

any true local linkup between the brain drain, the technology gap and nuclear technology. To be sure, the Tokyo Government, more for political than for scientific reasons, has major reservations, toward the envisioned atomic non-proliferation treaty, which might, potentially, deprive this workshop nation of capability in nonmilitary nuclear-technology areas.

Although Japan is in embryonic stage in this industry of the future, it is laying solid careful plans, and has reactors in operation, others building, and ample plans to ensure adequate nuclear fuel.

Japanese are not yet in active demand for nuclear industry overseas, and thus are free, for the time being, to concentrate on progress in this country. But the time will come when advances in this field parallel Japanese progress in less difficult fields of industry. Then the foreign university, the overseas agency, the alien institute, and the foundation abroad will seek, and be willing to pay, for Japanese talent.

At that time, too, Japan might be in a position, far more than it is today, to want to hold its own nuclear savants here at home. For by that time, with nuclear weapon proliferation, Japan which even now has the technology, the funds, and the personnel to build a bomb, might feel it had to do so to ensure the nation's sovereignty. Then, any brain drain would be damaging. But not yet.

**What can Japan do** to halt such brain drain as there is? "In Japan," says famed Dr. Kentaro Yano of the Tokyo Institute of Technology, "a young assistant can never hope for promotion to a professorship no matter how talented he is, how brilliant his achievements. In contrast, such a person would be invited to be a full-fledged professor at an American university, and treated as such regardless of his age, family and connections."

In Japan, too, the young scientist faces this handicap—his hard work, his accomplishments are preempted by the department head, an older man with full seniority, and then presented in public not as the work of the young man, but of the old.

Stuart Griffin

FROM SWITZERLAND

## World Health: Bad

Dr. Marcolino Gomes Candau, director general of the United Nations World Health Organization in Geneva, says "massive assistance is urgently needed" if the yawning gap between the rich and poor countries is not to cause catastrophe.

He prepared his annual report for the 20th World Health Assembly now

running near the rooms occupied by the non-proliferation treaty delegates (SN:5/13) and the Kennedy Round trade tariff negotiators.

The 56-year-old Brazilian, trained in Rio and at Johns Hopkins University, took the job in 1953. He coordinates the efforts of 1,500 people in the new headquarters building and hundreds of other doctors and workers in 127 nations and territories.

**Dr. Candau** blames the health gap for the failure thus far of many outstanding international health and medical campaigns.

"The same two factors that impair general national development cast their shadows on public health," he declares. "These are the inability or unwillingness of the more fortunate countries to adjust their aid to the real need of developing countries, on the one hand. On the other, political instability, administrative inefficiency and lack of planning and personnel, emasculate much of the aid that is given."

| Contributors to WHO | Budget |
|---------------------|--------|
| United States       | 31.20% |
| Soviet Union        | 13.30% |
| Canada              | 7.83%  |
| West Germany        | 6.61%  |
| United Kingdom      | 6.43%  |
| France              | 5.43%  |
| Taiwan              | 3.79%  |
| Japan               | 2.47%  |
| Italy               | 2.26%  |

(His first reference, informed observers point out, is not so much to the U.S., which pays 31 percent of all WHO dues and must avoid the embarrassment of more open contributions by informal gifts, nor to the Soviets, who pay 13 percent. Some Western European countries, professionals feel, could do more than they are doing.)

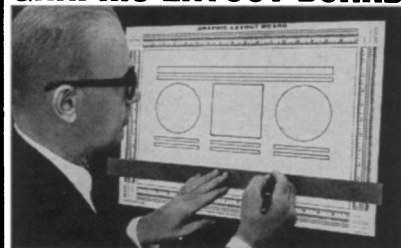
The UN agency made "disappointingly little headway" last year in such major programs as the long-standing malaria eradication effort. Many African states are still hardly started and some Asian countries that had done well are slipping back.

"So long as many countries do not have their own qualified professional personnel, international assistance will not achieve its objective and even the most carefully planned and carried out projects will not justify the sacrifice of men and material," Dr. Candau warns.

WHO supported 1,276 projects in 52 nations last year. Large amounts of external aid are especially needed by Africa, where there were 174 projects in 35 countries below the Sahara. The emphasis is on communicable or infectious diseases: malaria and small-

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pox, sleeping sickness, schistosomiasis, measles, and yaws. Malnutrition, reportedly rising in fast growing towns, is being fought with rehabilitation centers for small children.

Things looked better in the Americas, where 391 projects helped 32 countries. Twenty have adopted national health planning and are integrating such plans into overall development, including new housing, schools, water and sewage treatment and other schemes, as Dr. Candau recommends.

To illustrate the dangers when public planners, engineers and doctors don't coordinate, Dr. Candau reports that many of the thousands of irrigation and dam schemes have only brought more disease. Snails that carry schistosomiasis, already infecting about 200 million people, often thrive in badly engineered waterways (SN: 4/1).

In Southeast Asia, WHO had 154 projects, emphasizing, as elsewhere, the training of personnel from auxiliary worker to postgraduate physician. The western Pacific had 123 projects.

Europe received 162 projects in 31 countries, highlighting chronic and degenerative diseases—heart and cancer—highway accidents and environmental hazards such as pesticides.

Sanitation, especially new community water supply, featured the program in the eastern Mediterranean, where 20 countries were helped with 210 projects. Cholera has been raging through the Levant.

David Alan Ehrlich

FROM GERMANY

## Lab Fights Birth Defects

As a result of the thalidomide disaster, the West German Research Society will set up an ultramodern laboratory in Freiburg to test chemical substances that might cause birth defects.

The initial budget, less than a million dollars, allows for a staff of 25 scientists and technicians who will routinely check several hundred chemicals annually. Some substances used in foods, cosmetics and drugs are suspected of contributing to defects in children.

The compounds will be tested on bacteria, fungi, fruit flies and human tissue cultures. The Research Society hopes the lab will produce test methods that can be adopted by pharmaceutical laboratories.

After several years of investigation of the thalidomide scandals, in which the drug, administered to pregnant women, caused birth defects in their children, several officers of the pharmaceutical firm that made the drug have been indicted. Their trial is still several months off.

# Nature Note

## Foehn

In certain mountainous regions, a hot, dry, violent wind, different from any other, drives down the slopes. This is the foehn, a wind that can raise atmospheric temperatures 31 degrees in three minutes, melt deep snow in a few hours, ripen grapes and corn, give people headaches and nervous disorders, split wooden walls and floors and engulf hillsides and towns in fire.

Unlike other warm winds, the foehn (pronounced fern) does not gain its warmth from direct rays of the sun or contact with warm surfaces like desert sands or tropical oceans. The foehn generates its own heat—by compression. According to the basic physics, when air or a gas expands, it becomes cool; when compressed, it heats up. A foehn starts when the wind, flowing from an area of high pressure into one of low pressure, is blown up the windward side of a mountain. As the air rises, it becomes cooler, dropping its moisture in the form of rain or snow, then curls over the mountain crest and flows down the other side. As the air

descends to lower altitudes, it becomes compressed and heated at a rate of 5.5 degrees F. for every 1,000-foot drop, arriving in the leeward valleys as a warm, dry wind.

Foehns were long a mystery in the Alps where they were first noticed. Many people thought they were hot winds driven from the Sahara Desert across the Mediterranean. Now this type of wind has been recognized in many different countries, where they go by various names. In the United States such a wind is common along the eastern slopes of the Rocky Mountains, where it is called by the Indian name, Chinook, or "snow eater." The dreaded foehn called Santa Ana drops through the Cajon and Santa Ana passes in southern California, sucking moisture from the land and causing severe fires. Foehns are called Zondas in Argentina and southern Chile where they blow down the slopes of the Andes Mountains; Bohoroks in Sumatra, and Warm Braus in the Schouten Islands of the South Pacific.

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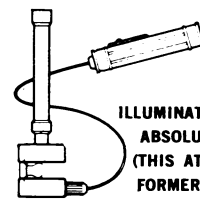
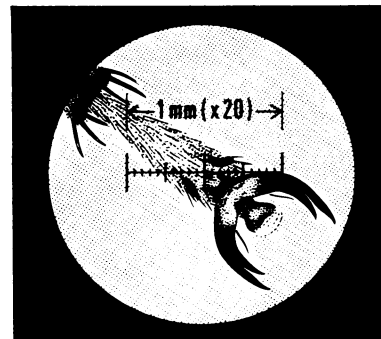
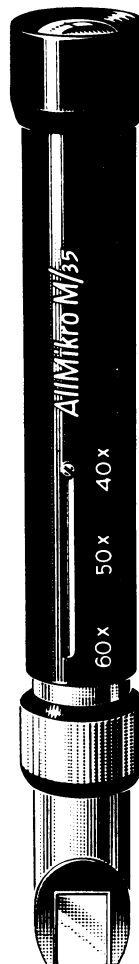
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