

GENERAL SCIENCE

AEC Has Busy Year

A NEW PLASTIC with highly desirable qualities emerged last year on a commercial basis from research sponsored by the Atomic Energy Commission.

The new fluorocarbon plastic—unobtainable through customary chemical processes—has bright, sunfast colors. It has high chemical resistance plus an adhesive, bondable surface.

It was produced by irradiation with a cobalt-60 gamma source in experiments carried out under the AEC's high-intensity radiation development program.

Development of the plastic was just one of many advances cited by the AEC in its Annual Report to Congress for 1959.

Another highlight was the shift from laboratory to clinic for transplanting bone marrow to persons whose own marrow has ceased to perform its critical function. Bone marrow supplies the daily requirement of new blood cells for the body.

In addition to promising a way for treating persons accidentally exposed to heavy doses of radiation, bone-marrow transplants "may conceivably lead to the development of a form of treatment for diseases . . . such

as leukemia and aplastic anemia," the report said.

In another facet of its busy year, AEC conducted research on the safe storage of high-level atomic wastes deep in earth formations. Storage in salt deposits appears promising and further research is now in progress. The petroleum industry has been requested to consider feasibility of locking up radioactive liquids in deep abandoned oil wells.

To help in storing "hot" wastes, a filter made of spaghetti-like strands of montmorillonite clay is being developed. It will filter out radioactive atoms from liquid wastes passed through it. After filtration, the clay is baked to "fix" the absorbed radiation prior to storage. On the commercial and industrial fronts, AEC reported that nuclear power plants may be able to generate power, using more advanced technology than at present, at seven to 8.5 mills per kilowatt hour. This would make them competitive with 20% to 25% of existing capacity on U.S. utility systems. As of September, 18 civilian power reactor projects, not that efficient, were in the works.

Science News Letter, February 13, 1960

PSYCHIATRY

Family Therapy Works

A MENTALLY ILL person is now often treated not alone as an individual but with his entire family as a group.

The differences between this kind of group treatment and the conventional kind of group therapy, in which a number of patients are treated together, were explained at the American Group Psychotherapy Association meeting in New York by Drs. Joseph H. Handlon and Morris B. Parloff of the National Institute of Mental Health, Bethesda, Md.

One great advantage of the conventional group therapy is that the patient loses his feeling of being different from everyone else. He comes to learn that he is in the same boat as many others, causing him to express his true feelings more openly.

With his family, however, the patient does not have this in-the-same-boat feeling. Instead, he is likely to feel quite alone as the only "sick one." He does not feel that he can speak frankly and freely.

In the conventional group, the therapist can protect the individual against having any other member of the group "get back at him," but the therapist cannot protect a patient from pressure from other family members after the patient has gone home.

In the conventional group, the individual patient can compare his way of handling a particular situation with that of other persons and can learn new ways of behaving. Family members, however, have often built up a traditional family way of treating outsiders and specific situations so

there is not the same opportunity to modify behavior.

In the family, too, there are built up expectations of how each member will act; "Mother is the forgiving one," "Sarah is always so dependable," "Dad never lets on what he is feeling," and so on.

These expectations make it very difficult for a patient in a family group to try out a new way of behaving.

Sometimes, at the core of the patient's illness is a misperception of his father—a misperception that is transferred to other persons. But this misperception may be reinforced by the attitude of the whole family. In the family group situation, it is hard to break up this unfortunate chain of attitudes.

Seeing a family operate together as a group is an extremely useful way of learning about the family pathology, the scientists reported. Under some circumstances, seeing the family in a group can have therapeutic results.

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PUBLIC HEALTH

October Milk Sampling Shows Strontium-90 Rise

THE STRONTIUM-90 levels in milk samples went up during October in all but the Atlanta station of the 12-station network, the U. S. Public Health Service reported.

The levels of radioactivity in the October

samples continued the fluctuating pattern that has prevailed from the beginning of the study in 1957. At the St. Louis station, the strontium-90 count was 25.1 micro-microcuries per liter. It was 15.0 in September.

The strontium-90 measurement at Fargo (N. D.)-Moorhead (Minn.) station was 11.4 in October compared with 8.1 in September. In the Chicago area, there was an increase from 5.2 in September to 10.1 in October.

U. S. Public Health Service suggested that these increases may be a repetition of the pattern observed during the fall of 1957 and 1958. They may also be related to the customary change in farm practices from pasture to barn feeding during the fall and winter months.

The National Committee on Radiation Protection and Measurements considers that undue risks to the population will not be incurred by continuing to use the value of 80 micro-microcuries per liter as a guide to whole population exposure. A curie is a measure of radioactivity equivalent to that produced by one gram of radium, and a micro-microcurie is one millionth of a millionth of a curie.

Both the monthly levels and the long-term averages for all radioactive isotopes analyzed in the milk samples collected in October from all stations remained below the levels that the committee considers permissible for lifetime exposure by the general population.

The milk sampling network is part of the Service's program of measurement of radioactivity in air, water and food. Milk was chosen for the initial study of specific isotopes in foods because it is the most practical to sample and is produced throughout the year in all sections of the country.

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Stamp Cancellation to Boost Science Fairs

IN SOME CITIES the simple act of mailing a bill, a birthday card or a love letter may increase public interest in developing a new generation of scientists.

The U. S. Post Office Department has authorized a "Support Your Local Science Fair" postal cancellation.

SCIENCE SERVICE, which administers the National Science Fair-International from its headquarters in Washington, was able to speed official approval of the design and national use of the special cancellation.

The device will be used this spring by any of the 200 fairs affiliated with the National Science Fair-International who apply through their local postmasters.

A joint committee of the Reading-Berks, Pa., Science Fair, and the Reading Stamp Collector's Club originated the idea.

The Reading Stamp Collector's Club, with a hundred members, including many scientists and other professional men, has sponsored junior groups of stamp collectors and has exhibited at community functions to demonstrate the knowledge and personal satisfaction to be gained from this rewarding hobby.

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