

CHEMISTRY

Man-Made Food Possible

► MAKING an artificial green plant out of colored dyes and chemicals is not too wild a dream and could save the world from eventual famine of food and energy.

Dr. Farrington Daniels of the University of Wisconsin rates the atomic energy development as a more difficult job than developing artificial photosynthesis, which means a factory that can use sunlight directly to build food out of carbon dioxide and water.

He told the American Association for the Advancement of Science in Washington that he would have guessed ten years ago that photosynthesis without plants would come before atomic energy.

Atomic energy won the race because \$2,000,000,000 was spent developing the chance discovery of fission of uranium. The investment in research upon photosynthesis has been negligible.

Dr. Daniels predicted for the future:

We shall eat wood in the future. Thousands of tons of yeast made from sugars converted from wood were used in Europe during the war. Trees and quick-growing bushes and grass grown on poor soil will furnish the wood necessary.

Weeds and algae from the oceans and

freshwater streams and lakes will be harvested for food.

Farm wastes will be converted into carbon monoxide and hydrogen and then processed into motor fuels, in factories located like creameries in local areas.

Science News Letter, September 25, 1948

Problem in Trip to Moon

► FOR THOSE who hope to fly to the moon and beyond with atomic power space ships, Prof. Eugene P. Wigner of Princeton has discouraging facts. The difficulty is getting rid of the waste heat from the tremendously concentrated nuclear energy source (the energy of fission corresponds to 600,000,000,000 degrees Centigrade of temperature). Computations show that an atomic engine rocket would barely be able to escape from the planet because of this heat problem.

For ocean ships, to which mobile atomic power will probably be first applied, the need of protecting against the intense radioactivity is more of a limitation, which Prof. Wigner believes can be overcome.

Science News Letter, September 25, 1948

ECOLOGY

Cooperation with Nature

► MAN'S boasted "conquest of nature" must yield place to a cooperation with nature, if man is to survive, Dr. Stanley A. Cain of the Cranbrook Institute of Science warned, at the meeting in Washington of the American Association for the Advancement of Science.

We are used to thinking of land plants, whether crops, pastures or forests, as renewable resources, in contrast to such exhaustible resources as ores and oils. Such, however, is not necessarily the case, Dr. Cain declared. When man sweeps a forest off a mountainside and then lets fire ravage the thin soil, that forest will not be renewed in anything like human terms of time. Similarly, when man over-exploits cattle range or corn land, what remains will be unprofitable masses of weeds, or bare, gully-scarred clay, renewing nothing that man can use.

"We may be certain that a balance of nature will be attained; but we can not be certain that this balance will be one pleasing to man," he commented.

Efforts of conservation-minded groups have been largely ineffectual to date, the speaker pointed out, because such groups have put their main efforts into trying to influence politicians to pass (or reject) certain legislation, instead of devoting themselves to the broad education in con-

servation of the voters who elect (or reject) the politicians.

At the same session, Prof. G. E. Hutchinson of Yale University examined the effect of man's activities on the distribution and use of two chemical elements essential for life, carbon and phosphorus. In general, man's interference in the course of nature has been to intensify and make more continuous the exploitation of these indispensable elements, thereby rendering the inhabited part of the planet less fit for life.

"We have reached a point in this process when human assets are the only thing that we have in abundance," he declared. "Any future economy of abundance must be based on human ingenuity rather than on abundance of raw materials. The main obstacles to such a development are fear of war and a wrong orientation on the part of the public towards natural resources."

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POPULATION

"Standing Room Only" In Another 2,000 Years

► IN 2,000 YEARS there will be "standing room only" on earth if the population continues to increase at the present rate of about 2,000,000 a month. Dr. Brock Chis-

holm, Director General of the World Health Organization, made this prediction at the American Association for the Advancement of Science meeting in Washington.

As a temporary relief measure to feed the present population of the world, WHO plans to pick out areas that are promising for food production but are held back by disease. Medical aid would then be given these disease-ridden areas, such as parts of India and Africa.

Dr. Chisholm recognized that this was just a temporary measure that would probably lead to an increase in population in these sections. He pointed out that, in time, population control will become inevitable.

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PSYCHOLOGY

Russia's Loud Vetoes Are Healthy, Psychiatrist Says

► IT IS a healthy sign to have Russia voicing her "nos" in public rather than reserving them for the diplomatic consulting room, a psychiatrist told the American Association for the Advancement of Science in Washington.

"It is wholesome for Russia to be expressing herself in Tass and Pravda and for that to be reported in our press," Dr. Kenneth E. Appel of the University of Pennsylvania declared.

He compared this public thrashing out of troubles to the work of the psychiatrist who helps the individual by allowing him to freely express all his accumulated fear and hostility. Discussion and understanding help the patient back to health.

"The same attitude that the wholesome parent adopts toward the belligerent or non-conforming child and psychiatry shows to the patient who is suffering from emotional excesses, should be adopted towards nations who are suffering from nationalistic, adolescent struggles in maturity," Dr. Appel advised.

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ZOOLOGY

Hair May Come from Warts Of Toad-Like Ancestor

► THE HAIRS of your head (and the whiskers on your chin, too, if you are a male) may be the descendants of warts that graced the hide of a toad-like ancestor, 100,000,000 years or so ago.

This suggestion was made before the meeting of the American Society of Zoologists in Washington, by Prof. Hans Elias of Middlesex University. Careful dissection of the warts of certain species of toads has disclosed structures basically resembling those of mammalian hair, he said. In the toad, these structures seem to be special sense organs.

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