

EVOLUTION

Short Big Toe Ape Relic

A short big toe, probably a survival from the times when big toes were short and thumb-like to aid in tree climbing, is the guilty cause of a painful foot trouble. *Metatarsus atavicus* is the name given by its discoverer, Dr. Dudley J. Morton, of the department of surgery of the Yale School of Medicine, to the new foot disorder, "atavicus," referring to the evolutionary properties of a short length first toe.

In the normal foot, Dr. Morton explains, the basal joints of the big toe and the second toe are nearly opposite but in the cases he has observed the big toe joint is much closer to the center of the foot than the joint of the second. After strenuous exercise like tennis, dancing and hiking, this condition may result in severe pain in the front of the foot.

Dr. Morton believes that the malformation is a mild throwback to a prehuman type of foot and bears out his contention by citing the fact that almost all his cases were women, the female sex being notably conservative, in scientific estimation, in taking on new evolutionary traits and foibles. He admits, however, that high heels may have something to do with the matter.

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ARCHÆOLOGY

Maya Pyramid in Mexico

The ruins of the large Maya pyramid, which may mark another important archæological zone in Mexico, have been found in the jungles about seven miles from Comitán, a town in Chiapas, according to a report from the Secretary of Education. The discovery was recently made by a Federal inspector of rural schools, and descriptions and photographs of the sites have been received by the Department of Archæology.

A large emerald, now said to be in the possession of the president of Guatemala, was reported to have been found in a cave near the pyramid, where amateur explorations had been made. The report of the inspector also states that near the town of Tapachula, also in Chiapas, southern Mexico, a carved stone monument has been discovered, believed to be a stela with numerous Maya hieroglyphics.

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Horses of early kings often wore shoes of gold or silver.

PSYCHOLOGY



ROBERT H. GAULT

"Vibro-Tactilist"

To most of our readers, "vibro-tactilist" probably conveys little meaning, neither does "teletactile audition," but both are new words that Dr. Gault has coined to describe his work. Teletactile audition means the hearing of sound through the skin, a possibility which Dr. Gault has demonstrated, and which some day may enable the deaf to hear.

"Hearing by touch" is made possible by means of the "teletactor" an instrument that has been developed for Dr. Gault by the Bell Telephone Laboratories. The vibrations that correspond to speech are carried to the skin of the "hearer" by the instrument, and it is through that that he recognizes them as having some meaning.

Quite recently he has shown that the skin is able to detect vibrations as rapid as 2,700 per second, and perhaps as high as 3,000. Previously, a frequency of 1,600 per second was supposed to be the limit.

Dr. Gault was born in Ellsworth, Ohio, on November 3, 1874. He studied at Cornell and at Clark, and then took his doctorate from the University of Pennsylvania in 1905. In 1909 he joined the faculty of Northwestern University. Since 1917 he has been professor of psychology, though in the last three years he has been absent on leave to work on the "teletactile audition" problem. This work has been under the auspices of the National Research Council. First it was done at Gallaudet College in Washington, and later at the Vibro-Tactile Research Laboratory at Smith College, in Massachusetts.

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Broadcast Gunfire

The old question of why sound sometimes travels much farther than at other times may be answered as a result of experiments soon to be made in England, when the firing of big guns will be broadcast by radio from the artillery proving grounds at Shoeburyness. People for miles around will have the opportunity of hearing the guns by radio, and then, several minutes later, of hearing the actual sounds as they travel through the air.

This announcement is made by Dr. F. J. W. Whipple, of the Kew Observatory in *Nature*, the English scientific magazine. He says that at Grantham, about 80 miles from Shoeburyness, he has heard the firing of the guns between 10¾ and 11¼ minutes after they were discharged. Such abnormal distances for sound seem to be the result of an effect something like that of the Heaviside layer, which reflects radio waves down to earth again instead of letting them go out into space. Dr. Whipple says that it is agreed that such long range sound records are the result of a layer of the air some 25 miles or more above the earth's surface, where the temperature is relatively high, and the sound waves are refracted down to earth again. Thus, a sound that might be inaudible at 20 miles distance might be heard at a hundred.

The broadcasting of the times of firing will make it possible for observers throughout southeastern England to tell when the sounds start and when they reach them, if they reach them at all. Dr. Whipple believes that the best "reception" of the actual sound waves, reflected from the upper air layer, will be about 120 miles from Shoeburyness.

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PHARMACOLOGY

Diabetes Drug Disappointing

Early accounts of clinical tests of the new diabetes drug, synthalin, which medical men believed would duplicate the action of insulin have proved disappointing. Two French physicians have failed to find the new preparation of great value in the treatment of 27 cases of diabetes on which they have tried it, according to the Paris correspondent of the medical journal, *Lancet*.

The discovery of synthalin by Dr. E. Frank of the University of Breslau in Germany stirred up considerable hopefulness among the medical profession at the time of its announcement last spring on account of the fact that it could be taken by mouth instead of hypodermically.

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