

GENERAL SCIENCE—AAAS

# Research on Man Needed

In an address as retiring president of AAAS, President Conant of Harvard urges applying scientific method to study of how to live and work together.

► TO PRESERVE and continue that unique adventure in living that is the American way, scientific research must be undertaken on man's own activities, President James B. Conant of Harvard University declared in his address as retiring president of the American Association for the Advancement of Science.

President Conant spoke in full knowledge that many of his colleagues in the more or less exact sciences would regard as heresy any proposal to admit social studies to the ranks of acknowledged sciences. Himself a chemist of high standing as well as a successful university administrator, he "took the dare." Admittedly, he said, in the social sciences there is a high degree of empiricism—that is, in them there is little mathematical certainty and a great deal of plain cut-and-try.

But he called his colleagues' attention to an analogous situation in the ancient art of healing, where intensive and massive scientific research programs have greatly reduced the degree of empiricism and given the practitioner a cor-

respondingly greater amount of sure expectation. As much, he feels, can be done by applying the scientific method to "the likewise ancient art of counselling human beings as to how to live and work together."

As for the immediate future, President Conant expressed hopefulness:

"Conceivably we may all be blown up by atomic bombs within the next few years as some of my colleagues seem to think. Their reasons for this dire prediction, however, appear to me to be quite inadequate. I prefer the contrary assumption. I have faith that we shall be wise enough to escape a global war.

"I likewise believe that we will move forward to still greater strength and prosperity as a democracy, and that the morale of the nation will continually improve as we demonstrate that our American ideals are no mere myths or legends. And in this all important undertaking, I have confidence the skill and wisdom of the scientists cooperating with practitioners will play an important part."

*Science News Letter, January 3, 1948*

BIOLOGY—AAAS

# Sex Evolution Traced

Cell reproduction is induced in "sexless" cells with synthetic grown hormone, making possible study of process. Brings out primitive ancestral characters.

► HOW SEX came into existence has apparently been shown in a study of cells usually considered sexless, with a growth-control chemical used to stimulate them into renewed multiplication. Details of the study were presented by Dr. C. Leonard Huskins of the University of Wisconsin. Associated with Dr. Huskins in his research were Lotti M. Steinitz, R. E. Duncan and Rhona Leonard.

The discovery started with a successful effort to induce division in plant cells no longer considered capable of this reproductive process, by treating them with dilute solutions of the syn-

thetic growth hormone, indole-3-acetic acid. Division readily occurred, revealing complex details of chromosome structure not hitherto reported. The divisions were of the type usually found only in the active sex cells of plants.

Sex evolution proceeded in four steps, according to Dr. Huskins' interpretation. First, nuclear division took place within the cell, without the cell itself dividing. Then there were mutations or evolutionary changes in the two that rendered each less efficient without the other—a kind of biological precedent for all romances. The third step was a halving of the chromosome numbers within the

*In the past week, scientists gathered in Chicago for the annual Christmas meetings of the American Association for the Advancement of Science. This issue contains many reports from the meetings as indicated by AAAS in the line above the head. More will follow next week.*

body-cells. Finally came the union of the two "incomplete" cells into one, which is the physical basis of all sex.

The great complexity of structure which Dr. Huskins and his co-workers discovered in chromosomes is likely to have far-reaching effects, both in genetic theory and in practical plant and animal breeding. Genes, the units of bodily inheritance, hitherto regarded as indivisible units, may now have something happening to them like what happened to the atom—it looks as if it will turn out to have a more or less elaborate internal structure, which in turn will make its modification possible.

One thing that happened in stimulated "sexual" division of body-cells in strawberries and oats was the appearance of plants of primitive, presumably ancestral character. This promises to make possible the finding of elusive "wild" ancestors of cultivated plants simply by breeding them out of their more complexly developed descendants.

*Science News Letter, January 3, 1948*

RESOURCES—AAAS

## Soft Coal Called Key to Nation's Continued Power

► NOT atomic power, but old-fashioned coal—dirty, smoky soft coal—is the key to America's continued prosperity and power, scientists heard from Prof. S. W. Hockett of Iowa Wesleyan College.

Prof. Hockett described some of his own experiments on Iowa coal, which is quite literally the Cinderella of American soft coals. By carbonizing it at relatively low temperatures—around 500 degrees Centigrade—he was able to produce good, easily cleaned fuel gas, a high-grade, easily ignited coke, and an abundance of coal tar products.

Small units for low-temperature carbonation of soft coal have recently been developed, he stated. It appears feasible to move them about on trucks so that they can operate at the pit-head or even down in the mine itself. Gas thus produced can be either piped to nearby cities or bottled and sold to rural users. Shipping costs should be much lower on the more compact products of the new technique.

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