

tion to urban centers but reverse it." In particular, he added, the Federal Government must "assist in the building of new cities and the rebuilding of old ones."

The Administration is not in a hurry to work out the details of a plan for redistributing the population. Nevertheless, says James L. Sundquist, a senior fellow in the division of governmental studies at the Brookings Institution, "no other President has given the idea so much attention." Any such plan, he points out, is bound to involve a heavy investment of Federal money and authority: "It all depends on the Government, and the population problem is of such magnitude that we'll be lucky if we can even slow down the present migration from rural areas to cities, let alone reverse it."

In view of the obvious difficulty of combining a reduction of Federal influence with an increase in national social programs, many observers have already concluded that Nixon's commitment to a new Federalism is mostly rhetorical, as were similar commitments by his predecessors. "A lot of people are unhappy with the idea of Federal control," says Dr. Robert Tufts, an Oberlin College economist, "so 'new Federalism' is a phrase that sounds good."

**What it may end up as** is a sharing of Federal revenues with the states, and no more.

Administration economists, says Dr. Tufts, are interested in financing welfare programs through revenue-sharing, a process whereby the Government would turn over Federal tax revenues in lump sum to local governments. Such a program would presumably augment the power as well as the financial resources of city halls. "If the new Federalism means anything," he says, "it means revenue-sharing."

Even if revenue-sharing becomes an integral part of the Administration's social policies, it is by no means certain that the result will be a relaxation of Federal control. In fact, says Dr. David G. Tuerck, an economist at the University of Illinois, the result may be just the opposite. Revenue-sharing, he points out, involves consolidating the present Federal grant programs into one large program.

"Such a consolidation means that revenue-sharing may give the Government an even more powerful lever for influencing the states," Dr. Tuerck says. "Instead of threatening to remove a few small grant programs, Federal authorities could threaten to remove the entire program." Like almost every other social program the Government attempts, he suggests, revenue-sharing may wind up as another magnification of Federal authority.

## WATER POLLUTION

### Dollars and doubts

Since taking office, President Nixon has appeared to come out foursquare in support of cleaning up the environment, and the nation has been waiting to see if money—and regulatory muscle—will match the strength of his public statements. Last year he formed the Committee on Environmental Quality, a cabinet group to report to him on matters relating to the environment. On Jan. 1 of this year, he signed the Environmental Quality Act, which set up an executive office to do the same thing. But the tension-filled wait for the other shoe to drop continues unabated.

Nor was it eased last week, when in his State of the Union message to Congress, the President again appeared to declare war on the nation's rank air, festering water and despoiled landscape. For the most part, he spoke in generalities, without specifying his plans of attack.

Except for water pollution. Here he was a little more, but, as it turned out, not quite specific. He announced a proposal to spend \$10 billion in a five-year program for the construction of sewage treatment plants. After a week of second-guessing by nearly everyone concerned, including legislators and the Federal Water Pollution Control Administration itself, it was still unclear whose money it was that he was talking about.

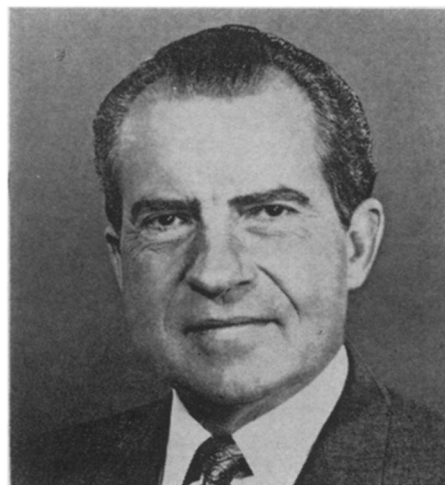
**At first it seemed** that \$10 billion in Federal money would be out of the question. It was thought that the Administration, through the Federal Water Pollution Control Administration, would supply \$4 billion and the states and local communities would be left to their own devices to come up with the other \$6 billion.

But then Secretary of the Interior Walter J. Hickel threw a monkey wrench into the idea when he declared that it would be a \$10 billion Federal program." He added, ". . . it's going to be our contribution to the total problem."

Hickel's statement, indicating that the Government would foot the entire bill, apparently scuttled the notion that the Federal and local agencies would be sharing in the program. But others are not so sure.

"I still think what will come out will be the Hickel bond plan," says one skeptic.

That plan, which has been snubbed by the Treasury Department and the Council of Economic Advisers, to name a couple, would require that the states and municipalities float bonds to pay for their share. Despite the snub, it seems to be still alive within the Ad-



*Nixon: \$10 billion from whom?*

ministration.

A problem with the plan is that most states have reached and even exceeded their constitutional debt limits, the amount of money the state constitutions permit them to owe. In addition, the bond market is in bad shape and not likely to improve.

**The White House** further deepened the mystery of how the program would be paid for by saying a "new method of financing" would be used.

This prompted one Federal Water Pollution Administration official to say, "If that's the case, then they must have come up with something different. I'm baffled."

And he is not alone. Sen. Hugh Scott (R-Pa.), who will submit the actual Administration bill for the \$10 billion program, has said that the polluters must pay, indicating that some kind of prorated effluent tax might be proposed. Tax relief for the construction of industrial pollution control facilities has already been enacted (SN: 12/27, p. 589), and the two ideas often go hand in hand.

Even Scott's office was in the dark as to what would emerge. All one staff member could say was that "the final legislative details were not hammered out . . ." and that representatives from Congress and the Department of Health, Education and Welfare and the Department of the Interior were working out the details.

Although the mystery should be thoroughly cleared up when Mr. Nixon gets through delivering his budget and environmental messages to Congress, there will still be one important question unanswered: Will the \$10 billion be enough?

Sen. Edmund S. Muskie (D-Me.), chairman of the Senate Subcommittee

on Air and Water Pollution and author of the bulk of the existing body of pollution control law, doubts it. He puts a \$25 billion price tag on cleaning up water pollution in the next five years.

"I look forward to reviewing the President's environmental message and his budget to learn the extent of his commitment," said the Senator, but added, "expressions of concern and urgency will not restore the quality of the environment; action and money will."

In fact, Muskie regards the Nixon plan as doing less than the present 1966 Clean Water Restoration Act, by which Congress authorized \$3.5 billion in grants over a 4-year period. Assuming a \$4 billion Federal outlay in the Nixon plan, the Administration would thus be spending on an average over nine years under \$400 million a year. (Although the program would be for five years, the Government's payments would be made over nine years, which strengthens the bond redemption suspensions.) This compares with an average of slightly less than \$900 million under the 1966 Clean Water Restoration Act, which expires in 1971.

Although Mr. Nixon did promise "to put modern municipal waste treatment

plants in every place in America where they are needed to make our waters clean again . . .," critics question his sincerity. They point out that he only asked for \$214 million to construct waste treatment facilities this year, and it was Congress that upped the figure another \$586 million (SN: 11/15, p. 448). The President gave no indication in his address that he would spend this additional money, however, and because of this, there is a real worry about its fate. Says one Senate source, "From what we've heard, they're not anxious to give it up."

In a related development last week, the National Academy of Sciences and the National Academy of Engineering proposed a broad national program to manage the environment. Nine proposals were suggested, calling for the establishment of a Board of Environmental Affairs within the office of the President, a comprehensive Federal program for monitoring the environment, a national research laboratory for the environmental sciences, an environmental education program in secondary schools and environmental study and work programs at the university level. □

Wheaton H.S., Wheaton.

■ Massachusetts: Steven Richard Eastaugh, Newton South H.S., Newton Centre.

■ New York: Paula Traktman, Midwood H.S., Brooklyn; Joseph Jonathan Buff, Far Rockaway H.S., Far Rockaway; Karen Hopenwasser, Far Rockaway H.S., Far Rockaway; Manoug Ansour, Forest Hills H.S., Forest Hills; Eliot Marc Gelwan, Forest Hills H.S., Forest Hills; Tsutomu Inagaki, Jamaica H.S., Jamaica; Mitchell Craig Begelman, Bronx H.S. of Science, New York; Michael Alan Fifer, Bronx H.S. of Science, New York; Esther Ming Hu, Bronx H.S. of Science, New York; Jeffrey Ng, Bronx H.S. of Science, New York; Jonathan David Victor, Horace Man H.S., New York; Robert A. Levine, Ramaz School, New York; Alan Jay Dubin, Yeshiva University H.S., New York; Lee Robbins, Martin Van Buren H.S., Queens Village.

■ Ohio: Joyce Helen Montwieler, Magnificat H.S., Rocky River.

■ Oklahoma: Kent William Randall, Memorial H.S., Tulsa.

■ Pennsylvania: Ronald Lee Amey, William Allen H.S., Allentown; Peter Elliot Friedland, William Allen H.S., Allentown; Kirk Alfred Shinsky, Louis E. Dieruff H.S., Allentown; Betsy Harris, Philadelphia H.S. for Girls, Philadelphia.

■ Texas: Sharon Lee Reed, Stephen Austin H.S., Austin; Charles Howard Bowden, Highlands H.S., San Antonio.

■ Vermont: William Peter Parker, Harwood Union H.S., Moretown. □

## TALENT SEARCH

### Forty Winners

Forty students, judged the nation's most scientifically talented seniors, were named winners in the 29th annual Science Talent Search. The winners, representing approximately 1.9 percent of those who completed entries in the competition, will receive a total of \$67,500 of Westinghouse Science Scholarships and Awards.

The Science Talent Search is designed to discover and develop scientific ability among high school seniors. It is conducted annually for Westinghouse Educational Foundation by Science Clubs of America, a function of Science Service, Inc.

Eleven girls and 29 boys will receive an all-expense trip to Washington, D.C., Feb. 25 through March 2, at which time they will attend the Science Talent Institute. There the board of judges will select 10 top winners to receive Westinghouse scholarships, which include one award of \$10,000, two of \$8,000, three of \$6,000, and four of \$4,000. Awards of \$250 each will be granted to the remaining 30 students.

The winners, ranging in age from 15 to 18 years, represent 28 cities in 15 states and the District of Columbia. Of 19,952 contestants, 2,075 completed their entries by taking an aptitude examination, obtaining recommendations and writing a report on their science

project. Completed entries were received from 50 states and the District of Columbia.

By state, the winners are:

■ California: Cindy Blifeld, Hollywood H.S., Hollywood; John William Winslow, Oceanside H.S., Oceanside.

■ Connecticut: Thaddeus Paul Kochanski, F. U. Conard H.S., West Hartford.

■ District of Columbia: Judith Sharn Rubin, Woodrow Wilson H.S., Washington.

■ Florida: Larry Joe Morell, Nova H.S., Fort Lauderdale.

■ Georgia: Sue Ann Billingsley, Briarcliff H.S., Atlanta.

■ Illinois: Charles Andrew Czeisler, Thornridge H.S., Dolton; Rhonda Lauren Ellman, Highland Park H.S., Highland Park; Bradford Blair Walters, Highland Park H.S., Highland Park; James Robert Litton Jr., Oak Lawn Community H.S., Oak Lawn; Dennis James McLeod, Niles Twp. H.S. West, Skokie; Robert Kenneth Zeman, Niles Twp. H.S. West, Skokie; William Robert Dolson, Loyola Academy, Wilmette.

■ Iowa: Christine Anne Padesky, Marshalltown Community H.S., Marshalltown.

■ Kentucky: Douglas Charles Rees, Tates Creek H.S., Lexington.

■ Maryland: Lawrence Charles Fritz,

## AERONOMY

### A new national facility

The ionosphere is the portion of the earth's thin upper atmosphere that begins about 50 kilometers up and is composed in large part of free electrons and their accompanying positive ions. It is crucial to life on earth because it screens out ultraviolet and X-radiation from the sun.

The most powerful new technique for studying the ionosphere from the ground is known as incoherent-scatter radar. In this method radar waves are reflected by irregularities in the density of the electrons in the ionosphere. The returned signals contain a rich variety of information about the composition and dynamics of the upper atmosphere.

The practicality of the technique was verified in 1958, and the first major facilities were established beginning in 1963. Six are now in operation, including the Arecibo Ionospheric Observatory in Puerto Rico. The others are the Millstone Hill Ionospheric Radar in Massachusetts, the Stanford Research Institute unit in California, and in-