used for long-distance communication, this in effect opens a new band for long-distance use.

The equipment at each of the two widely separated ground stations employs many of the recently developed computer, or "electronic brain," techniques. When the circuit detects a suitably located meteor trail in the upper atmosphere, the message previously stored at one station is transmitted automatically and rapidly to the other end of the circuit.

Because each meteor can be used only for about a second, transmission must take place in short bursts at very high speeds. The actual transmission speed is much too high to be received by standard teletype equipment. The incoming information, therefore, is held in storage and printed at normal speeds during the intervals between transmission bursts.

This high-speed "burst" transmission technique and the frequent presence of meteors in the upper atmosphere permit the passage of lengthy messages between stations in a relatively short time.

Because the signals reflected from the trails are largely independent of ionospheric conditions, such as disturbances caused by the aurora borealis, meteor trail transmissions will be particularly valuable for Canada with its vast distances in the aurora belt.

Tranquilizing Drugs and Behavioral Disorders

The behavioral disorders that commonly afflict mentally retarded children —ranging from destructiveness and breath holding to psychogenic vomiting and teeth grinding—have responded in many cases to treatment with tranquilizing drugs, particularly chlorpromazine ("Thorazine") and meprobamate ("Miltown"), according to a report in the June issue of the *International Record of Medicine and G. P. Clinics,* by I. N. Kugelmass, consultant to the Departmet of Health and Hospitals, New York City. The degree of relief varied with the type of disorder, but the two drugs were of value in from 40 to 80 percent of the cases in most disorders.

Meprobamate appeared to be more effective in relieving teeth grinding, nail biting, head banging, tics, phobias, anxiety, destructiveness, and sleeplessness. Chlorpromazine proved more helpful in relief from vomiting and abnormal appetite, restlessness, lip sucking, hyperactivity, anger, cruelty and aggression, negativism, sleepwalking, and night terrors.

Kugelmass emphasized that the drugs are not cures, that they "merely suppress the overt manifestations without eliminating the underlying pathology."

The study involved 250 mentally retarded children, treated individually and in institutions over a 5-year period. Ten drugs in all were evaluated for their effectiveness in treating 25 spearate symptoms, but only chlorpromazine and meprobamate were effective in relieving most of the symptoms.

Irrigation and Power in Australia

According to the National Geographic Society, a major irrigation project is under way in New South Wales, Australia. The Snowy River, which drains the Snowy Mountains of the Australian Alps and flows south to empty into the South Atlantic at a rate of 0.5 million gallons per minute, will be diverted through the mountains by means of a network of dams, tunnels, and canals, so that it will feed into the Murray and Murrumbidgee rivers, which flow through the arid plain northwest of the Snowy Mountains. The latter rivers are already being used to the maximum for irrigation. When the project is completed, it will consist of seven major dams, ten smaller dams, 85 miles of mountain tunnels, and 400 miles of canals.

It is expected that the entire construction project will require about 20 years, The system, when completed, will provide annually some 2,333,000 acre-feet of water for irrigation and about 3 million kilowatts of electricity for power. The latter will be developed by 17 power stations, some of which will be fed by water passing through penstocks that will pass vertically through as much as 1000 feet of rock.

Scientists on TV

Scientists from Harvard University and Massachusetts Institute of Technology will take part in a filmed series of 23 television programs designed to introduce viewers to the scope and methods of physics, chemistry, astronomy, and geology. The films are for national distribution to educational TV stations.

The series has been organized by Philippe LeCorbeiller, professor of general education and of applied physics at Harvard University. It will be produced by the Lowell Institute Cooperative Broadcasting Council in the studios of WGBH-TV, channel 2, Boston, under contract with the Educational Television and Radio Center, Ann Arbor, Mich.

Each program will focus on a single idea essential to an understanding of modern scientific thinking. The presentation will include experimental demonstrations and graphic illustrations. Some of the topics will be: "Science and common sense"; "The size and age of the universe"; "Are atoms real?" "How science grows"; "Nature and the laboratory"; and "The role of scientific imagination."

"My objective in giving this series on TV," LeCorbeiller points out, "will be to try to bridge the gap between the scientists and the public. It is out of the question to inform everybody about the endless intricacies of laboratory science. It is all the more important to find some way of making the American public a partner in the never-ending conquest of the unknown. The ideal way for that is television."

LeCorbeiller will be joined in the presentation of the programs by Gerald Holton, Leonard K. Nash, I. Bernard Cohen, Bart J. Bok, Harlow Shapley, Kirtley F. Mather, all of Harvard, and Sanborn C. Brown of Massachusetts Institute of Technology.

Laboratory for Gulf Fisheries

Problems related to finding, catching, and processing Gulf of Mexico fish and shellfish will be studied at the new fishery laboratory that is to be constructed this year at Pascagoula, Miss., for the U.S. Fish and Wildlife Service. The contract for the construction of the new laboratory and auxiliary buildings has been awarded to the Oden Construction Company of Hattiesburg, Miss., for $165,000. Engineers of the service's regional office in Atlanta, Ga., will exercise general supervision of construction.

Research on methods and techniques for providing the highest quality pack of shrimp, oysters, tuna, and other South Atlantic and Gulf seafoods will be one of the main tasks of the new laboratory. Heretofore technologic work for the Gulf and South Atlantic areas was handled through the service's laboratory at College Park, Md.

The new installation will provide facilities for the exploratory fishing and gear development program that is already being conducted in the Gulf area. The service's exploratory fishing vessel *Oregon,* which operates in the Gulf of Mexico, is based at Pascagoula in connection with this program.

Irregular Milking Schedule

According to a report to the *New York Times,* studies carried out during a period of 2 years at the Ruakura Animal Research Station in New Zealand show that carefully matched herds of cows produce as much milk and butterfat per day when they are milked at 16- and 8-hour intervals (at 8 A.M. and 4 P.M.) as when they are milked at the