

new strains with ever shortening period between sowing and reaping while the establishment of new varieties is extending the productive area into regions where the rainfall is of short duration and restricted in amount.

"What better example than this could we desire, not only of the importance of applied botany, but as showing also how its advance follows on research independently pursued. For the production of synthetic nitrogen, which has now become a commercial proposition, and the improvement of the strains of wheat by selective breeding along Mendelian lines, are both involved in this crucial question of food supply. And both owe their origin to advance in pure science."

Origin of Tobacco

To millions of smokers throughout the world who puff allegiance to tobacco, Prof. T. H. Goodspeed, American botanist at the University of California, brought news. He announced that he has discovered the origin of tobacco.

The tobacco of commerce is a natural hybrid of two other closely

related species that grow wild. Prof. Goodspeed arrived at this conclusion as a result of breeding experiments upon wild tobaccos. He produced a hybrid tobacco that resembles the commercial tobacco externally and in cellular details and he therefore concludes that nature by a similar process many years ago accomplished the same hybridization.

Next of Kin

The chimpanzee was declared to be man's nearest living relative in the course of a discussion by Dr. C. Tate Regan, director of the Natural History Museum of South Kensington, London, who outlined for the British Association the evolution of the primates, among them man.

But the chimpanzee is not in man's direct ancestral line, Dr. Regan made clear. Some anthropologists have heretofore concluded that the gorilla is man's nearest living cousin.

Dr. Regan expressed disagreement with the head of another great natural history museum across the Atlantic, Dr. Henry Fairfield Osborn, president of the American Museum of Natural History of New York City. He attacked Dr. Osborn's view

on man's ancestry. Dr. Osborn at the meeting of the American Association for the Advancement of Science last winter surprised his colleagues by contending that the human race has existed as a distinct natural division, wholly separate from its nearest relatives, the great apes, for more than a million years. This made man much older than other anthropologists were willing to concede. Now Dr. Regan reaffirms the more general view that man, while not directly descended from the great apes, is an offshoot from a common stock that divided at a more recent geological period than Dr. Osborn would agree to.

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Bold Invasion

THE root bacteria of clover, alfalfa and other legumes, that befriend the plants and through them man and his domestic animals, come at the outset as though they were enemies. They invade the delicate, thin-walled root-hairs in just about the same way as disease germs, and cause them to curl up as though they were sick. These are among the things that were seen by an international research team, consisting of Dr. H. G. Thornton of the Rothamsted Experimental Station, England, and Dr. E. F. McCoy of the University of Wisconsin, and described by them before the International Botanical Congress at Cambridge.

Not all the roots of a susceptible plant can be invaded by the bacteria, the two investigators found. Alfalfa seedlings were suspended with their roots in a thick "soup" of nodule bacteria; yet only about four per cent. of the root-hairs received bacterial guests.

Moreover, the plants seemed to have a considerable degree of resistance to such invasion during their infancy, for no bacteria found their way through the walls of the root-hairs until the seedlings had put forth their first true leaves. This would seem to indicate that a secretion of the roots was active, either in discouraging the bacteria before the leaves appeared, or in encouraging them when the proper time arrived.

Botany

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Gentile and Jewish Blood Unlike

Ethnology

A STRIKING difference between Gentile and Jewish blood when tested with various chemicals was discovered recently by a Russian biologist, Dr. E. O. Manoiloff, creating considerable stir among biologists and anthropologists.

Dr. Manoiloff worked on Jews and Gentile Russians. He added to a blood clot a goodly amount of salt solution and a few drops of a dye-stuff, called cresyl-violet. In Jewish blood the color of the cresyl-violet disappeared entirely or almost so, and a bluish or greenish tinge alone remained, while in the Gentile Russian blood the cresyl-violet remained partly insoluble and appeared blue-red. The Jewish blood oxidized the dye more readily than the Russian.

Dr. Manoiloff requested several investigators to send him samples of Jewish and Russian blood marked only with numbers, the identity of the samples being known only to the sender. He tested 202 samples and gave the correct answer in 187 cases, that is 91.7 per cent.

Madame Poliakowa working in the

State Institute of the Public Health Commissariat at Leningrad, applied Manoiloff's race-test to the determination of paternity. In cases of pure marriages where father and mother belonged to the same nationality the child's blood reaction corresponded to that of the parents. In mixed marriages the color of the child's blood resembled either the father's or the mother's. Mixed marriages between Russians on the one hand, Germans, Poles and Finns on the other, made the child's blood look Russian, whereas a match between a Russian and a Jew resulted in Jewish blooded babies.

She concluded that in racially pure marriages the child's blood has the same reaction as the father's and mother's; that if the child's and mother's blood give a different reaction, the father does not belong to the mother's nationality; and finally that if the child has a distinct race reaction which does not correspond to the mother's nationality, the father may belong to the nationality, the reaction of which has been found in the child.

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The Roman orator Cicero was aided in his work by a secretary who worked out a shorthand system and took down Cicero's speeches.