

GENETICS

Knowledge of Chromosomes Founded Synthetic Species

With Radium and X-Ray Scientists Direct Formation of New Weeds According to Given Specifications

CHARLES DARWIN would have greeted with satisfaction the report of the planned and synthetic "origin of species" that Dr. Albert F. Blakeslee presented to the National Academy of Sciences meeting in Ann Arbor.

Three new species of a common weed were manufactured to order as the result of the research of Dr. Blakeslee and Dr. Dorothy A. Bergner at the Cold Spring Harbor, N. Y., genetics laboratory of the Carnegie Institution of Washington.

These new kinds of jimson weed, more scientifically known as *Datura*, have no economic use, but they are far more important to the future of plant and animal breeding than the new plants that are being protected under the liberalized patent laws at Washington.

Not chance alone but careful knowledge of the chromosomes within the cells of the plants enabled Dr. Blakeslee to draw up specifications for the new species of jimson weed and then guide their production. Radium and X-rays directed at the seeds and germ cells of plants and animals have greatly increased the number of new types produced. But with a hit-or-miss production of mutations, as the scientists call the new type, it is largely a matter of luck when a new kind of plant or animal is produced.

From years of growing jimson weed as a florist would grow prize flowers, from microscopical studies of the little chromosome rods in the cells, Dr. Blakeslee knows the effect upon the adult plant of extra doses of the various parts of the chromosomes. He can predict what the effect will be when extra chromosomal fragments secured by radiation treatment are added to the normal arrangement.

Knowing what changes in the chromosomes are needed to give new shapes to the leaves or fruit or to produce other changes, he can predict just what characters a new arrangement of chromosomes will have. To make the new kind of

weed breed true, he knew that these new chromosome arrangements must be transmitted by the pollen or male element of the plant as well as by the egg cells or female part.

Dr. Blakeslee told the Academicians that three new kinds of jimson weed he has made are indistinguishable in ordinary appearance from each other, and they are strikingly distinct from the stock from which they are evolved. He believes therefore that they merit being called new species. They stand the biological test for new species because they breed true and they differ more widely from the normal jimson weed than do some natural species that have already been given a place as species in the classifications.

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ASTRONOMY

300,000 Galaxies Studied by Harvard

THREE hundred thousand heavenly galaxies, each a great system or "universe" of stars similar to our own Milky Way, will be disclosed in the southern skies photographed by Harvard's 24-

inch Bruce telescope stationed in South Africa.

Dr. Harlow Shapley, director of the Harvard College Observatory, in a paper to the National Academy of Sciences, estimated that these external galaxies would be discovered in the course of a research program to be completed in about six years.

Most of these great systems of stars probably lie within a region between thirty million and one hundred million light years distant from the earth.

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FORESTRY

Douglas Fir Felled in 1895 Older Than Sequoias

BRITISH COLUMBIA may have sacrificed the distinction of having the oldest tree in the world nearly forty years ago, when the gigantic Douglas fir shown in the accompanying illustration was felled in August, 1895. It stood near Vancouver, but its exact location has been forgotten. Forestry men are now hunting for its stump, so that new measurements can be taken and a ring count made to determine its age.

This fir giant measured 417 feet in height, with a clear 300 feet to the first limb. At the butt it was 25 feet in diameter, with bark 16 inches thick; 207 feet above the ground its diameter was still nine feet.

The old photograph, which shows the feller, George Cary, on the ladder, was obtained through the courtesy of Maj. H. Steere-Clark, of the British Columbia Loggers Association.

Science News Letter, November 26, 1932



GIANT DOUGLAS FIR MAY HAVE BEEN OLDER THAN SEQUOIAS