

BIOLOGY

Colchicine Injections Change Chromosomes in Fruit Flies

Exceedingly Fine Hypodermic Needle, Filed Down, Used To Inject Into 3-Day Larvae in Region of Brain

COLCHICINE, the "evolution chemical" that has been producing amazing results in plant breeding during the past few years, has now broken into the hitherto closed field of changes in animal cells, in experiments on fruit-fly larvae performed in the biological laboratories of the Catholic University of America, by Dr. Dale C. Braungart and Rev. C. E. Ott.

The two zoologists used very young larvae, or grubs, of the common fruit-fly, favorite insect guinea-pig of genetic studies. When the larvae were about three days old, they injected the colchicine into the region of the brain, using

an exceedingly fine hypodermic needle attached to a small rubber tube as a syringe.

"We filed the needle down, some," admitted Dr. Braungart.

Cells in certain limited parts of the brain were later found to have undergone doublings in the number of chromosomes, the heredity-bearing bits of specialized protoplasm within the nuclei. Similar increases in chromosome numbers in plants, induced by colchicine treatment, have been followed by radical changes in the whole bodies of plants of the following generation, and these changes have been regarded as evolu-

tionary "jumps" or mutations by some biologists.

However, efforts to produce like increases in chromosome numbers in animal cells have hitherto had scant success. Either the colchicine would have no effect at all, or it would kill the animal cells outright. So, although fruit-flies are zoologically very remote from back-boned animals, at least they do belong to the animal kingdom, and thus represent a "toe in the door," giving hope for further experiments.

Science News Letter, August 1, 1942

METALLURGY

Silver in Place of Tin Recommended for Solder

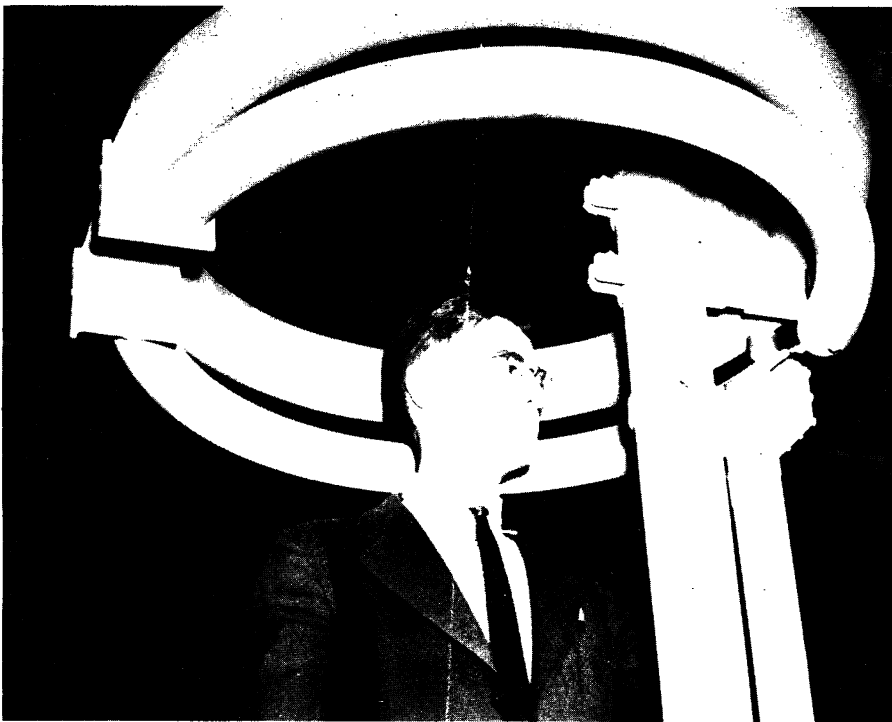
LEAD-SILVER in place of lead-tin soldering for tin cans is one of the recommendations of the War Metallurgy Committee and its Advisory Committee reported by Dr. Frank B. Jewett, president of the National Academy of Sciences, in a survey of the work of the two committees for the past eighteen months.

The substitution of lead-silver for lead-tin solder has been made in some fields. But in certain canning processes, difficulties are encountered which must be overcome by research before the substitution in this field can be ordered, the report stated. Nevertheless, since a large proportion of the total consumption of tin is still used in soldering, such substitution in the canning industry is urgently needed.

The War Metallurgy Committee has at its disposal for war work more than 10,000 metallurgists in this country, research men, technicians, engineers. Their combined experience represents well over 125,000 man years. Heads of industries, university and research organizations also contribute their knowledge and experience. The results of Canadian and English research are made available.

The Committee functions as a nerve center for the coordination and correlation of all this work, preventing duplications and mistakes and thus saving time and money. It portions out the work to various sub-committees and to organizations and groups best suited to carry on the particular kind of work needed. It serves also as a clearing house for the appraisal of new thoughts, new ideas, new short-cuts that may come from anywhere—and are coming in fast.

The chairman of the War Metallurgy



FOR FM

This novel looking radio antenna, developed by M. W. Scheldorf, General Electric engineer and exhibited at the Institute of Radio Engineers summer convention in Cleveland, is designed to provide equal radiation of the radio waves in all directions horizontally. To produce this equal radiation for frequency-modulation radio transmission, it was previously necessary to install more complicated and costly antenna arrangements.