

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-

stallations in Peru, England and France.

Last week a study group of the National Academy of Sciences concluded a look at needs in ground-based solar-terrestrial research. It recommends, as highest priority, the construction of a new \$12 million incoherent-scatter radar facility at some point in the northern continental United States. It would be more advanced than the existing facilities, developing the method to its full capability.

The radar would measure plasma motions both along and across the earth's magnetic field, leading to a wide range of information about the dynamics of the ionosphere and magnetosphere.

The facility would probably consist of one large radar station and perhaps three separate receiving stations. The group proposes that it be operated as a national—perhaps international—center for aeronomy, the science of the upper atmospheric regions where dissociation and ionization are important.

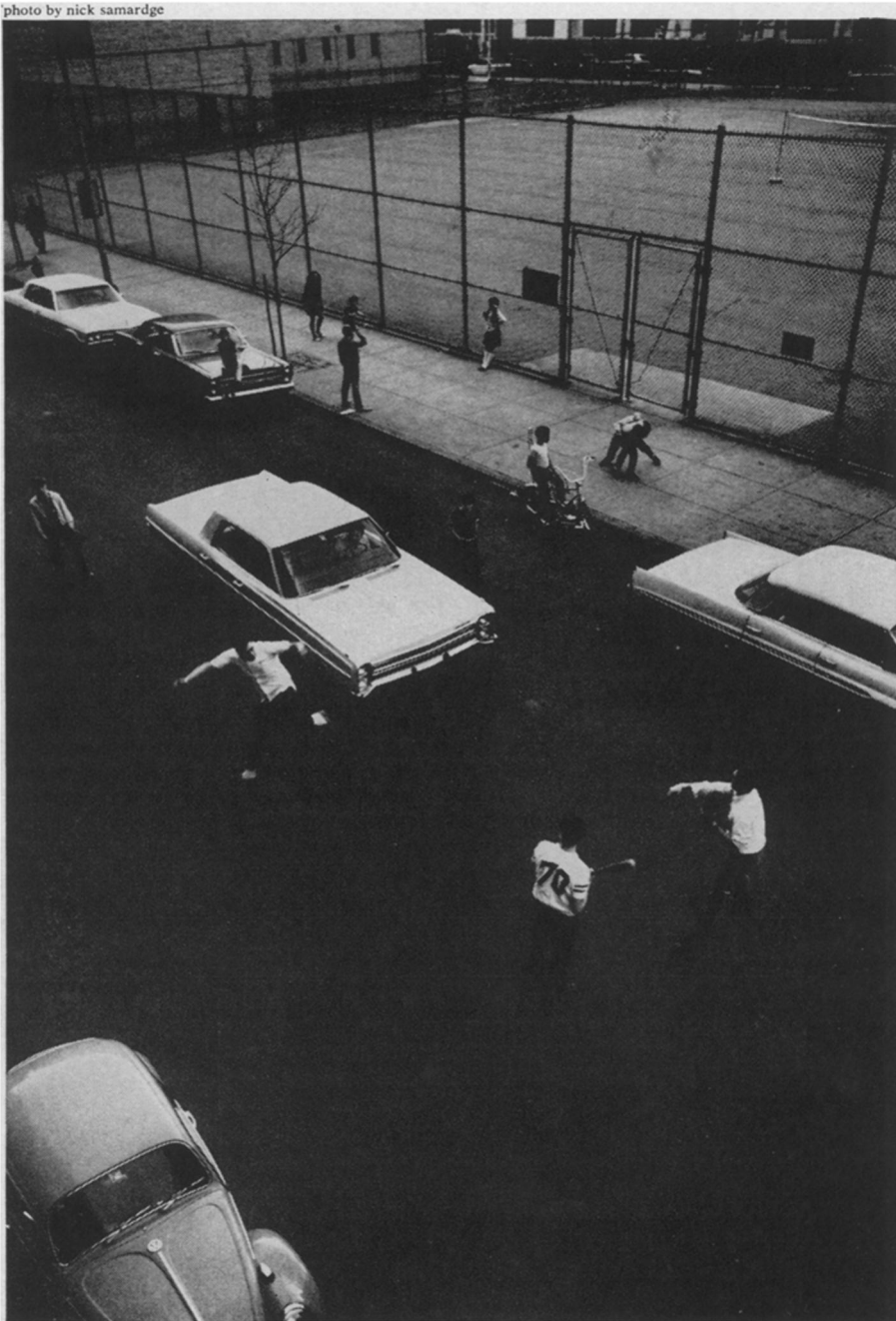
Locating the radar near the United States-Canadian border would put it at a point where a particularly important magnetic line of force touches the surface of the earth. At the geomagnetic equator the line extends four earth radii out in space. The line marks an abrupt transition in the upper atmosphere to lower ionization densities. Evidence seems to suggest that at the boundary the source of the ionization changes from solar radiation to solar wind particles that have penetrated the earth's magnetic field.

Washington officials, in this time of budgetary confinement, are not likely to be boundlessly enthusiastic about the proposal. Dr. Herbert Friedman of the Naval Research Laboratory, chairman of the NAS Committee on Solar-Terrestrial Research, which carried out the study, agrees that the topic comes up at the wrong time. But he points out that members of each scientific specialty have a responsibility clearly to identify and justify what they feel their needs are.

The proposed radar center is the main new facility recommended by the group, but the scope of the study report is much broader. It offers a number of suggestions for making better use of existing facilities, instruments and methods in areas ranging from solar astronomy to the study of whistlers. These are very-low-frequency radio noises originating from lightning discharges. They are invaluable tools for studying the magnetosphere.

The report suggests that a VLF transmitter facility be established in the Antarctic for magnetospheric measurements. In addition, it proposes development of four new types of ground instruments, including a new scanning radiometer to observe the sun. □

photo by nick samardge



This is crazy.

In this country, there are thousands of places built for kids to play in.

Ironically enough, most of the time most of them are kept locked up. And the kids kept locked out. (Not enough money for sports and recreation supervisors is the usual excuse.)

So the street becomes the ballfield. And the kids have to play with one eye on the ball and one eye on the cars.

The situation makes so little sense, you'd think someone would do something about it.

Which is just what we're asking you to do. Not to give any money, not even

your time, but just to make a telephone call or two to the school officials in your area.

Ask them to give the streets back to the cars. The recreation areas back to the kids.

And if things work out that way, you might even want to stop by and show the kids a thing or two yourself.

You'll not only do them some good; you just might do yourself some.

For information, write: President's Council on Physical Fitness and Sports, Washington, D.C. 20201.

Don't fence them out.

The President's Council on Physical Fitness and Sports.