

Force and Atomic Energy Commission. O-Man, the big arm's name, is derived from "overhead manipulator."

With its two steel fingers, the record-sized machine can pick up heavy parts, position them and fasten them into place. It can drill and tap holes, use power wrenches, hammers or riveters, and operate a sheet metal saw. Messages are dispatched to the arm through 140 wires running to a remote "brain" situated where human arms are safe from radioactive burns.

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• RADIO

Saturday, Jan. 2, 1954, 3:15-3:30 p.m. EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. George Wald, professor of biology at Harvard University and winner of the 1953 Lasker Award of the American Public Health Association, will discuss "How We See."

HEMATOLOGY

New Blood Factor U Widely Distributed

► DISCOVERY OF a new blood factor, called "U" because of its almost universal distribution, was announced by Dr. A. S. Wiener, Dr. L. J. Unger and E. B. Gordon of the Serological Laboratory of the Office of the Chief Medical Examiner of New York and the blood and plasma bank, University Hospital (New York University-Bellevue Medical Center), New York, in the *Journal of the American Medical Association* (Dec. 19).

The new factor was discovered after a Negro woman, taken to a hospital with a bleeding stomach ulcer, went into shock and died from reaction to blood being given her by transfusion. A previous transfusion given her had had to be stopped because of a reaction of chills and fever. Both donors, however, had belonged to the same blood group, B, as the patient.

After she died, her blood was again examined. Cross-matching tests showed that her blood contained an abnormal antibody that strongly clumped the cells of the two donors. Subsequent tests with blood of 425 Negroes and 690 white persons showed the U factor present in all but four of the Negroes.

The U factor, the scientists report, is not related to the A-B-O, M-N, Rh-Hr or K-k systems, or to any other blood factor discovered to date.

Blood grouping has become a highly specialized field, the scientists point out. In their opinion, the delicate tests needed can only be performed by specially trained persons. In order to avoid fatal reactions, they advise against having blood grouping and cross-matching done by interns who usually have very little training. Instead, they think, large hospitals should set up adequate blood grouping departments and small hospitals should make use of a central blood grouping laboratory.

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METEOROLOGY

Weather Control Studied

► WHETHER CONGRESS should enact laws to control the weather, if it is economically possible at all to make rain or to disperse fog, is one of the questions an 11-man committee just appointed to study weather modification will probably decide.

Retired Navy Capt. Howard T. Orville, chairman of the President's Committee on Weather Control and Evaluation and a consultant of the Bendix Aviation Corp., Baltimore, outlined the aims of the committee in Washington.

Western ranchers and farmers are spending hundreds of thousands of dollars a year on efforts to make it rain. Although many of them believe this money is well spent, the U. S. Weather Bureau, backed by close to 100 years of records, often can tell them that it would have rained without the rain maker's efforts. Capt. Orville pointed out, however, that an increase of even ten percent in rainfall in the West would "mean a great deal." Many scientists at

present question whether cloud seeding achieves even this. The weather advisory committee, Dr. Orville said, will make a study of "all past, present and future cloud seeding experiments," then try to decide if they have been successful. In their work, the committee will have access to classified information, both of the government and of private operators, since it has the power to subpoena records. Thus it will be able to base its final decision recommending weather control legislation, due in 1956, on more scientific data than has been available to previous groups evaluating the claimed successes of rain making.

Under the terms of the Public Law 256, passed by Congress at its last session, the committee is required to report periodically to Congress, by way of the President. Not only information on cloud seeding collected by U. S. scientists, but results of experiments in such countries as Australia and Spain will be considered by the committee.

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BIOPHYSICS

Photosynthesis Method

► GREEN PLANTS may use a photoelectric process for the "crucial step" of converting energy to make sugars and starches for food from carbon dioxide and water.

This new theory, which will appeal to scientists working on the problem because it is both simple and profound, has been developed by Dr. Leonard S. Levitt of Stevens Institute of Technology, Hoboken, N. J.

According to this theory, a chlorophyll molecule, on bombardment with photons of red light, absorbs one quantum. This results in activation of an electron to such a high-energy level that it is easily extracted by a mild oxidizing agent intimately associated with the chlorophyll molecule, that is, the disulfide group of pyruvic oxidase.

The entire process, Dr. Levitt thinks, may be thought of as a flow of electrons actuated by light, or, essentially, as a photoelectric current flowing from water through the chlorophyll to the disulfide.

According to previous theories advanced by other scientists, the chlorophyll molecule transfers its electromagnetic energy to a disulfide ring and, through chemical reaction, two hydrogen atoms are extracted from water or some other substance.

Dr. Levitt thinks it "rather unlikely" that this would go on in a living cell in a water solution or suspension where ions could be formed with much less energy.

In reporting his theory in *Science* (Dec. 4), he states: "The transfer of electrons can occur much more rapidly and efficiently

than the transfer of relatively cumbersome hydrogen atoms, and it is not to be supposed that nature has not yet been apprised of the fact."

According to his theory, many things scientists have been searching for, because they assumed they happen, need not be searched for because they do not happen.

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PUBLIC HEALTH

Milk, Living Standards Are Closely Connected

► THERE IS a close connection between a high standard of living in a country and its ability to produce and distribute wholesome milk, Dr. Jacques M. May, head of the department of medical geography, American Geographical Society, declared at the World Congress for Milk Utilization meeting in Washington.

Where milk is unobtainable or prejudices keep people from drinking it, the population is usually near starvation, he said.

In India, the people like milk and the country has the largest number of cattle in the world, but only a quarter of a pint of milk is available per person per day. It is against religion in India to kill cows. Old cows no longer producing milk compete for food with young cows. The result is the cows are as starved as the people.

A contempt for milk is traditional in China, Dr. May said.

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