



MAGNETIC MATERIAL — *Scientists of the Westinghouse Electric Corporation have perfected a magnetic material, highly purified manganese-bismuth, that promises to yield powerful permanent magnets. Dr. Alex Goldman is shown here weighing a sample, which must be handled in the inert atmosphere of helium in order to avoid the spontaneous combustion that would otherwise occur.*

cells of more than 50 roentgens up to age 30 years, and not more than 50 roentgens additional up to age 40. (About half of all U. S. children are born to parents under 30, nine-tenths to parents under 40)

Other recommendations of general interest are:

(6) Techniques for monitoring worldwide fall-out should be further improved.

(7) Measurements of the storage of radiation in the stratosphere should be continued and extended.

(8) A national agency should control and keep records of all dumping of radioactive material in the ocean.

(9) An international body should set up safe standards for the marine and air disposal of radioactive materials as soon as possible, based on current knowledge.

(10) Research in marine disposal should be carried out on a cooperative international basis.

(11) Until advances in reactor technology substantially reduce potential hazards buildings that house reactors located near populated areas should be sealed against the release of radioactive materials in the event of accident.

(12) Research should be continued and accelerated, particularly in the fields of:

Fundamental genetics, mammalian genetics, human and population genetics

Pathological effects of radiation

Mixing between various parts of the atmosphere

Mixing between various parts of the oceans

The role of plants and animals, both on land and in the oceans, in concentrating radioactive materials

The tolerable levels of radioactivity in human and animal food

Geophysical and geochemical aspects of the ultimate disposal of radioactive wastes

Selection of biologically suitable sites for various atomic facilities

Safety devices for the control of accidental power surges in reactors.

The conclusions were announced by Dr. Detlev W. Bronk, Academy president, and the six committee chairmen who are leading more than 100 United States scientists in a continuing study concerning various aspects of radiation problems, both those known at present and those possibly occurring in the future.

Study committees and their chairmen are: genetics, Dr. Warren Weaver, vice-president for the natural and medical sciences of the Rockefeller Foundation; pathology, Dr. Shields Warren, pathologist of the New England Deaconess Hospital, Boston; agriculture and food supplies, Prof. A. Geoffrey Norman, University of Michigan's botany department; oceanography and fisheries, Roger Revelle, director of Scripps Institution of Oceanography, La Jolla, Calif.; meteorology, Harry Wexler, director of meteorological research, U. S. Weather Bureau; and disposal and dispersal of radioactive wastes, Abel Wolman, sanitary engineering professor, Johns Hopkins University.

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ZOOLOGY

Plant-Like Animals Need Nitrogen for Sex Life

► CONTROLLING NITROGEN supply in certain microscopic plant-like animals can stimulate the "mating urge."

Emil Bernstein and Dr. Theodore Jahn, University of California zoologists, have been conducting such experiments with one-celled organisms known as *Chlamydomonas*. These tiny creatures can move in water like animals and, through plant-like photosynthesis, can create their own food.

The two U.C.L.A. scientists found that the mating urge could be stimulated by increasing light intensity in the organisms' environment, reducing nitrogen in their food source or by allowing them to age.

The organisms began to reproduce sexually following such stimulus. Prior to these conditions they display little or no sexual activity, although the cells may reproduce by simple division.

Nitrogen depletion, common to the three conditions, may be the key to sexual activity. The researchers speculate that changes in nitrogen levels may have something to do with synthesis of a sex hormone-like substance in the organism.

It is possible the nitrogen factor is related to some sexual cycle in these tiny organisms that parallels the sex hormone-controlled cycle in higher organisms including man, the investigators said. This possibility is now being explored.

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ASTRONOMY

Will Chart Motions Of 180,000 Stars

► SOME 180,000 stars will be photographed during the next few years at Bergedorf and Bonn, Germany, to determine their proper motions, a University of Virginia astronomer has reported.

Dr. A. N. Vyssotsky of Leander McCormick Observatory said the recalculated values for the stellar motions are expected to shed new light on the size of the Milky Way galaxy in which the sun and planets are located.

The study of proper motions will also be extended to stars visible only from the Southern Hemisphere, Dr. Vyssotsky reported at a dedicatory symposium for the University of Pennsylvania's Flower and Cook Observatory near Paoli, Pa.

At the symposium, Dr. Peter van de Kamp, director of Swarthmore College's Sproul Observatory, said astronomical photography had reached such a high degree of accuracy that stars invisible even to a camera can be measured by their effects on the motions of other stars visible photographically.

Dr. F. Bradshaw Wood is the director of the new observatory, which combines the functions of the University's old Flower Observatory and its Cook Observatory.

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