

This important development in rubber chemistry was announced through an exhibit of the U. S. Bureau of Standards at the meeting of the American Association for the Advancement of Science in Cleveland. The trinitrobenzene is used as a vulcanizing agent in rubber in place of the sulfur which is the chemical usually used to keep the rubber from being sticky.

The possibility of using trinitrobenzene to harden rubber during its manufacture was first suggested by a Russian chemist, Dr. Ivan Ostomislensky, of Moscow, who did his research during the World War in 1915. The chemists of the Bureau of Standards have now put this discovery to practical application and proved that the benzene compound produces rubber just as durable and strong as rubber using sulfur, with the added advantage that it is non-corrosive.

It is expected that the new benzene rubber will find important use in the manufacture of electrical cables and wire coverings in which the sulfur vulcanizing agent has caused some trouble in the past. It may also be possible to make rubber films or sheets to be used as protective coverings of metals that are attacked by sulfur.

Science News Letter, January 10, 1931

GENETICS

High-Yielding Corn Bred From Runts

HIGH-YIELDING, new varieties of corn, the hybrid offspring of parents inbred until they often look like runts, were described before the meeting of the American Association for the Advancement of Science in Cleveland by Prof. R. J. Garber, of the University of West Virginia. By breeding corn on its own pollen for generation after generation, it has been made possible to sort out many of the complex hereditary factors that make for high yield, and then by crossing the various pure-bred strains to combine the desired "ingredients" for more bushels per acre, just as a housewife assembles a cake.

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PHYSIOLOGY

Effect of Glandular Secretions On Sex Discussed by Scientists

Extract is Found to Correct Feminine Underdevelopment; Operation Makes Cockerel of Pullet in Appearance Only

THE latest information on sex, as it is influenced by glands, was exchanged by scientists engaged in many different institutions when they gathered in Cleveland at the meeting of the American Association for the Advancement of Science.

Underdevelopment of the essential physical basis of femininity may be corrected by an extract from a small gland located under the brain, researches by a University of Wisconsin team of three workers indicate. They are Dr. H. L. Fevold, Dr. F. L. Hisaw and Dr. S. L. Leonard. An extract from the front part of the hypophysis, a small ductless gland whose function was for many years a riddle, was found to promote very powerfully the development of the female sex glands in rats. Immature females less than four weeks old were brought to sexual maturity in three days by a series of injections of this extract. Continued injections after this point proved too much of a good thing; they provoked a great overgrowth of the ovaries.

At the University of Chicago, experiments by Prof. Carl R. Moore and Dr. Dorothy Price on the same glandular hook-up indicated that the Steinach hypothesis of an antagonism between the hormones, or active principles, of the male and female sex cells will not stand up. It is true that male extract injected into the veins of a female animal will set back the sexual development of that animal, and female glandular extract will affect male animals similarly. But the Chicago experiments produced evidence that this effect comes about indi-

rectly. The sex-gland extract affects the front lobe of the hypophysis, and this in turn affects the sexual development of the subject of the experiment.

Although removing the sex gland from a pullet will cause her to assume an external appearance much like that of a cockerel, and even produce within her body the development of what looks very much like a male sex gland, the luckless fowl thus transmuted is still not a real male. This is indicated by experiments reported by Dr. L. V. Domm, of the University of Chicago.

Dr. Domm took part of the contents of such an artificially induced "male" sex gland and attempted to fertilize the developing eggs of hens with them, but obtained no positive results. He also transplanted into the developing "male" glands of operated pullets pieces of real sex glands from cockerels, and allowed the transplants to grow. Later he removed the composite glands, and found motile sperm cells in them; but the fowls were nevertheless unable to function as males.

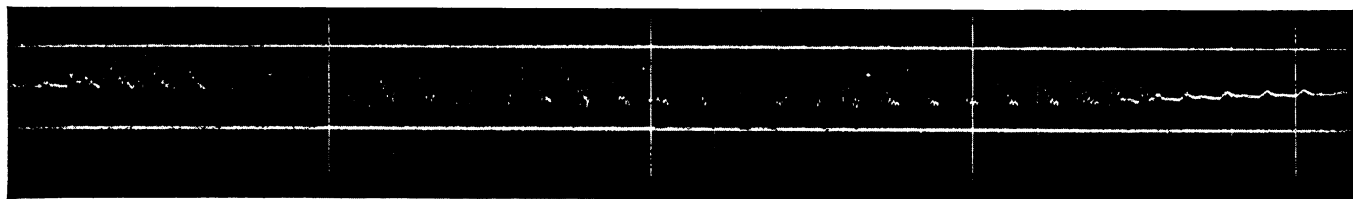
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PHYSICS

Photograph of Human Voice Produced in One Minute

A PHOTOGRAPH of the human voice is produced in one minute by a new rapid record oscillograph exhibited by the Bell Telephone Laboratories of New York at the American Association for the Advancement of Science in Cleveland.

This machine can be plugged into a



THE PICTURE OF THE WORD "SCIENCE"

As it is photographed by the rapid record oscillograph of the Bell Telephone Laboratories, demonstrated for the first time at the Cleveland meeting of the American Association for the Advancement of Science. Each little form in the word has its own effect on the shape of the curve which is made by the vibrating sound waves acting on an electrical circuit.