

## GENERAL SCIENCE

**Diamond Tool Mounting Saves 90% of Crystal**

➤ A NEW way of mounting diamonds in cutting tools will save up to 90% of these hard, precious industrial stones.

Dr. H. Tracy Hall of the General Electric Research Laboratory mounts a small diamond in a shallow cavity on the surface of a wheel-dressing tool. Heretofore, as much as nine-tenths of the costly diamond had to be buried in the mounting to hold it securely.

Titanium hydride is used as a wetting agent for a silver-copper solder and the mount and diamond are brazed by induction heating in high-vacuum, or in an argon or hydrogen atmosphere.

Dr. Hall is one of the team that recently announced the making of synthetic diamonds.

Science News Letter, April 2, 1955

## MEDICINE

**Spot TB Patients Who Will Quit Hospital Early**

➤ A MEANS for predicting which patients entering a tuberculosis hospital will stay in the hospital long enough to get the good from their treatment has been developed by a group of scientists at the Veterans Administration Hospital, Houston, Texas.

Every year, almost half of all patients in tuberculosis hospitals leave the hospital against medical advice, the scientists stated in the *Journal of Consulting Psychology* (Feb.).

In fact, they said, medical treatment for this disease is now so effective that when a patient fails to recover it is generally because he cannot or will not stay in the hospital long enough to get well.

It is not just the personality of the patient that makes him willing or unable to endure hospitalization, the investigators concluded.

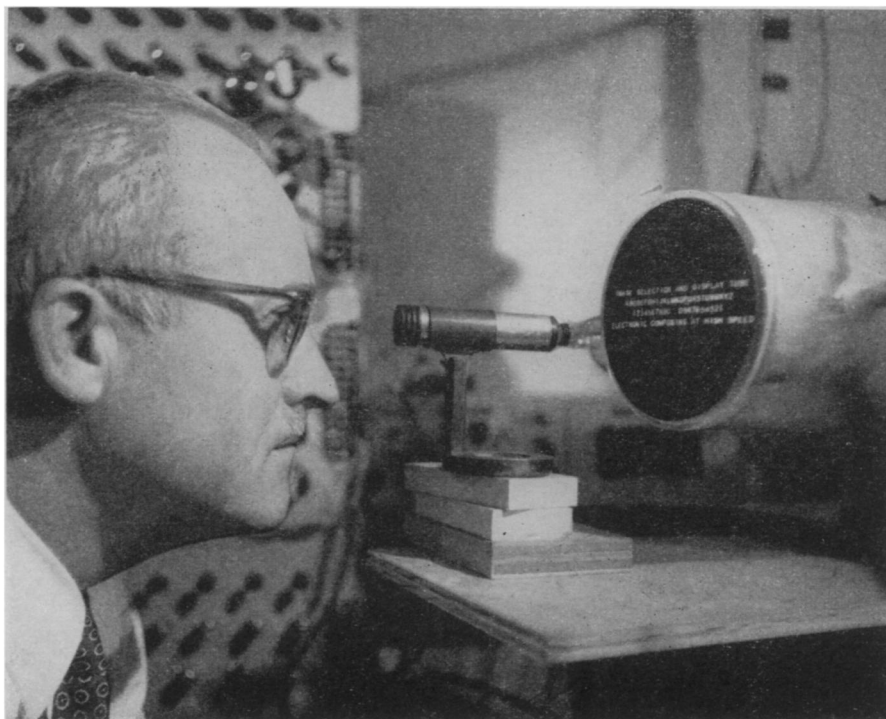
Factors in the patients' history so important that information about them makes it possible to spot which individuals will stay for treatment and which will take unadvised leave include such items as whether or not the patient has a "service-connected disability pension," and the duration of his illness.

Items that turned out to be of no help in making a prediction were found to include war service, race, marital status and size of family.

The scientists were able to make up a scale with which those entering the hospital can be placed into groups with similar chances of staying or quitting. Such a scale makes it possible to study and compare quitters and stayers while they are still in the hospital.

Scientists who made the report are Drs. Louis J. Moran, George W. Fairweather, Robert B. Morton and Laurence S. McGaughan.

Science News Letter, April 2, 1955



**TRANSLATES CODES** — New electron image tube device takes coded signals from tape, keyboard or radio and projects the messages in clearly defined letters. Warren H. Bliss watches the device, which was developed by RCA, in test operation. It can translate at a rate of 100,000 words a minute.

## MEDICINE

**Typhoid Fever Yields**

➤ GOOD RESULTS in treating typhoid fever with a new antibiotic drug, or so-called mold remedy, were reported in the *Journal of the American Medical Association* (March 19).

The new antibiotic is called synnematin B and comes from an organism called *Tilachlidium*.

It was given to 16 children, aged two and a half to 11 years, at the Hospital Infantil in Mexico City. Most of the patients were poorly nourished and three of them had very severe cases of typhoid. Nine had severe cases and four moderate.

Regardless of the day of sickness on which treatment with synnematin B was started, the temperature returned to normal, the toxic state was relieved, appetite increased and mental alertness improved in two to six days. In addition, the little patients showed pronounced improvement in general well-being.

The patients all recovered and none had any intestinal bleeding or perforations, which are dreaded complications in severe typhoid fever.

Three patients had relapses after the drug was stopped. Two of them had been getting the medicine before the best dosage had been established. Chill was the only reaction to the drug, and this was reduced when a different lot of the drug was used.

The typhoid fever germs were cleared from the blood and the intestinal wastes. None of the patients was a typhoid carrier so far as tests showed three months after recovery. The doctors think the new antibiotic drug kills the germs instead of just stopping their growth, as some antibiotics do.

Chloramphenicol (Chloromycetin) has been the drug of choice for treating typhoid fever. This antibiotic, however, has some disadvantages such as not permanently clearing the typhoid carrier state.

The results of the trial of synnematin B are reported by Dr. Lazaro Benavides V. of the Hospital Infantil, Mexico City, Drs. Birger H. Olson and Stephen H. Holt of the Michigan Department of Health Laboratories, Lansing, Mich., and Gerardo Varela of the Instituto de Salubridad y Enfermidades Tropicales (Institute of Tropical Medicine), Mexico City.

Drs. Olson and Holt had previously shown that synnematin B was not toxic for human beings and that it was active against a wide variety of *Salmonella*, the germ family to which the typhoid fever germs belong. Synnematin was discovered by Dr. R. Gottshall and co-workers at the Michigan State Department of Health and later separated into synnematin A and B.

Science News Letter, April 2, 1955