

well, institutions like Resources for the Future and the Conservation Foundation, and concerned public figures.

All this adds up to the fact that a really positive and successful program of environmental studies ought to involve a large part of the university, and it ought to spread downward until it contributes heavily to the undergraduate curriculum and influences what is done in the schools.

#### References and Notes

1. L. K. Caldwell, in *Future Environments of North America*, F. F. Darling and J. P. Milton, Eds. (Natural History Press, New York, 1969), pp. 648-671.
2. I owe a debt to C. P. Runge, and to C. A. Engman, R. Bryson, and V. R. Potter (Univ. of Wisconsin) for many discussions of this subject, and for permission to publish this article.
3. At least one graduate dean, on hearing me express this view, says that engineers are as troublesome as the rest of us!
4. I realized this point only after discussion with Bryson and Potter. See also V. R. Potter, *Land Econ.* 38(1), 1 (1962).
5. J. W. Tukey, chairman, and Environmental

- Panel, President's Science Advisory Committee, report, *Restoring the Quality of Our Environment* (White House, Washington, D.C., 1965).
6. K. E. Boulding, in *Future Environments of North America*, F. F. Darling and J. P. Milton, Eds. (Natural History Press, New York, 1966), pp. 225-234.
7. L. B. Johnson, letter of transmittal to the Congress, on Reorganization Plan No. 2, 1965, the United States Weather Bureau. See *Bull. Amer. Meteorol. Soc.* 46, 457 (1965).
8. I compared the two bodies in F. K. Hare, *Geography* 51(2), 99 (1966).
9. K. E. Boulding, in *Future Environments of North America*, F. F. Darling and J. P. Milton, Eds. (Natural History Press, New York, 1966), pp. 291-292.

#### NEWS AND COMMENT

## Education and Health Funds: A Billion Dollar Difference

President Nixon has chosen to use his first veto in a situation supercharged with intraparty politics and questions about national priorities. At issue is a \$19.7 billion appropriations bill for the departments of Health, Education and Welfare (HEW) and Labor which includes \$1.26 billion added by Congress above what the President requested. The Senate gave final passage to the bill on Tuesday; the President earlier declared he would veto the measure.

The White House argues that the extra funds would seriously breach its strategy to fight inflation by controlling federal spending. The opposition in Congress urges that cuts be made in other sectors of the budget, notably military expenditures, rather than in important domestic programs which have borne the brunt of Vietnam austerity measures.

Because of the glacial pace of congressional action last year, the show-down on the bill providing money for fiscal 1970 comes after 7 months of the fiscal year have elapsed and release of the President's budget for fiscal 1971 is imminent. Since the new budget is expected to maintain a tight rein on spending for education and health programs the debate is likely to continue nonstop in the new session.

Even before Congress reconvened, Counsellor to the President Bryce N. Harlow, the White House's plenipotentiary to Congress, estimated that the odds were about even in the anticipated

fight by his congressional opponents to muster the necessary two-thirds majority to override a veto. Harlow pledged an all-out fight by the Administration to have the veto sustained.

This is an election year, of course, and both parties are searching for campaign issues. But the collision is attributable in larger measure to a potentially significant shift of power in the House of Representatives and an impressive performance by an education lobby which has been more cohesive and effective than ever before.

Perhaps the primary political lesson of the recent events is that a broad base of local support for federal-aid-to-education programs has developed nationally and the emergence of this new constituency has drawn a response in Congress, particularly in the House of Representatives.

Discontent in the House over education and health funds boiled over in July when the powerful Appropriations Committee found itself in the unaccustomed position of having more than \$1 billion added to one of its money bills by amendment. Most observers say the uprising would not have succeeded without a lobbying effort representing most subdivisions of American education, organized labor and allies, such as the manufacturers of instructional equipment.

The education lobby can count victories as far back as the National Defense Education Act of 1958, but it was a volatile alliance in the early

years and it exploded in 1962 over the religious issue and over differences between the public-school and higher-education elements of the lobby.

The Commissioner of Education at the time, Francis Keppel, had a lot to do with the process of reconciliation and revitalization of the lobby, and the period of prosperity for the education forces began in 1963 with the passage of the first higher education act. The era was marked by the enactment of landmark legislation in almost every major sector of education. In this period the lobby aimed at the authorization process by which new programs are created. As the costs of the Vietnam war and new social and welfare programs exerted pressure on the budget, the funding of many new education programs was arrested at a modest level; some programs received little more than planning money.

This year, the education forces changed targets and tactics. The key decision was to concentrate on appropriations rather than authorizations. This meant that the size of the pie, not the way the pie was to be cut up, became the question, and the problems of maintaining unity were much reduced.

For the first time a central office with a small staff was set up to coordinate efforts. There have been national committees formed to seek national objectives for education before, but they tended to be ephemeral, letterhead organizations. The new Emergency Committee on Full Funding is headquartered on Capitol Hill and serves as a coordination point for action. The committee's principal staff man is Charles Lee, who was Oregon Senator Wayne Morse's chief assistant on education matters until Morse's election defeat in 1968. Lee not only has an insider's knowledge of Congress and wide contacts in the education community, but also has the advantage of not being

## NASA: Stretching Out Space Program

The National Aeronautics and Space Administration (NASA) enters the first year of its post-moon era with interplanetary tastes but an earth-bound budget. Congress willing, the manned lunar program, originally scheduled for eight more shots by the end of 1972, will be stretched out for 2 years, to 1974. Employment of space workers in government, industry, and the universities will be sharply curtailed. The number of future unmanned planetary probes is being reduced, and only the most tentative steps are to be taken toward NASA's goal of a major post-Apollo program of manned space exploration (*Science*, 26 September). The practical import of the large reductions detailed by Administrator Thomas O. Paine on 13 January is to postpone for at least another year the answer to the perennial question: "Does NASA run a program or a project?"

In a forthcoming statement on the space program, President Nixon is expected to endorse the goal of manned planetary exploration. But there won't be any significant money behind the endorsement, at least in the next budget, and no operative timetable. While details will not be available for at least another week, it appears that NASA's request for fiscal 1971 funds will be trimmed by at least \$500 million, to about \$3.5 billion, the smallest program proposed to Congress in 8 years.

After the world-trumpeted lunar triumphs of 1969, it is understandable if NASA officials are pained at the President's flintiness, which may remind them of the classic political put-down: "What have you done for me lately?" But the space budget cuts (like the expected cuts in defense spending to somewhere in the neighborhood of \$70 billion) may be a sign that Nixon seriously intends to reorder the government's spending priorities to concentrate on domestic, earthbound problems.

Priority within the space program, officials say, will be given in the next few years to unmanned programs and the stretched-out Apollo project. There is to be a greater emphasis than in the past on scientific returns from space activity. Specifically, there will be seven more manned lunar missions at 6-month intervals, with a year's hiatus in 1972. In that year, one Saturn V rocket earlier scheduled for a moon trip will launch a small manned orbiting workshop carrying a large solar telescope. Saturn V rocket production will be suspended and the presently planned manned spaceflight program will come to an end in 1974.

In unmanned space activities, NASA will send two spacecraft to orbit Mars in 1971, launch a Jupiter probe in 1972, fly a single spacecraft past Venus and Mercury in 1973 (not two as earlier planned), and attempt a landing on Mars in 1975 (not 1973 as planned) with a spacecraft carrying life-detecting equipment. NASA will continue work on earth resource technology satellites, meteorology, and communications.

NASA will also take some modest preliminary steps toward achieving a manned planetary exploration capability. The fiscal 1971 budget will propose design work on a reusable space shuttle and on an advanced, modular space station which could provide a permanent workspace for men in earth orbit. But a decision to build them, either simultaneously or in sequence, will be put off for at least a year and possibly longer. The budget will also propose an increase—smaller than NASA wanted—in funds for the joint NASA-Atomic Energy Commission project NERVA, to develop a nuclear space engine for planetary exploration.

As a result of the curtailed space program, employment (including contractors) will shrink from 190,000 at present to 140,000 by 30 June 1971 (peak space employment in the last decade was 420,000). Such projects as biosatellites and scientific data-gathering vehicles are being deferred. And the new Electronics Research Center in Cambridge, Massachusetts, will be closed by June. This closing has already brought cries of anguish from Massachusetts politicians, which may be the first signs of a widespread storm as other space and defense activities are cut back this year.—ANDREW HAMILTON.

identified with any particular education interest.

More than 50 organizations subscribed to the committee's statement of principles ranging from major national entities, such as the National Education Association (NEA), American Federation of Teachers, National Catholic Education Association, American Vocational Association, American Council on Education (ACE), National Association of State Universities and Land Grant Colleges, and the AFL-CIO, to a variety of regional and local organizations.

The Emergency Committee is loosely organized. The larger, Washington-based national associations such as the NEA and ACE apparently are most active on the steering committee and consult with other groups in their sectors. The package containing the \$1.26 billion in added funds was put together on the basis of a consensus of the education organizations. Its contents were based on a hard-headed calculation of what was mutually acceptable to committee organizations and would get adequate bipartisan support in Congress.

The magic ingredient included to appeal to Southern Democrats and Republicans was a big increase in funds for "federally affected areas." These so-called "impacted area" funds are payments to school districts which enroll significant numbers of the children of employees involved in federal operations. The law was enacted to ease the strain on school districts with large federal installations which don't pay local taxes that finance the schools. Critics argue that the impact of earlier years when federal installations were expanding rapidly has been absorbed and also that a large portion of the funds goes to wealthy school districts, like those around Washington, rather than to those with greater needs. Impacted areas funds, however, now go to school districts in perhaps three-quarters of the congressional districts. The funds are built into school budgets and there is widespread and formidable resistance to reductions.

Like every administration in the 1960's, the Nixon Administration has had designs on restricting impacted-areas funds. The Nixon budget called for a reduction of the funds from \$521 million in fiscal 1969 to \$202 million this year. The final congressional version of the money bill raised the ante to \$600 million, nearly \$400 million more than the Nixon request.

Few proponents of federal aid argue that the impacted-areas formula is ideal legislation. But it delivers votes and, repeatedly in the past decade, impacted-areas money has been the bait that hooked a working majority for education bills.

The House coup which amended the HEW-Labor appropriation was stage-managed by younger members not in positions of power in the committee structure or leadership. The action constituted a rare rebuff for the Appropriations Committee which traditionally acts as a legislature within a legislature and it has left the House Democratic leadership in the embarrassing position of ultimately following the rebels' lead. Some see it as a harbinger of change for Democratic leadership when the new Congress meets next January.

Does the incident mean that Congress is really reordering its priorities? Some who participated say the uprising created momentum which caused the House in December to appropriate \$800 million for water pollution control activities for which the President had requested only \$214 million. And the surprisingly easy passage of the bill extending the life of the Office of Economic Opportunity, which seemed headed for dismemberment, is also cited as a related case.

The long-term implications are really not clear. One liberal Democrat, Richard Bolling of Missouri, who is both a partisan of education legislation and a proponent of reform and reorganization of the House, judges the incident as "internally not of enormous significance." He thinks major credit should go to the "education people with an assist from Labor." He suggests that the House acted partly out of "annoyance with the Appropriations Committee," but that the episode does provide "one more evidence of change."

As Bolling and others say, recent events seem to prove that the first creative period of federal-aid-to-education legislation has ended. Federal aid has now become an accepted part of the status quo and therefore has a strong constituency, but the problem of obtaining increased funding remains.

Much the same can be said for health care and medical-research and manpower legislation. The financial difficulties of hospitals and medical schools are now among the concerns of most senators and congressmen and this was reflected in the package of increases Congress added to the HEW-Labor funds. As a matter of fact, the Nixon

Table 1. Comparison of Selected Items in Administration Fiscal 1970 Budget Request and Appropriations Bill (H.R. 13111).

Agency and item	Fiscal 1969	Administration 1970 budget	Conference agreement
<i>National Institutes of Health</i>			
National Cancer Institute	\$185,149,400	\$180,725,000	\$190,362,500
National Heart Institute	166,927,500	160,513,000	171,256,500
National Institute of Dental Research	29,983,500	29,289,000	30,644,500
National Institute of Arthritis and Metabolic Diseases	143,888,000	137,668,000	146,334,000
National Institute of Neurological Diseases and Stroke	128,934,500	101,256,000	106,978,000
National Institute of Allergy and Infectious Diseases	96,840,500	102,289,000	103,694,500
National Institute of General Medical Sciences	163,513,500	154,288,000	164,644,000
National Institute of Child Health and Human Development	73,126,500	75,852,000	76,949,000
National Eye Institute		23,685,000	24,342,500
Environmental Health Sciences	17,820,000	18,328,000	18,328,000
General research and services	84,809,500	69,698,000	76,658,000
Health Manpower	172,176,000	218,021,000	234,470,000
Construction of health educational, research, and library facilities	84,800,000	126,100,000	149,050,000
<i>Health Services and Mental Health Administration</i>			
Hospital construction	258,268,000	153,923,000	258,323,000
<i>Office of Education</i>			
Elementary and secondary education	1,476,993,000	1,415,500,000	1,727,900,000
Instructional Equipment			48,740,000
School assistance in federally affected areas	520,861,000	202,167,000	600,167,000
Education professions development	171,900,000	95,000,000	107,500,000
Teacher Corps	20,900,000	31,100,000	21,737,000
Higher education	700,387,000	788,080,000	871,874,000
Vocational education	248,216,000	279,216,000	488,716,000
Libraries and community services	143,144,000	107,709,000	148,881,000
Education for the handicapped	78,850,000	85,850,000	100,000,000
Research and training	89,417,000	115,000,000	85,750,000
Education in foreign language and world affairs	15,700,000	20,000,000	18,000,000
Research and training (special foreign currency program)	1,000,000	1,000,000	1,000,000

budget carried substantial increases for health manpower and construction of health educational, research, and library facilities. House-Senate conferees further increased these items and topped it off by boosting hospital construction funds by \$100 million (Table 1).

The exploits of the education lobby not unexpectedly stirred efforts at emulation among the health organizations. An Ad Hoc Committee on the Health Crisis made up of professional health organizations and voluntary organizations such as the national heart and cancer societies came into being this summer. There has been a health lobby and a medical-research lobby in the field for years. Especially in the case of the latter, however, summit diplomacy directed at friendly and influential legislators and agency officials generally proved sufficient. Different times require different tactics, however, and the health people seem to be making com-

mon cause with the education forces.

What many people wonder, of course, is whether a durable bipartisan coalition for education and perhaps for health legislation will emerge along the lines of the agriculture, labor, and oil blocs in Congress. An even wilder surmise is that an education-health-environment-poverty bloc could be in the offing.

The immediate concern is the contest over the veto. The Emergency Committee, which urged its supporters to visit legislators at home during the recess, has shifted to a campaign of mail and visits to Washington offices. The White House lobbying effort is also in high gear. Last week in a letter to congressmen, an Administration spokesman, in doleful terms, raised the prospect of offsetting Administration cuts if the veto were overridden and said: "The consequences to medical research, health services, rehabilitation, education

research and a myriad of other project supported activities are obvious."

The contest over the veto will open in the House and probably be decided there. In the vote on final passage in

the House in December the margin was 261 to 110 with 86 Republicans joining 175 Democrats in supporting the measure. Pressure on the Republicans, particularly junior members of the House,

will be intense. They probably hold the fate of the bill. Whatever happens to the veto, however, the new coalition looks like more than a short-lived phenomenon.—JOHN WALSH

## CERN's New Accelerator: Germans Insist on a Site in Germany

*London.* Western Europe has entered upon its own replay of the 1963 pork-barrel politicking that enveloped the high-energy accelerator that the U.S. Atomic Energy Commission (AEC) was forced to locate in Batavia, Illinois. And, to the chagrin of advocates of European cooperation in big science and technology, it is happening at the European Center for Nuclear Research (CERN), which has long stood out as a model of smooth-running, unselfish multinational endeavor.

The Batavia machine, it will be recalled, was designed at Berkeley's Lawrence Radiation Laboratory, with all involved assuming that it would be built in the vicinity of the design group, which was the pattern that had prevailed with all previous accelerators. However, midwestern legislators, scientists, and an assortment of allies drawn from industry and higher education rebelled at the prospect of R & D-rich California receiving still another major federal facility. Citing the alleged paucity of such government expenditure in their own environs, they threatened to block the accelerator in Congress and thus forced the AEC into conducting an unprecedented nationwide site contest. To no one's astonishment, the decision went to Illinois, which, in their more candid moments, the selection committee members acknowledged as having the virtue of being the least unattractive, politically palatable site.

The current CERN situation has its own peculiarities, but the parallels are conspicuous. What it comes down to is that West Germany, which on the basis of national wealth is the largest contributor to CERN among its 12-member countries, has made it

clear that, if the machine does not go to Germany, German money will not go to the machine. Without Germany's 36 percent contribution to the \$340-million venture, the project will be dead, since the original designs were redrawn to a stripped down, economy level after Britain dropped out for financial reasons in 1968.

Germany's demand for the machine turns out, upon examination, to be based on fairly plausible grounds. The fact is that, because of her wealth, she puts the most money into Europe's cooperative endeavors but, because of her past, very little of this contribution ends up on German soil. Barred during the occupation from conducting research related to atomic energy, rocketry, electronics, and various other fields, the Germans kept alive in these areas by becoming great international cooperators, even at the cost of their money and talent going abroad. When the occupation restrictions were lifted, many institutions and patterns of cooperation were fairly well established, and, to take part, the Germans continued to send their money and talent abroad. Furthermore, to allay the suspicions of her neighbors, she continued to abstain from certain fields. Most recently, for example, Germany contracted to join Britain and the Netherlands in the construction and operation of centrifuge plants for uranium enrichment, but, with full German agreement, the plants will be on British and Dutch soil. Only the administrative headquarters of the consortium will be located in Germany, which considers it prudent for neighborly relations to be short of self-sufficiency in nuclear matters.

For years it was also considered

prudent in Germany to avoid anything that smacked of old-time nationalism or self-assertion, and, as a consequence, Germany quietly bore a heavy share of the costs for such organizations as Europe's space-research and launch-vehicle agencies, Euratom and CERN. The first respectable outcroppings of resentment occurred when German researchers requested that German be added to English and French as the official languages of several or Europe's international bodies. In support of this request, they cited the scale of Germany's financial contributions. German legislators, concerned about the rising costs of research and the heavy proportion of such funds going abroad, took up the case, and, as a result, German is now acknowledged as an equal language in some organizations, though often with an understanding that to hold down translation costs, it will be less equal than others, unless there is a compelling reason to reproduce everything in German.

Such treatment, with its implication that Germany is still not sufficiently cleansed of war guilt to be accorded equal status in all matters, was more or less tacitly accepted until last September's election produced a change of government. Since then, Germany has been moving away from the image of "an economic giant and a political dwarf," and, though high-energy physics is an obscure issue for symbolizing such a movement, the decision to insist on a German site for the new CERN accelerator—taken at cabinet level—is probably as good an indication as any of the political confidence of the new Germany. As one German official described it, "A new generation has arrived. We don't feel any war guilt and there is no reason why we should. We want to put a seal on the discrimination of the past, and the CERN accelerator is a good and visible means of doing that."

The site offered by the Federal Republic is at Drensteinfurt, in northern Germany, near Münster. The inevitable brochure, like all brochures issued by accelerator-hungry regional