

GENETICS

Chemistry Aids Genetics

Study of molds show how heredity is linked with ability to make from its food medium the necessary compounds to sustain life.

► CHEMISTRY has come to the aid of biology in solving some of the more difficult questions of how parental characters are passed on to offspring—and of how these characters sometimes change, giving rise to new evolutionary lines or pinching off old ones.

Specifically, it is biochemistry that is thus helping forward the study of genetics, Prof. G. W. Beadle of Stanford University declared, in a lecture given under the auspices of the Society of Sigma Xi at the University of Oregon. This was the first of a series of national Sigma Xi lectures by Prof. Beadle at various universities throughout the nation.

Earliest studies in genetics, like the classic researches of Mendel, concerned themselves with easily visible differences in organisms, such as color of flowers or seeds in plants, shape of wings or kind

of hair in animals. A great deal of profitable work is still being done along those lines.

However, plants and animals also have definite modes of inheritance in their invisible internal chemical reactions. What they do with their food, how they build it into their body substance, how they may sicken and die for lack of an indispensable hormone or vitamin, are as definitely controlled by their genes as are color, shape or size of body parts. These intricate reactions in life-chemistry are the present subjects of research by Prof. Beadle and his associates at Stanford University, and of other investigators elsewhere.

The special organism chosen by Prof. Beadle is a species of red bread mold, which makes a very desirable vegetable guinea-pig for a number of reasons, out-

standing among which are the ease with which it responds to breeding techniques and the sharpness of the differences its new strains show in their biochemical reactions.

The mold is induced to undergo gene changes by bombarding it with X-rays, ultraviolet radiation or neutrons. Sometimes a gene drops out of its makeup. In some of these cases, the result is a new strain of mold that cannot put together the simpler compounds in its food medium to make some necessary item in an organism's life-equipment—vitamin B₁, for example.

Ordinarily, of course, such a deficient strain would die, but by artificially supplying the lacking food element it is possible to keep alive and to continue studies on its hereditary behavior.

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CHEMISTRY

Wood Products Laboratory Opened in Washington

► A NEW LABORATORY for improved physical and chemical utilization of wood and its products was officially opened in Washington, D. C. The Teco-Shop Laboratory of the Timber Engineering Company is appropriately located in the middle of a wooded area. Hosts for the day were C. A. Rishell, director of research, and Harry Uhl, president.

The laboratory is composed of two divisions. Dr. Eduard Farber is in charge of the chemical division, which has already made advances in the study of the utilization of lignin, partner of cellulose in wood, but all too frequently regarded as a waste product. J. L. Stearns heads the physical department where soft grades of wood are made hard under impregnation. Gaily hued pieces of wood have been colored not just on the surface, but throughout, by this process.

The wood products development shop and wood chemistry laboratory are expected to provide an additional link between basic research organizations such as the U. S. Forest Products Laboratory and practical application of this research.

Science News Letter, January 27, 1945

AERONAUTICS

8-Passenger Helicopter Has Two Engines

► DESIGN DETAILS of a new helicopter that will carry eight persons reveal that it has two 300-horsepower engines and windmill-like rotor blades 56 feet



CHEMICAL LAB—A view of the chemical laboratory of the Timber Engineering Company in Washington, D. C., where research into lignin and other chemical phases of wood is conducted. Left to right are: Carl Rishell, Director of Research; Dr. Eduard Farber, Director of Chemical Research; S. Sibelius and Dr. M. Sciascia.