effort quickly enough. Samenow's solution: intensive group therapy in which former convicts are required to produce daily "moral inventories" of ways they have chosen to redeem themselves. Unlike other therapists, Samenow strives to instill fear and guilt in his patients; otherwise, he believes, they will never develop any regard for other people. Samenow says his approach works: 13 out of 30 of his patients, once released, not only stayed out of jail but achieved productive, law-abiding lives. While this is not a radical improvement over the U.S. recidivism rate (roughly two-thirds of imprisoned felons are repeat offenders), it may be an encouraging start.

THE TOWER AND THE BRIDGE: The New Art of Structural Engineering
by David P. Billington
Basic, 1983
306 pp. $24.95

The Swiss architect Le Corbusier (1887–1965) once described structural engineers, with undisguised condescension, as mere technicians. He said that they lacked the aesthetic sense of the architect who, "by his arrangement of forms, realizes an order which is a pure creation of his spirit." This book by a Princeton professor of engineering is a learned and persuasive counterargument. Structures, Billington reminds us, *are* part of technology—the static half, complementing



machines, the dynamic half. Nevertheless, the best towers, trestles, roof vaults, and bridges put up over the past 200 years have reflected the aesthetic as well as the technical concerns of their builders. Looking at the representative works of such men as John Roebling (the Brooklyn Bridge), Alexandre-Gustave Eiffel (the Eiffel Tower), and Fazlur Khan (the John Hancock Center in Chicago), Billington identifies three consistent artistic principles realized in each: efficiency, economy, and elegance. Combining these elements, satisfying a functional need, and making the best of available materials are the true test of the structural engineer. The Eiffel Tower, Billington explains, with its iron legs sweeping up from a massive base to a pinnacle at the top, was a simple yet ideal structure for coping with high winds; the tower was also an elegant example of the latest technology. The Hancock Center, one of the world's tallest towers, is a simple tubular building whose exterior x-braces form its predominant visual feature; thanks to the bracing, the interior is free of columns, and moveable partitions permit flexible use of interior space. (The building was also cheap and easy to build.) Theologian Karl Barth's description of the challenge facing composers of classical music applies as well to the great structural engineers, writes Billington: For both, art requires the "manipulation of the most exacting rules [along with] invention in the expression not so much of what the composer himself found personally stimulating, but rather of general laws."

PAPERBOUNDS

THE OTHER SIDE OF THE RIVER. By Charles Wright. Random, 1984. 73 pp. $5.95

"What is it about a known landscape / that tends to undo us . . . ?" asks Wright in a poem entitled "Lonesome Pine Special." The poem is about roads the poet has traveled, mostly ones in the American South, and about the thoughts, memories, and desires evoked by vistas along these roads. The melancholy of remembering what is loved but cannot be possessed pervades most of the poems in this collection by the 1983 co-winner of the American Book Award. Words, for Wright, have power to conjure, but not to fix or stay the most sought after things. What use, then, is poetry? Wright, who teaches English at the University of Virginia, offers an answer: It frames moments in which the eternal can be glimpsed. Like the English romantic, William Wordsworth, Wright most often finds those moments in nature. "I want," he writes, in deceptively playful rhyme, "to sit by the bank of the river, / in the shade of the evergreen tree, / And look in the face of whatever, / the whatever that's waiting for me."

THE BIRTH CONTROL MOVEMENT AND AMERICAN SOCIETY: From Private Vice to Public Virtue. By James Reed. Princeton, 1984. 456 pp. $11.50

Nurse and crusader Margaret Sanger, gynecologist Dr. Robert Dickinson, and soap fortune heir Clarence Gamble had almost nothing in common—except their belief in the need for planned parenthood. All figure as major characters in this history of the birth control movement in America. Each, as Reed, a Rutgers historian, shows, had his or her own reasons for advocating contraception. Sanger's nursing experience in New York's slums during the 1910s showed her how multiple pregnancies and abortions wore down women's health. There was, she believed, no hope for women's economic progress without safe and effective contraception. Dickinson, one of the nation's first specialists in gynecology, held that control of fertility was essential to the stability and health of the family. In 1935, he persuaded the American Medical Association to recommend legal reforms to allow physicians to give advice on contraceptive methods. Gamble had yet other motives: to control world population and, more subtly, to promote eugenics. Reed's book is packed with revealing statistics (the average number of children per U.S. family declined from 7.04 in 1800 to 3.56 in 1900) and recounts instances of retrogression: Literature on contraception, widely published in the late 19th century, was ruled obscene under the Comstock Act in 1913—and remained so until 1971.

THE GENIUS OF ARAB CIVILIZATION: Source of Renaissance. Edited by John R. Hayes. MIT, 1983. 260 pp. $10

The 11 chapters of this book constitute a concise, authoritative encyclopedia of roughly eight centuries (circa A.D. 600–1400) of Arab achievements in literature, philosophy, music, trade and commerce, science, mechanical technology, and other fields. Each author excels in moving from the general to the specific. Arabic words, explains Mounah A. Khouri of Berkeley, are generally based on three basic consonants. From the root "KTB," for instance, dozens of words related to "writing" (e.g., *kitab*, book; *kitabah*, script) are made. The high degree of regularity in Arabic words lends itself, he continues, "to the creation of harmonious patterns, and a rich elaboration of rhyme and rhythm." Twenty-six short monographs on important Arabs—including mathematicians, philosophers, poets, and prominent merchants—are woven into this crisp anthology of little-known Arab accomplishments.

The Cooling of the South

With the discovery of fire, man conquered cold. Beating the heat was a more daunting challenge. In ancient Rome, patricians simply fled to the Alban Hills to wait out the sultry summer months. Caliph Mahdi of Baghdad was more ambitious. In A.D. 775, he began cooling his garden by packing the hollow walls around it with snow from nearby mountains. Some 700 years later, Leonardo da Vinci devised a water-driven fan for a patron's home. Not to be outdone, one 19th-century inventor built a venetian blind "suit" of clothes that permitted ventilation but blocked out direct sunlight. Only with the development of the mechanical air conditioner in the 20th century did man come up with a practical form of summer relief. As historian Raymond Arsenault points out, the air conditioner has done more than lower indoor temperatures; it has also contributed to social and economic change, notably the "Americanization of Dixie."

by Raymond Arsenault

"Let us begin by discussing the weather . . . the chief agency in making the South distinctive."

So opens Ulrich Bonnell Phillips's *Life and Labor in the Old South* (1929). According to Phillips, the hot, humid Southern climate "fostered the cultivation of the staple crops, which promoted the plantation system, which brought the importation of Negroes, which not only gave rise to chattel slavery but created a lasting race problem. These led to controversy and [North-South] rivalry for power, which produced apprehensive reactions and culminated in a stroke for independence. Thus we have . . . the Confederate States of America."

Thus did Phillips slice through the complexities of two centuries of Southern history.

Most modern scholars have correctly questioned the existence of such a direct link between climate and human destiny. But the search for the more subtle influences of climate on culture and history has continued. Climate may not be the only key to history, but in areas such as the American South it clearly has mattered a great deal.

As historian Charles Roland once noted, "The climate of the South affected the rhythm of life, slowed its beat." Throughout the 19th century, the oppressive weather in such cities as Mobile, Alabama, and Jackson, Mississippi (where summer temperatures hover steadily in the 90s and

humidity remains at 80 percent or above for weeks on end) was one of several factors that encouraged successive waves of European immigrants entering the ports of New York and Boston to head west, not south, where, as a result, a relatively stable black-and-white society faced few challenges from newcomers.

Farming predominated in a land where the growing season was twice as long as in the North. During the ante-bellum era, and for nearly a century after the demise of plantation slavery, black and white farm families comprised the majority of the Southern population; poor land, the crop-lien system, and backward farming methods reduced many of them to eking out an existence at the mercy of market and climate.

And with work indoors under factory conditions uncomfortably hot at best, it is hardly surprising that Clarence Cason noted as late as 1935 "a lack of industrial predisposition among the natives." As he put it, the "indigenous bias of the Southerner tends to influence him toward a sole dependence upon the soil."

Tied to the land, with few big cities, Southerners treasured life on the family homestead or in the small town where, in the words of Faulkner, "beneath the porticoes of the courthouse and on benches about the green, the city fathers sat and talked and drowsed. . . ." Family ties and local folklore ruled life in a region that preferred, as John Crowe Ransom said, "to look backwards rather than forwards." Long after the Civil War, the inhabitants of the old Confederacy remained culturally dis-

Taking their ease in late August 1940 was this family in Lawrenceburg, Kentucky. In the heat and humidity of summer, Southerners could hardly be blamed for taking naps on shady porches or under sheltering oaks.

tinct, a people apart from the rest of the Union and its ever-changing ethnic "melting pot."

Air conditioning has helped to change all that.

Many Southerners who are old enough to remember life before the air conditioner give thanks for the artificial chill that now pervades cars, restaurants, offices, and family rooms, and wonder out loud how they ever survived without it. Others echo the sentiments of one Florida woman who recently told me: "I hate air conditioning; it's a damnfool invention of the Yankees. If they don't like it hot, they can move on back up North where they belong."

Whether they like the air conditioner or not, most Southerners would agree that the side effects of this new technology have eroded the old Confederacy's special character and contributed vastly to what journalist John Egerton has called "the Americanization of Dixie."

A New Dawn

When did the effort to counter the Southern climate begin?

The first primitive devices were invented during the 1830s by Dr. John Gorrie of Apalachicola, Florida (see box, pp. 154–155). Gorrie's invention inspired a host of imitators, many of whom eventually used the new technology in Southern textile mills and tobacco factories. But almost a century would pass before advances in design and engineering changed the purpose of cooling systems from ensuring efficient production on the factory floor to ensuring the comfort of men and women in home and office.

The breakthrough came in 1923, when W. H. Carrier coupled the centrifugal compressor to the air conditioner. By replacing the cumbersome piston-driven compressor, Carrier's innovation both reduced the size and increased the efficiency of air conditioners. He also substituted a safer refrigerant, Carrene, for the potentially deadly ammonia gas previously used. The age of "comfort cooling" had dawned.

Pup Tent

In the South, as elsewhere, the new age began at the movies. The Palace Theater in Dallas and the Texan and Iris theaters in Houston installed air conditioning during the summer of 1924. Signs advertising "cool and clear" weather inside lured an ever-growing crowd of moviegoers. Theater owners elsewhere in the South, many of whom had routinely closed their doors during the torrid summer months, quickly followed suit. The invention of Freon, a nonflammable refrigerant, in 1931 made air conditioning both safer and less expensive. As a result, by the beginning of the Second World War, most Southern movie houses were air-conditioned.

The arrival of air conditioning—paralleling the replacement of "iceboxes" by refrigerators—in other areas of Southern life was far more gradual and haphazard. Banks and government buildings led the way. In Washington, D.C., the great chamber of the U.S. House of Representa-

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Air conditioning arrived on Broadway at the Rivoli Theatre in 1925, one year after its Southern debut at the Palace Theater in Dallas.

tives was air-conditioned in 1928, and the Senate followed in 1929 (leading, for better or worse, to longer sessions of Congress). Air conditioners were installed in both the White House and the Executive Office Building in 1930, and in the United States Supreme Court Building in 1931.

These early systems employed bulky air ducts that made cooling tall buildings both difficult and expensive; most big-city department stores, office buildings, and hotels in the South continued to depend on ceiling fans until the late 1940s. W. H. Carrier's perfection in 1939 of the Conduit Weathermaster System, which propelled cool air at high velocities through narrow tubes, finally provided relief for the sweltering occupants of metropolitan office blocks and skyscrapers from San Antonio to Washington.

Smaller retail stores were easier to cool, and by the late 1930s most Southern cities could count a smattering of air-conditioned barber shops, hardware stores, funeral homes, drugstores, beauty salons, restaurants, and taverns.

Residential air conditioning long remained a luxury only the wealthy could afford. In 1928, Carrier and his associate Irvine Lyle formed the Carrier-Lyle Corporation, hoping to exploit the small but potentially lucrative home air conditioning market. Carrier-Lyle came out in 1932 with the Atmospheric Cabinet—a fairly compact, self-contained room cooler. *Business Week* predicted a year later that "the day is not far when the home air conditioning plant will be as universally accepted as the furnace." In the same spirit of optimism, the Crosley Corporation introduced an air-conditioned canopy bed in 1934 called the Coolrest.

Unfortunately, the Carrier-Lyle

THE CULTIVATION OF COMFORT

During the 1830s, John Gorrie, a Florida physician, began experimenting with a crude form of mechanical cooling. In an attempt to lower the body temperatures of malaria and yellow fever victims, Gorrie suspended buckets of ice from the ceiling of the U.S. Marine Hospital at Apalachicola, Florida. The experiment yielded mixed results but left Gorrie obsessed with the healing potential of chilled air. His use of the steam-driven compressor to cool air led, in 1851, to a patent for the first ice-making machine.

Gorrie was eventually hailed as the inventor of "air conditioning," and, in 1914, proud Floridians placed his likeness in Washington, D.C.'s Statuary Hall.

But Gorrie was ahead of his time. One New York journalist sneered that "a crank down in Florida thinks he can make ice as good as Almighty God."

Nevertheless, experimentation in mechanical cooling and refrigeration expanded during the Civil War and the Reconstruction era. During the late 1870s, the refrigerated freight car revolutionized the meat-packing industry and spurred new interest in the technology of temperature control.

A number of inventors, including several Southerners, set out to prove that a device capable of preserving beef carcasses could also be used to cool live human beings. In 1880, two Alexandria, Virginia, engineers, Robert Portner and Edward Eils, designed a cooling apparatus that used a steam-driven ventilating fan to force air over refrigerated pipes. Installed in several breweries as a quality control device, the Portner-Eils system kept constant the temperature (and therefore the flavor) of beer.

The Gilded Age's most celebrated effort at artificial cooling began on July 2, 1881, when Charles J. Guiteau, a disgruntled office-seeker, shot and wounded President James A. Garfield. In an attempt to comfort the stricken Chief Executive, doctors used ventilating fans

Corporation went out of business in 1935, undermined by the deepening depression. And for some reason (perhaps because it looked like a pup tent attached to a refrigerator), the Coolrest bed never caught on.

Technological innovations during the 1940s—including experimentation with the heat pump—brought the dream of universal air conditioning closer to reality. In 1945, shipping magnate Henry Kaiser announced plans to build "complete communities of mass-produced, air-conditioned homes." Led by Carrier, General Motors, General Electric, and Westinghouse, annual sales of room air conditioners climbed to over 40,000 by 1947. But residential models, often the size of a clothes closet, still accounted for only two percent of the air conditioning industry's total sales volume.

With the arrival of the inexpensive and efficient window unit in 1951 (perfected by the Carrier Corporation), sales skyrocketed. Aided by America's postwar prosperity, the

and 436 pounds of ice per hour to cool his White House bedroom. Despite their efforts, Garfield died two months later.

It was not until 1902 that engineer W. H. Carrier—a 25-year-old Cornell graduate—designed the world's first true air *conditioner.* Unlike previous systems, Carrier's machine, installed at the Sackett-Wilhelms Lithographic and Publishing Company in Brooklyn, could control both humidity and temperature by pumping air at a set velocity over coils refrigerated at a set temperature.

Dr. John Gorrie

Carrier was based in Buffalo, New York, but his new technology was applied most rapidly in the South, thanks to the efforts of two young Southern engineers working with Carrier, Stuart Cramer and I. H. Hardeman. A textile engineer from Charlotte, North Carolina, Cramer actually coined the term "air conditioning" in 1906. Hardeman, a Georgia Tech graduate, convinced Carrier that air conditioning would eventually transform the textile industry.

One of the industry's chronic problems, Hardeman pointed out, was its inability to regulate the moisture content in fibers, which often stiffened and snapped when subjected to the extreme heat generated by spindles. In 1906, Hardeman sold a primitive air conditioner to the Chronicle Cotton Mills of Belmont, North Carolina. Numerous North Carolina cotton and rayon mills followed suit. By 1909, air conditioning had entered the tobacco industry, where, by controlling moisture, it helped to ensure accurate weighing and pricing. The new machines, installed in tobacco stemming rooms, also filtered out the tobacco dust that had bedeviled workers for a half-century.

By the early 1920s, such "climate control" had spread to scores of Southern paper mills, breweries, and bakeries, a development that set the stage for its debut as a feature of everyday life in the decades ahead.

air conditioning industry encouraged buyers with a steady barrage of "Cool Air Clinics" and "Beat the Heat Weeks." Electric companies saw the air conditioner as a way to utilize previously idle summer capacity and discounted their rates.

As a result, Carrier's total sales revenues climbed from $53 million in 1947 to $100 million in 1952. By 1955, one out of every 22 American households had some form of air conditioning. In the South, the figure was closer to one in 10. Five years later, U.S. census takers found air conditioners in 18 percent of the region's homes.

Meanwhile, home central air- conditioning systems—a scaled-down version of those used to cool offices and factories—had begun to compete with window units in Dixie's more affluent suburbs.

More than 400,000 Southern homes boasted central units in 1960. By the mid-1960s, "central air" cooled more than 40 percent of all new houses built in the South and

Southwest. By the end of the decade, 50 percent of the homes and apartments in the South as a whole were air-conditioned. The push-button, climate-controlled house was no longer the monopoly of the rich.

Factory Air

And, increasingly, Southerners escaped the burdens of heat and humidity as they commuted between work and home. A wealthy Houston businessman had devised the first automotive air conditioning system in 1930, fitting his Cadillac with a condensing unit on the trunk and an evaporator blower behind the driver's seat. In 1939, Packard became the first automobile company to offer air conditioning as a factory-installed accessory.

"Factory air" became a familiar feature in buses and automobiles in the South during the 1950s. By 1968, Teamsters Union president Jimmy Hoffa could demand that his truckers be provided with air-conditioned cabs on all long-distance Southern runs—hardly unreasonable in an age when thousands of Southern farmers were plowing their fields using air-conditioned tractors.

After the air conditioner claimed both home and automobile, there was no turning back. By the mid-1970s, despite the OPEC-induced increases in the cost of energy, air conditioning had infiltrated more than 90 percent of the South's high-rise office buildings, banks, apartments, and railroad passenger coaches; more than 80 percent of its automobiles, government buildings, and hotels; approximately two-thirds of its homes, stores, trucks, and hospital rooms; and roughly half of its classrooms.

Aluminum workers walked around their plant in Chalmette, Louisiana, with portable air conditioners strapped to their belts. In San Antonio, Texas, even the Alamo had central air. In 1980, the annual electricity bill for air conditioning in Houston ($666 million) exceeded the annual gross national product of several Third World nations, including Togo and Chad.

No wonder, then, that Southerners, even more than other Americans, came to regard air conditioning as a requirement for civilized living. Even the Internal Revenue Service allowed tax deductions for air conditioners used to alleviate allergies. Interior cooling became, as some would have it, a birthright.

Sun Belt Boom

Governor Richard Riley of South Carolina emphasized this notion at the 1980 National Governor's Conference in Washington, where he argued that federal fuel subsidies to the poor should now be awarded under the assumption that air conditioning a home in the South is no less essential than heating a home in the North.

Indeed, many people now inhabit the South who would not be living there without the air conditioner. And that reality is reflected in the growing Southern population. The population density of the South (82 persons per square mile in 1980) has doubled since 1930. Some of this increase can be attributed to the South's declining death rate, and much of it to an influx of Yankee retirees and job-seekers. Both phenomena owe a great deal to air conditioning.

The link between air conditioning and declining mortality is substantial. Prior to the 20th century, the mortality rate in the South was much higher than that in other regions in America.

Yet, since the turn of the century,

A 1982 view: Shining corporate towers dominate downtown Houston.

regional mortality rates have been converging. Air conditioning is one of the reasons why. It has reduced infant mortality, prolonged the lives of thousands of patients suffering from heart disease and respiratory disorders, increased the reliability and sophistication of microsurgery, and aided the production of modern drugs such as penicillin.

Climate control has had an even greater impact on migration. It is no coincidence that, during the 1950s, as air conditioning first invaded the South, the region's net out-migration was much smaller than it had been during the previous four decades, when millions of blacks moved North seeking jobs and freedom from Jim Crow. During the 1960s, for the first time since the Civil War, the South actually experienced more *in*-migration than *out*-migration. While the net gain was modest—fewer than 500,000 people—its very existence was startling.

The 1960s were, of course, only the beginning. Between 1970 and 1978, seven million people migrated to the South, twice the number that left the region. By the end of the decade, the Sun Belt boom was in full swing.

The Northern migration of the last two decades has infused the South with new ideas and new manners, ending the region's long-standing cultural isolation. And with this increasing diversity, the legacy of the old Confederacy has begun to fade.

The changes wrought in the South by the air conditioner helped, of course, to speed the demographic transformation. By making life in the factory more bearable, climate control nurtured the expansion of industry in the New South. The number of Southerners employed in manufacturing exceeded those employed in agriculture for the first time in 1958. By 1980, factory workers outnumbered farm labor-

ers by a margin of 3 to 1.

With or without air conditioning, the South was ripe for industrial development. But, as Clayton Reed of the *St. Petersburg Times* pointed out in 1978, it would be impossible to "conceive of a Walt Disney World in the 95-degree summers of central Florida without its air-conditioned hotels, attractions, and shops," or "of Honeywell or Sperry or anyone else opening a big plant where their workers would have to spend much of their time mopping brows and cursing mosquitoes."

Indirectly, therefore, the air conditioner has spurred the increase in the South's per capita income—from 52 percent of the national average in 1930 to almost 90 percent today. The New South is slowly rising from the "generations of scarcity and want" that historian C. Vann Woodward once called "one of the distinctive historical experiences of the Southern people."

Leaving the Farm

Since 1940, the South has also been the most rapidly urbanizing section of the country. The proportion of Southerners living in urban areas has nearly doubled, from 36.7 percent to almost 70 percent today. Although its population still remains the most "rural" in the United States, the South and the rest of the nation are no longer that far apart.

How much of this recent urbanization can be attributed to air conditioning is impossible to say. But according to journalist Wade Greene, "Two of the country's fastest-growing cities, Houston and Dallas, would probably be provincial backwaters today without air conditioning." The same could be said of scores of other fast-growing Southern cities, including Jacksonville, Charlotte, Birmingham, and Baton Rouge.

In the South, urbanization and industrialization are matters of no small cultural importance. Although sometimes exaggerated, "agrarianism" has been an integral part of traditional Southern culture. In abandoning the open farm for the air-conditioned factory, suburb, and city, Southerners have weakened their old bond with the natural environment.

Turning the Switch

It seems clear that most Southerners have found themselves spending more time in the Great Indoors. For confirmation, one has only to walk down almost any Southern street on a hot summer afternoon, listen to the whir of compressors, and look in vain for open windows or human faces. As Frank Trippett put it in a 1979 *Time* essay, air conditioning has "seduced families into retreating into houses with closed doors and shut windows, reducing the commonality of neighborhood life and all but [making obsolete] the . . . society whose open, casual folkways were an appealing hallmark of a sweatier America."

Of course, among those whom the air conditioning wave has yet to reach, these "folkways" remain. On hot Sunday afternoons, rural blacks, poor whites, migrant laborers, and mountaineers still sit on their front porches, sipping cool drinks, chatting, enduring the discomfort that sends their more affluent compatriots scurrying indoors to turn their switches to Hi Cool.

In many cases, these old-fashioned folk are the only ones left with front porches. To the dismay of many Southerners, air conditioning has, in effect, done away with a rich array of vernacular architecture. Southern houses had once relied on an ingenious marriage of passive cooling and

cross-ventilation to reduce heat and humidity. "You look at what the Crackers were doing 75 or 100 years ago," Florida architect Dwight Holmes recently remarked, " . . . and when you analyze it, they had the right answers."

The catalogue of structural innovations is long and varied: high ceilings, thin walls, long breezeways, floors raised three feet off the ground, steeply-pitched roofs vented from top to bottom, open porches, broad eaves that blocked the slanting sun, groves of shade trees shielding the southern exposure, houses situated to capture prevailing breezes, and so on.

Historically, these designs created a milieu that is distinctively Southern. In contrast, the modern, air-conditioned tract houses that have sprung up as replacements outside Macon and Houston and Charleston—with their low ceilings, small windows, and compact floor plans—are now endemic from Maine to California.

During the 1950s and 1960s, social science researchers hailed these new air-conditioned homes as the savior of the American family. A 1962 report on the effects of air conditioning on families in Austin, Texas, and Levittown, Pennsylvania, was typical: "Hot meals—40 percent more nutritious—enthusiastically eaten despite soaring outdoor temperatures. A $5.80 average weekly saving on outside entertainment. Laundry time cut in half; house-cleaning time cut by one-third."

In retrospect, such expansive claims seem misleading, especially with regard to the Southern family. Air-conditioned living may have made many individual family members happier, but it does not necessarily follow that it strengthened family ties. With its emphasis on kinship and family history, the Southern family has long been known for its "semi-extended" nature. During the long, hot summers, the withdrawal of husbands, wives, and children into the seclusion of their air-conditioned homes, as more than one observer has noted, has weakened the leisurely old Southern custom of "visiting with" nearby grandparents, uncles, aunts, and other relatives.

A more noticeable effect of air-conditioned architecture has been its assault on the South's strong "sense of place." Epitomized by the fictional inhabitants of Faulkner's Yoknapatawpha County, Southerners have been rooted to local geography—to a county, town, neighborhood, or homestead. As look-alike chain stores, tract houses, glass-sided skyscrapers, and shopping malls overwhelm the landscape in and around cities and towns, this sense of local identity is bound to fade.

Perhaps, as it has done so often in the past, the Southerner's special devotion to regional and local traditions will ensure the survival of Southern folk culture. But this time it won't be easy: General Electric has proved a more devastating invader than General William Tecumseh Sherman. As long as air conditioning, abetted by immigration, urbanization, and broad technological change, continues to make inroads, the South's distinctive character will continue to diminish, never to rise again.

Understanding Wallace Stevens

Growing up in Hartford, Connecticut, the writer Brendan Gill occasionally caught sight of an aloof, well-dressed insurance executive by the name of Wallace Stevens. "He marched," Gill later recalled, "like a tame bear through the streets of our city, but there was nothing tamed about him; he had chosen to imprison his fiercer self in a cage of upper-middle-class decorum as Frost had hidden himself inside a canny bumpkin." Stevens's "fiercer self" was busy writing poems—poems so intricate and demanding that critics were slow to recognize their worth. Here, Frank McConnell explains the poet and his work.

by Frank D. McConnell

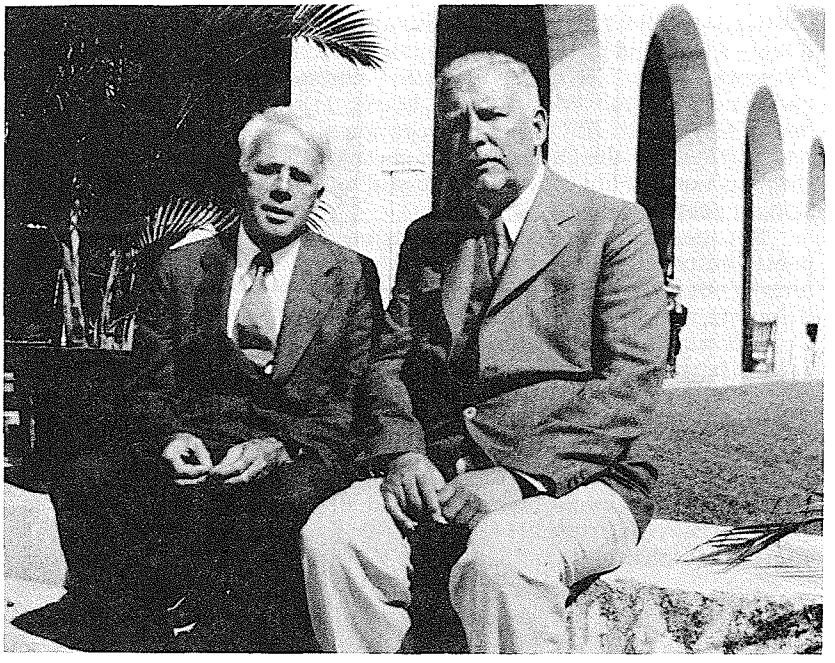
> He lifted up, among the actuaries,
> a grandee crow. Ah ha he crowed good.
> That funny money-man.

Thus John Berryman, in *The Dream Songs*, begins his elegy for Wallace Stevens (1879–1955), certainly one of the most complex, and arguably one of the greatest, American poets.

Not that the laurel of "greatest" is a sure thing. Walt Whitman, Emily Dickinson, T. S. Eliot, Hart Crane, and William Carlos Williams have all been granted that dubious distinction—the college English professor's favorite American writer. Until recently, Stevens was not even one of the major contenders. For most of this century, the distinction went to Eliot, and there is still little doubt that *The Waste Land* (1922) is this century's most influential poem in English. A profoundly personal utterance of despair, which was also read as the anthem of a whole generation wrecked and depleted by the First World War, *The Waste Land* is a masterpiece that has been echoed, quoted, or alluded to for 60 years. Its position is not merely secure: It is set in granite.

But "most influential" does not necessarily mean "best."

In a famous opinion, Eliot said that poetry is not the expression of an emotion but an escape from emotion. We can now see, though, that



Robert Frost and Wallace Stevens at Key West, February 1940. The two Harvard classmates became cordial friends and polite literary rivals.

his own best poetry violates that dictum: It is an exceptionally faithful expression of an emotional crisis and quest that would make ordinary men quail. Like Lord Byron (whose poetry he disliked), Eliot carried the—admittedly obscure—pageant of his bleeding heart around Europe. In doing so, he became the most romantic of modern poets, even while striving to be the most antiromantic of critics.

As for Wallace Stevens, he stayed home. He stayed home and wrote his odd, increasingly abstract escapes from emotion in what cannot be described as obscurity but must be described as the half-light of muted fame. He did so until near the end, when gradually full and earned celebrity overtook him. And since his death in 1955, he has emerged as perhaps *the* important American poet of his age. Some of our best critics, at least, have suggested this: J. Hillis Miller in *Poets of Reality* (1965), Helen Vendler in *On Extended Wings* (1969), and most recently, Harold Bloom in *Wallace Stevens: The Poems of Our Climate* (1977).

The idea of "best" is, to be sure, a vulgar and reductive concept in comparing artists. But the consensus is that Stevens, at least, may be one of the few American poets who could take his stand, in some sort of literary Last Judgment, beside the inimitable and inescapable figure of Whitman himself.

Stevens really *did* stay home—and did so while becoming the most cosmopolitan of writers. His work is studded with enough allusions and foreign words and phrases to make it a fair competitor of James Joyce's *Finnegans Wake*. Yet he never visited Europe. Indeed, between 1932 and his death, he lived in a single house: 118 Westerly Terrace, Hartford, Connecticut. His preferred vacation spots were Mexico, Florida, and particularly the Caribbean: warm, harshly sunlit places, and also the places one would expect a successful businessman, rather than a visionary poet, to enjoy.

But then, he was a successful businessman as well as a visionary poet. The popular vision of the poet is of the holy madman burning himself out for the sake of his art: Vachel Lindsay, Hart Crane, Delmore Schwartz, and John Berryman all come to mind.

But surely it is important—and reassuring to aspiring poets—to note that the three central American poets of this century, far from being self-destructive neurotics, were all responsible, functional, and successful citizens. Eliot was, in his early years, a bank clerk, and later the director of Faber and Faber, a distinguished London publishing house; William Carlos Williams was a general practitioner in Paterson, New Jersey, who, by his own estimation, delivered more than 2,000 babies; and Stevens, from 1934 on, was vice-president of the Hartford Accident and Indemnity Company.

Paying the Bills

"That funny money-man," Berryman calls Stevens in his elegy—though perhaps a little unfairly. Funny he certainly was. Who but a funny man would entitle a history of the evolution of human consciousness "The Comedian as the Letter C," or call a poem about death, decay, and regeneration "The Pleasures of Merely Circulating"?

He was also, without question, a money man. Peter Brazeau has recently compiled an invaluable collection of reminiscences of Stevens by his friends, fellow poets, and fellow workers. Entitled *Parts of a World* (1983), Brazeau's book shows, among other things, that Stevens took his executive duties with absolute seriousness, examining claim after claim rigorously and professionally. His desk was usually piled with towers of insurance-law textbooks. In fact, most of his colleagues at the Hartford remember him more for his assiduity as an investigator and executive than for his brilliance as a poet. The truth is, they never really understood the poetry.

And yet, the insurance man's career was, apparently, in service of the poetry. Stevens seems to have known, from his undergraduate

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days at Harvard, that poetry would be his vocation and his toy. But he was, from the beginning, a canny man, and knew that a career in the realm of the imagination was best supplemented by a career in the world that pays the bills.

So, upon graduating from Harvard in 1900, he worked briefly as a journalist for the *Tribune* in New York. Finding that neither to his liking nor to his sufficient emolument, he went to New York Law School, and between 1905 and 1907 drifted through three law firms. In 1908, he joined the New York branch of the American Bonding Company of Baltimore, thus entering the insurance business that was to be his calling (or avocation?) for the rest of his life. He married Elsie Kachel, whom he had known for years, in 1909, and their one child, Holly Bright Stevens, was born in 1924. He moved to Hartford, Connecticut, in 1932, never to live permanently anywhere else. Born in Reading, Pennsylvania, the son of a successful attorney, Stevens spent his entire life, aside from vacations to his favorite tropical resorts, within an area smaller than that of France.

But if the businessman's life was to support the poet's, Stevens never let the poet in him interfere with the businessman. There is a famous story—probably apocryphal, like most good stories—about a relatively celebrated poet who had married the daughter of the owner of a large Midwestern conglomerate. In the late 1940s, this poet was visiting Hartford, and naturally wanted to meet the *other* famous businessman/poet. Stevens invited him to lunch at his club, along with some Hartford executives. The conversation was all about actuarial tables and tax laws until Stevens's frustrated guest finally ventured a question: "Wallace, I've always wanted to ask you something about your poem, 'Sunday Morning.'" A silence descended over the table, until Stevens frostily observed, "We don't discuss *those* things *here*."

Even if only legendary, the anecdote catches the paradoxical nature of the man. Not "schizophrenic" (as *Newsweek* recently described Stevens, in a review of Brazeau's book), but paradoxical. For he was a man who loved, reveled in, and comfortably inhabited paradox. No American poet in this century has been more the poet of joy, and none in this century has been more the architect of despair.

Let me quote Berryman's epitaph again: "He lifted up, among the actuaries, / a grandee crow." Stop there, for the moment. For Stevens *was* an actuary: that is, someone whose profession it is to calculate the probabilities of annihilation for a given subject, human or otherwise. A banker (Eliot, say) deals with money as if it were the supreme value—something, in other words, that you can bank on. And a doctor (Williams, say) deals with human life as something to be saved at any cost. But an actuary (Stevens, say) has to deal with arbitration between those two absolutes.

Now read Stevens's poem, "The Snow Man":

One must have a mind of winter
To regard the frost and the boughs
Of the pine-trees crusted with snow;

And have been cold a long time
To behold the junipers shagged with ice,
The spruces rough in the distant glitter

Of the January sun; and not to think
Of any misery in the sound of the wind,
In the sound of a few leaves,

Which is the sound of the land
Full of the same wind
That is blowing in the same bare place

For the listener, who listens in the snow,
And, nothing himself, beholds
Nothing that is not there and the nothing that is.

This may well be one of the most-anthologized pieces Stevens ever wrote. But who—or what—is the Snow Man? The interpretation that seems best suited to the poem is that the Snow Man is the poet himself, and that, therefore, the subject of the poem is the nature of poetry itself. To have a "mind of winter" and to "have been cold a long time" is to see the world dispassionately, to see it for the wintry landscape that Stevens believes it to be: a world of emptiness in which we are the only truly conscious participants. To see it that way is *not* "to think / Of any misery in the sound of the wind": Human suffering is not reflected in or sympathized with by nature, but is strictly *human* suffering.

Essential Lies

"The Snow Man," in other words, is a very grim, very uncompromising little poem. It is the kind of poem that might have been written by a man possessed simultaneously by the rigid statistics of mortality and the lyric obsession with overcoming death. And it was.

One is reminded of another famous Stevens poem, "The Emperor of Ice-Cream." It is easy to read the poem a number of times without realizing that it is about the death of a wealthy lady, because that fact is never explicitly stated. The poem's central meaning comes through clearly in the seemingly playful refrain: "The only emperor is the emperor of ice-cream." Ice-cream (like a snow man) is a human confection, a human imposition upon nature not encouraged by nature herself. Picturesque, perhaps; delicious, perhaps; but subject to the Emperor of Ice-Cream, which is to say, bound to melt, fade, disappear.

For Stevens—and this is true throughout his long, productive career—the vision of the Snow Man is the only vision to which we are really entitled, the vision of a world without hope.

This is not to say that Stevens is a "philosophical" poet. But it is to say that, for him, poetry is a kind of pre-philosophy. Poetry is "the necessary angel of earth," as he calls it elsewhere, and its function is to introduce us into the full glare and radiance of reality. William Carlos

Winslow Homer's Key West *(1903). Similar scenes from the coast of Florida provided settings for many of Wallace Stevens's poems.*

Williams, a kindred spirit to Stevens's particular kind of materialism, wrote in an important letter (to Marianne Moore) that all of his poetry came out of a moment "when I was about twenty—a sudden resignation to existence, a despair—if you wish to call it that, but a despair which made everything a unit and at the same time a part of myself."

Stevens is never this melodramatic nor this confessional, but we can speculate that the same sort of experience lies somewhere behind his own work. Writing is not a mere exercise in technique and rhetoric; it is a vital aspect of the interchange between the mind and the world outside, which seeks to kill the mind. At least this is what major poets such as Eliot, Williams, and Stevens can convince us of while the spell of the poem lasts, and it is not a paltry accomplishment.

"Poetry Is a Destructive Force," reads the title of another early Stevens poem. (His titles, by the way, are often as engaging as the poems they preface.) And the last stanza of the poem is an unforgettable parable about the intellectual adventure and the danger concealed beneath the notion of "fine art":

> The lion sleeps in the sun.
> Its nose is on its paws.
> It can kill a man.

There is something quintessentially American about all this. Or perhaps it is quintessentially modern. (Gertrude Stein observed in 1909

that America was *the* modern nation precisely because of the "abstract, disembodied" quality of its life.)

Peter Conn, in his book *The Divided Mind* (1983), argues that the American imagination is torn between a sense of the past—religious, mythic, resonant with interconnections—and a sense of the future—technological, scientific, fraught with the weight of infinite advance. Stevens, more perhaps than any poet of his century, is the registrar of that tension.

Eliot may have retreated—and retreated heroically—from the panic of modern life into an idealized, neo-Christian ideal. Williams may have delivered himself to a vision of the infinitely expansive and infinitely empty universe of what is to come. But Stevens remains the invaluable poet of the present moment, poised between nostalgia and expectation. "Great are the myths," intones Whitman in *Leaves of Grass*: Great are the myths and mythologies of the past that have served to reconcile us to our condition, to our mortality. And in the noonday glare of our knowledge that they are simply myths, we reconstitute them as the essential lies by which we live.

Stevens remains truer to that Whitmanian insight than any poet of the 20th century, and, in doing so, remains truer to the modern tradition in poetry than any of his colleagues, brilliant as they are. Poetry is the "supreme fiction," the myth that at the same time reconciles us to and estranges us from the world as we know it, things as they are. As such, poetry is the absolute, absolutely necessary underpinning of consciousness itself. As Stevens writes at the end of one of his finest poems, "Notes toward a Supreme Fiction":

> Soldier, there is a war between the mind
> And sky, between thought and day and night. It is
> For that the poet is always in the sun,
>
> Patches the moon together in his room
> To his Virgilian cadences, up down,
> Up down. It is a war that never ends.

This great passage can be taken as an epigraph for all of Stevens's work. But then, he is the kind of obsessive writer (Faulkner and Joyce also come to mind) for whom *any* passage is a virtual epigraph.

At any rate, this is the speech of the Snow Man. The war between the mind and the sky is the central conflict of Western philosophy since, at least, René Descartes in the 17th century—and probably, truth be known, since Plato. It is the warfare involved in, or necessitated by, our knowledge that we are not the universe we inhabit, and that we are not that universe because we are conscious of it. Consciousness, in other words, *is* the Fall, the exile from the Garden—and also the cure for that primal wound. As he says in "Notes toward a Supreme Fiction":

> The first idea was not our own. Adam
> In Eden was the father of Descartes

And Eve made air the mirror of herself,

. . . . . .

There was a muddy centre before we breathed.
There was a myth before the myth began,
Venerable and articulate and complete.

The "first idea," the myth before the myth began, is the reality of the world as *given* to us, the reality of the world, and of our mortality, in the cold equations that an actuary knows—or should know—better than anyone else. And the poet—by whom Stevens means all of us at our most alert—stands always in the sun, in the clear shadowless light of that harsh knowledge (and it is perhaps interesting here to recall his own fondness for sunlit, tropical climes). But the knowledge has a gift attached to it. For the poet, at his best, "patches the moon together"—that is, invents the gentler light of imagination, with his "Virgilian cadences." He invents a fiction, a myth, a poem, an *articulation* of the uncaring universe around us that will let us believe in its benevolence, even though, or just because, we do not believe in the articulation itself.

This sounds like a paradox, but actually it is not. "Do I contradict myself? / Very well then I contradict myself," says Whitman with lordly insouciance. And Stevens, expert in the contradictions of existence that Whitman explored, does not even bother to apologize for the

"The man bent over his guitar, / A shearsman of sorts. The day was green." Thus opens Stevens's long, meditative poem, "The Man with the Blue Guitar." Stevens, an admirer and collector of modern art, probably found inspiration for this poem in Pablo Picasso's painting, The Old Guitarist, *(1903).*

inescapable war between the mind and the sky. As he says in "Esthétique du Mal," "Natives of poverty, children of malheur, / The gaiety of language is our seigneur."

Now, to say that "the gaiety of language is our seigneur" is to say that only in our articulation of the world do we find anything like the Lord of the world. Stevens's great and enduring value as a poet is that he leads us into those deep and troubled waters, and that he forces us to realize that to read him is to learn to read, and think, all over again.

In one sense, his is the purest poetry of atheism ever written, and certainly the closest approach in English verse to a major philosophical problem of the 20th century. Why should there be something rather than nothing? That, says the great German philosopher Martin Heidegger, is the elementary question of metaphysics. And that, in one way or another throughout his long life in language, is Stevens's theme. It is also the theme, or the undercurrent, of most contemporary poetic, political, and epistemological thought.

Angry at God

Why *should* there be something rather than nothing? Why should the world as it is, things as they are, be and be *there?* For the world as it is is a frightening place if we do not have recourse to the mythologies that reconcile us to its pain. Again we are confronted with the unwelcome wisdom of the actuary who knows that we die. "The death of Satan was a tragedy / For the imagination," writes Stevens in "Esthétique du Mal." For the death of Satan is also the death of God. Stevens, like the German philosopher Friedrich Nietzsche, understood that absolute good and absolute evil have to exist together or cannot, either of them, exist at all. And Stevens also understood, along with the French thinker Voltaire, that if the universe did not give us a God, we would have to invent one for ourselves. Among the *Adagia* that Stevens added to throughout his life, the poet had much to say about God. "God is a postulate of the ego," he wrote. But if God were of man's own making, he was, without question, man's supreme creation: "Only a noble people evolve a noble God." And sometimes Stevens even sounded like the English visionary poet William Blake: "God is in me," Stevens mused, "or else is not at all (does not exist)."

Sigmund Freud, in *The Future of an Illusion* (1927), argues that religious belief of any kind is simply man's attempt to reconcile himself to his inevitable, ineluctable extinction. In doing so, Freud echoes what the fifth-century theologian Saint Augustine says about the use of religion in the first chapters of *The City of God*, and thereby establishes himself—he would, naturally, have been enraged at the idea—as one of the major religious thinkers of our age.

Indeed, Freud and Stevens are both proof that the most committed atheists can be the most serious and creative theologians. For their atheism can be a mask, or a veil, for a profound disappointment at the failure of the universe to give us an answer to existence. "Anybody who doesn't think the religious life is melancholy," a friend once said to me, "doesn't know much about the religious life."

I never really understood the wisdom of that observation until I learned to read Wallace Stevens. For Stevens, throughout his career, is a deeply religious writer—which is to say a man very angry with God for not existing. In one of his earliest and most celebrated poems, "Sunday Morning," he describes quite simply the decision of a lady not to go to church but to stay home and enjoy the pleasures of a leisurely day. "We live in an old chaos of the sun," he writes in that poem, meaning that we *are* children of poverty and natives of "malheur." But the gaiety of language—which is also, for this most intelligent of poets, the dance of intellect—can be enough to get us through. Counterposed to the idea of the "chaos of the sun" from that very early poem is the title, virtually a poem in itself, of one of his very last poems: "Reality Is an Activity of the Most August Imagination."

If Stevens is the poet of death, of the actuary's knowledge, he is also the poet of triumph, of the joy of the present moment that transcends and validates the inevitable descent into darkness which is the lot of us all. Scarcely a poet has written in the second half of the 20th century who has not been influenced by Wallace Stevens. And—perhaps more importantly—scarcely a philosopher or theologian has written during our era who has not echoed his anticipation of our final doom.

But, at the end, there is joy: the joy of language, of the play of intelligence, and of the simple pleasure of being in the world. Stevens, in fact, may be the century's happiest poet, precisely *because* he immerses himself most deeply in the possibility of unhappiness. Stevens expressed that paradox best in the "Esthétique du Mal":

> One might have thought of sight, but who could think
> Of what it sees, for all the ill it sees?
> Speech found the ear, for all the evil sound,
> But the dark italics it could not propound.
> And out of what one sees and hears and out
> Of what one feels, who could have thought to make
> So many selves, so many sensuous worlds,
> As if the air, the mid-day air, was swarming
> With the metaphysical changes that occur,
> Merely in living as and where we live.

Contained in these lines is the statement of a final triumph—that of the human mind, which, by constantly manufacturing meanings, transforms the world *out there* into "so many selves, so many sensuous worlds." If this is the triumph of great poetry, it is one to which the work of Stevens may make lasting and legitimate claim.

We welcome timely letters from readers, especially those who wish to amplify or correct information published in the Quarterly *and/or react to the views expressed in our essays. The writer's telephone number and address should be included. For reasons of space, letters are usually edited for publication. Some of those printed below were received in response to the editors' requests for comment.*

Keeping the Flame in Barstow

With reference to "Teaching in America" [*WQ*, New Year's 1984], I recall that, nearly a century and a half ago, James Fenimore Cooper said that democracy "tended in all things to mediocrity." With compulsory high school education in effect in the United States, the intellectual mean of our populace is declining as predicted.

When I was young, I saw teachers honored as knowledgeable persons whose ideas were well heeded. They were not well paid; most needed summer jobs. There are still no tangible rewards in teaching, and honor has vanished. Nor will doubling or tripling salaries cause the intelligent to lay siege to the mind of youth.

For 20 years, I have taught English Composition in a socially and economically depressed area. A big weekend for the young is getting "wasted" at a keg party; reading—not to mention writing—is a foolish pursuit; culture is the Friday night football game; good music is the "top 40"; the fine arts are for "sissies."

My classes are sometimes too full, too loud, too ignorant. Often the noise and ignorance are mere defenses that knowledge quickly crumbles. Yet I have found that whatever is demanded will usually be produced, though not without a struggle. If I went elsewhere, the community would have one less teacher presenting the best that humanity has to offer.

As an educator, my greatest fear is that I will live to be the most knowledgeable person in my community. If I am worthy of my profession, that time will never come.

Don Braden
Barstow, California

Riddles

My perspective as a high school principal confirms some of your suspicions about the current state of the educational art and denies others.

Currently, there is national promotion for excellence in education. Arkansas's battle with the National Education Association (NEA) over salary increases based on testing, Tennessee's merit pay plan, Florida's widespread legislation on educational reform, and other proposals indicate the national search for worthwhile reforms to upgrade public education in America. In South Carolina, the legislature will soon vote on a $210 million reform package proposed by Gov. Richard Riley to raise salaries, provide remedial education funding, and increase diploma prerequisites—all to be funded by a one cent increase in the sales tax.

We want academic reforms and harder requirements, and we want these reforms to apply to everyone. But recent reforms will annihilate many excellent athletic programs (as has already happened in Charlotte, N. C.). Athletic boosters are howling that star players are ineligible, so fans do not come to see losing teams. Therefore, gates go down, nonrevenue producing sports are cut, and school pride as a function of athletics decreases. My position has always been that class comes first, but the riddle remains unanswered for many students for whom school is a setting for athletic prowess, not academic success.

You could say that society expects them to be students first, but they compare the salaries of professional athletes and those of classroom teachers and rightly doubt society's commitment to education. You could say that education is important, but many state legislatures have passed reform programs and not funded these programs adequately. And in America, there is a direct relationship between the cost of something and its anticipated value—the more you pay, the better it is. So how important can public education be?

We want teachers to work longer hours each day and more days each year but are not willing to fund raises. We want them

to teach more, require more of each student, and demand more homework without reducing the size of classes. How serious can we be about more work when the conscientious teacher (most are) is already burdened with three to four hours a day of grading papers?

The National Association of Secondary School Principals has expressed concern that in our mad dash to reform we may be ignoring the student who excels in Vocational Education or forcing him out of machine shop, where he succeeds, into Algebra II, where he will fail.

There are more dilemmas that the principal faces daily. You want more discipline—we'll give you more discipline. But parents and students must accept the punishment without frivolous appeals, specious court cases, and needless hassles. We can no longer waste precious time needed to supervise curriculum and instruction on minor discipline infractions and their spontaneous paperwork. The call for more discipline must be accompanied by universal acceptance—not "everyone, except mine."

Joseph D. Delaney, Principal
Spartanburg High School
Spartanburg, South Carolina

Teachers in Politics

Your article is absolutely correct when it states that the NEA has "in recent years been the most conspicuous force in national (Democratic) politics" ["Teachers, Unions, and Politics," *WQ*, New Year's 1984, pp. 72–73]. But your readers might have been equally interested in knowing, for instance, that Republican Senators Lowell Weicker of Connecticut and Robert Stafford of Vermont—two long-time friends of education—were both endorsed by NEA in their 1982 election campaigns. Both were re-elected by narrow margins, and both announced afterwards that NEA suppport was critical to their success.

Our endorsements of moderate Republican Senators Weicker and Stafford—and of other Republican representatives and senators—hardly fit the partisan

image of NEA the "ideological" crusader painted in the *Wilson Quarterly*. Neither would much else of our wide-ranging work: on-going state action plans to raise the entrance standards and academic quality of teacher training institutions, support for rigorous on-site evaluations of classroom teachers, collaborative efforts with business to improve the quality of educational computer software, mass-market paperback books designed to help parents give their children a head start in school, anti–child abuse programs prepared with the assistance of administrators and school boards.

We in NEA are working hard in many areas to build the educational excellence our nation needs and our children deserve. But we learned long ago that public education cannot be divorced from the world outside our schoolhouse doors.

Mary Hatwood Futrell, President
National Education Association
Washington, D.C.

Business in the Classroom

In training and rewarding teachers, I believe that we should focus on new approaches that have tangible goals and more or less quantifiable outcomes. I would include teacher scholarship programs, funding for 11 or 12 months of employment for teachers, and the establishment of special institutes and academies that would serve teachers' needs for advanced training and where teachers could be involved in colloquia led by outstanding thinkers and educators from across the nation. The North Carolina Commission on Education for Economic Growth has recommended these solutions to the problems of teacher supply and quality, plus a substantial increase in base pay and a new approach to career growth.

But by far the most encouraging recent development in North Carolina is the partnership between the schools and the business community. In making clear the link between good schools and good jobs, between education and economic growth, we have developed a powerful new ally for our schools. Denis Doyle acknowledged the increased business support for education ["Window of Opportunity," *WQ*, New Year's 1984], but I want to emphasize an important underlying point: Business support not only helps schools immediately but also signals a long-term public awakening to the need for good schools to help us meet our economic challenges. That awakening will enable our schools to avoid the boom-to-bust cycle of public support for education of the past several decades.

James B. Hunt, Jr.
Governor of North Carolina

Scholarship Is Not All

I heartily agree that there is a lack of scholarship in American universities and secondary education, and that many teachers entered the profession without a great deal of intellectual curiosity or background in their disciplines. I would like to suggest that the authors missed one very vital point: Many teachers have made "the deal," as stated by Gary Sykes ["The Deal," *WQ*, New Year's 1984], perhaps because they do not know how to handle or, more important, instruct students effectively. Many teachers' expectations of what the classroom was going to be have not materialized. Many of them are finding that their students for one reason or another are turned off or are not really willing to put time and effort into any particular discipline. In addition to improving the teachers' scholarship, schools, colleges, and in-service programs should advise teachers about what methods they should use to reach many students. Once teachers learn the approaches and methods necessary to excite students, then, I believe, scholarship can return to the classroom.

Charles F. Kimball, Principal
South Hadley High School
South Hadley, Massachusetts

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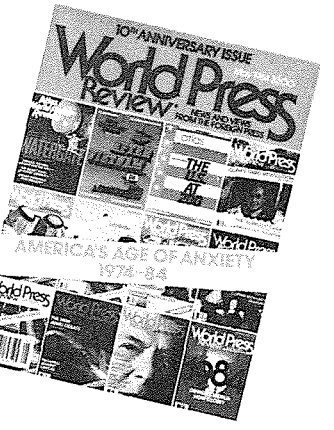

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OF PRINCIPALS AND PROSE

In "The Deal" ["Teaching in America," *WQ*, New Year's 1984], Gary Sykes wrote that "35 percent of high school principals had previously been high school athletic directors." Several surprised readers requested the source of that figure, which is a 1978 study by the National Association of Secondary School Principals (NASSP), entitled "The Senior High School Principalship."

Ernest L. Boyer, former U.S. Commissioner of Education, has argued that principals play "the pivotal role . . . in bringing about more effective schools," notably in their choice of teachers to hire. But 90 percent of the principals surveyed by the NASSP saw time-consuming red tape as their number one problem; one-third complained that they had little or no authority in budget allocation or determining "staffing practices."

In another article in our New Year's 1984 issue, "What Can We Learn from Others?" Val Rust noted that America's high school English instructors typically teach five classes, each with 25–30 students. The full impact of this workload, however, was not made clear: With 125–150 students to instruct, the teacher has little time to correct student papers, and hence does not require extensive writing exercises. According to Arthur N. Applebee's *Writing in the Secondary School* (1981), only 10 percent of classroom time in high school English courses is spent on writing assignments.

For the Brightest

Virtually unnoticed in the seething cauldron of media comments about education, a quiet academic revolution has been under way for a dozen years. It involves verbally and/or mathematically talented students identified chiefly at age 12 as seventh graders. The movement is university-based (mainly Arizona State, Denver, Duke, Johns Hopkins, and Northwestern). Each year it reaches about 80,000 of the nation's most intellectually able youths. Seeking, before age 13, scores of at least 500 on mathematical skill, and/or 430 on verbal skill, they take the College Board Scholastic Aptitude Test. In comparison, college-bound, male 12th graders average 493 in math and 430 in verbal after five more years of study than the youngsters have had. About one-fourth of the participants in the talent searches qualify, the top one percent of their age group with respect to these abilities.

The purpose of finding youths who reason exceptionally well verbally or mathematically is to help them educationally. Their schools are encouraged to do so. Also, during the summer, each of the five universities offers fast-paced, high-level, academic, residential courses in various high school subjects. In the Johns Hopkins program, for example, students may learn an average of two years of mathematics, from algebra onward, in three intensive weeks. Some master only one year, whereas others complete four or more school years of the subject. Other students may complete a year of high school biology (including laboratory work), chemistry, physics, computer science, composition, Latin, German, quantitative economics, or statistics.

At present, this enrichment is financed mainly by the parents of the students, but it is so effective that schools, foundations, government, business, and service clubs would be wise to help it along.

Julian C. Stanley
Department of Psychology
The Johns Hopkins University
Baltimore, Maryland

For the Many

The two biggest problems in American education are low teachers' salaries and neglect of the basics in children's education. I have a solution.

Because of the proliferation of so-called enrichment courses, attention has been diverted from the basic studies that elementary and high school students should be taking. This, in turn, has caused less than efficient class size and required more teachers. It does not make much sense to allow high school seniors to select from 27 different literature courses, as is the case in some of our large regional schools. Likewise, when a variety of foreign languages is offered, class size often drops to four or five students in the less popular languages. It would make a lot more sense to concentrate on fewer courses, do them better, and get a more efficient class size. Through attrition, the number of teachers in a system would be reduced, and the corresponding savings could be applied to teacher salaries.

Angelo Pizzagalli
South Burlington, Vermont

In Service

It always interests me to realize that so many who have spent so little time in public schools know so much about them. As someone in the public schools, I welcome your interest, but I question some of your assumptions.

The "Teaching in America" special report was written by higher education. The authors' combined experience in the public schools might equal the years of service by the average member of my professional staff. And I would wonder when your authors' last experience, or even visit, in the public school occurred.

Dr. Patricia Graham raised the question of the central purpose of schooling today ["Wanting It All," *WQ*, New Year's 1984]. As family, church, and government slip in their traditional responsibilities, education has been given its usual share and more. Expectations and demands on the school increase with little or nothing removed. Today, along with the regular menu of reading, writing, and math skills, we can add a potpourri of requests that have spread schools so thin: Is it any wonder that we do not achieve expectations? Anything with an education added to it is suspect; it probably represents an add-on from some other failing institution: drug education, nutrition education, driver education, moral education, death education. . . .

It is unfortunate that more classroom personnel do not publish, serve in "blue-ribbon" study groups, or write books about the school program accenting the positive. Obviously, they are too busy meeting the unrealistic demands being placed on the educational institution—and not doing too bad a job with the resources provided.

Dustin A. Peters, Principal
Elizabethtown Area High School
Elizabethtown, Pennsylvania

Balkanization

With reference to your article on the Balkans [WQ, New Year's 1984], may I point out that the term "Balkan" is of recent origin. The German geographer Johann August Zeune was the first to use it (1809), but he limited the term's application to the area lying south of the central ridge and enclosing Greece and Macedonia from the north. By 1922, the well-known Serbian geographer J. C. Cvijić realized that it was not a correct regional term nor did it have anything to do with the most important mountain in the region. Therefore, contemporary geographers more and more often use the term "Southeast European Peninsula" or "Southeast Europe." Today, "Balkan" is a term that properly applies only to the arc of the peninsula stretching eastward and forming a continuation of the Carpathian Range south of the Danube.

One minor correction: David Binder says that the Red Army "liberated" the Balkans in 1944 "and install[ed] Commu-

nist regimes in Belgrade, Tiranë. . . ." By agreement with the Red Army and with very little help from it, Yugoslav Partisans liberated Yugoslavia, the countryside as well as Belgrade. Tito's Committee for National Liberation ruled all of Yugoslavia from its traditional capital city. In Albania, the Soviet Union never had much influence. If anyone contributed to installing a Communist regime, it was the Yugoslav Partisans. Albania was something like a Yugoslav satellite in the immediate postwar period.

George W. Hoffman
Professor of Geography
University of Texas at Austin

The passage in question actually employed the phrase "helped install," but Professor Hoffman rightly calls attention to the ambiguity, which crept in during editing. His clearer version of events is correct. For added detail, we recommend to our readers Milovan Djilas's memoir, Wartime *(Harcourt, 1977).*

—ED.

Mistaken Identity

In the periodical review "Discovering Judaism's Mystics" [*WQ*, Winter 1983, p. 29], the last paragraph but one refers to Sabbatai Sevi as "a Palestinian Jew who publicly violated Jewish dietary and other laws." Sevi was not a Palestinian. Rather he lived in Ismir (Smyrna) in Turkey. One of his disciples was Nathan of Gaza (in Palestine), and your reviewer telescoped the false Messiah and his disciple into one person.

Those things do happen to mystics occasionally. Nonetheless . . .

Shlomo Avineri
Professor of Political Science
Hebrew University of Jerusalem

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