

GENETICS

To Breed Speedy Horses For Shorter Work Day

EVEN the plodding of plough horses will be speeded up to keep pace with our fast moving era, if British horse breeders succeed in the task to which they are now setting themselves.

While speed is not the quality most associated with farm horses, this is an age when time means money. No longer does the farmer's man work from day-break to dark, which means that the ploughing must either be finished in less time or extra horses and labor must be paid for. Subtracting two or three hours from the working day, restricted hours alone may mean a loss of from seven to eight acres of ploughing in a sixty-day season unless the ploughing can be hurried.

A team that can plough a 300 yards long furrow nine inches wide can plough nearly two acres more during a month's work than can a team that ploughs only 280 yards furrow in the same time. On a large arable farm this might amount to a saving of about \$725 a year and might mean the margin between profits and loss under the new economic conditions.

By mating active, free-moving mares and stallions that can sire progeny not merely able to move heavy loads but also able to move at a more rapid pace than is usual at present, the breeders hope to develop a plough horse capable of surviving competition of the machine age.

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PLANT PATHOLOGY

Blighted Chestnut Shows Signs of Come-Back

THE NATIVE American chestnut, traditional interior decoration of the Thanksgiving turkey, is showing signs of a possible comeback. Attacked by a devastating fungus blight about twenty years ago, every adult tree in the northern states died down to the roots. The work of the disease has not yet been finished in the South, where it spread more recently, but even there all full-grown trees appear to be marked for destruction.

But around the stumps of the blight-killed trees there appeared new sprouts, for the roots were still living. These sprouts have been growing now for two decades, and many of them have reached young-tree size. A survey of the sprout

situation in Pennsylvania, by J. E. Aughanbaugh, of the commonwealth's Forest Research Institute, indicates that there is hope after all for the native American chestnut. For the first time in twenty years, moderate quantities of chestnuts are being gathered. While the total is the merest fraction of the pre-blight chestnut crop, still it is regarded as a triumph that there are any American chestnuts at all left to be harvested.

Mr. Aughanbaugh is hopeful that a goodly proportion of the sprouts may retain their apparent immunity to the fungus that blighted the original trees, and even that this immunity may be hereditary, so that it can be transmitted to a new generation of seedling trees that will sprout from some of the nuts now being produced.

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GENERAL SCIENCE

Funds Being Sought For Darwin Memorial

FOR THE proper maintenance of Darwin's old home, Down House, as a national memorial, and for the extension of its general research program, the British Association for the Advancement of Science is seeking to raise \$194,000 prior to its centenary celebration in September, 1931.

Darwin's home in Kent was given to the association by W. E. Buckston Browne, who restored the study and living rooms to resemble as nearly as possible their appearance when the famous scientist used them. Part of the funds necessary for the upkeep of the memorial were included in the gift but for the adequate maintenance of Down House, additional funds will be needed.

The rapidity with which the field of scientific inquiry has widened during the hundred years in which the association has sponsored scientific progress in England, likewise calls for an extension of expenditure, if the organization is to maintain its position of leadership. This can best be provided by the establishment of a fund independent of membership dues, which greatly vary from year to year.

Among the researches begun and supported by the British Association for the Advancement of Science in the past have been many of international importance. Standards of electrical measurement in use throughout the world are based on the work of an association committee, for instance.

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IN SCIENCE

EXPLORATION

French Expedition To Cross Asia Next Spring

ONE of the most ambitious overland expeditions since the days of Marco Polo is planned for next spring. A group of eight caterpillar cars, each carrying a trailer, will traverse the whole length of the continent of Asia, starting from Syria and going to Indo-China by way of Iraq, Persia, Turkestan, Sinkiang and China.

The leader of the expedition is Georges-Marie Haardt, who achieved fame by being the first man to put a motor-car train across the Sahara desert. The personnel of the expedition is to be French, with the exception of representatives of the National Geographic Society, which will be the only foreign participant.

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ICHTHYOLOGY

Will Raise Mussels In Laboratory

THE RAISING of fresh water mussels in the artificial environment of a laboratory will be one of the projects given attention at the University of Missouri, Columbia, Mo., in new laboratory space just provided by the University for the use of the U. S. Bureau of Fisheries.

Dr. Max M. Ellis, director of interior fisheries investigations of the Bureau of Fisheries and also professor of physiology at the University, has found a method of speeding up the development of mussels. In its natural environment, the mussel spends the first four to six weeks of his life as a parasite on a fish. Dr. Ellis has discovered a nutrient medium which will take the place for the mussel of the fish. After the mussels have spent an allotted time in this medium, they may be planted in the rivers, relieving a shortage which has been produced by river pollution. Fresh-water mussels are of considerable economic importance because of their value for pearl button making.

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E FIELDS

PALEONTOLOGY

Bones of Extinct Monster Found In West Virginia

FOSSIL BONES of a prehistoric animal that may be a dinosaur have been discovered in rock strata buried 100 feet below the top of a hill near Salem by Prof. Ernest R. Sutton of Salem College. Professor Sutton states that they have the appearance of being the bones of a stegosaur, but that to establish the identity beyond doubt he is sending two well-preserved vertebrae to the U. S. National Museum in Washington.

Stegosaurs were enormous vegetarian dinosaurs with bony plates as big as sidewalks slabs standing up edgewise in a double row along their humped backs. They had two pairs of long spikes on their thick tails, presumably as offensive armament.

West Virginia is classic dinosaur hunting ground. Among other early American scholars who studied the remains of these enormous beasts and speculated as to their nature and origin was the scientist-President Thomas Jefferson.

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PSYCHOLOGY

Emotion Slows Up Workers More than Fatigue

THE HARSH foreman who frightens the workers under him will decrease the output of his department by such tactics. And the man who precedes his working day with a quarrel at the breakfast table with his wife is a most unsatisfactory worker.

G. A. Pennock has been conducting tests at the Western Electric Company plant to find out the effects of various conditions on the efficiency of workers. He was surprised to discover that fatigue was not the principal factor which slowed up production, although a fifteen-minute rest period with a lunch in mid-morning and a ten-minute rest in mid-afternoon did increase production materially. The emotional state of the employee was much more important.

"Home conditions," said Mr. Pennock, "and other outside influences tended to create either a buoyant or a depressed spirit which modified production. Emotional status was reflected in performance; and the major component of this emotional condition was attitude toward supervisor. The inference from these studies was inescapable that the dominant factor in the performance of these employees is their mental attitude."

The employees displayed great interest in the tests and their output increased steadily all the while they were in the test group under the supervision of the experimenter regardless of changes in pay and working conditions.

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ARCHAEOLOGY

Antler Pipes Are New Find In Eastern Archaeology

PIPES made out of the antlers of animals have been unearthed at a site once occupied by prehistoric Indians near the Susquehanna River in Pennsylvania by the expedition from the Pennsylvania Historical Commission. Use of this material for pipes is a new discovery in eastern archaeology, it was stated by Donald A. Cadzow, leader of the expedition.

The field party has been particularly engaged in salvaging ancient rock carvings from islands in the Susquehanna that are soon to be flooded by a power plant construction project. The archaeologists have seized the chance, however, to dig nearby at kitchen middens in which ancient inhabitants of the region left their discarded household goods and broken ornaments.

Combs made of bone and antler, with some of the teeth still intact and with striking human figurines carved on them for ornaments, are among the latest finds.

One exhibition of particular interest is a piece of antler which has been pronounced to be from the prong-horn antelope. These antelope did not range farther east than Iowa, which was a considerable distance for the antlers to be carried, if they were to be brought to the east coast. It is known that the mound building tribes of the Mississippi Valley got obsidian for ceremonial knife blades from the Rockies; so that long-distance trade was not an impossibility in the Indian world.

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AGRICULTURE

Acre in England Contains 300,000,000 Poppy Seeds

RED POPPIES, that have played so important a part in wartime and post-war literature, are a bothersome weed in spite of their picturesqueness. How much of a weed they are, has been realized as a result of tests conducted at the Rothamstead Experimental Station, London. Soil from a somewhat weedy field was potted up in pots having a surface area of about one-fourth of a square foot, and kept watered for several years, until all living weed seeds had sprouted.

Poppies were taken as a sample weed, and only poppy seedlings counted. An average pot yielded over a thousand of them. Calculated on the basis of this soil sample, an acre of English field soil would contain over three hundred million poppy seeds.

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ICHTHYOLOGY-MEDICINE

Fish Poisons Promise Medical Aid to Man

PLANTS poisonous to fish are medicinal aids for man which will become increasingly important in combating dread tropical diseases caused by parasites, F. N. Howes of Kew Gardens prophesies in a bulletin cited in *Tropical Woods*, publication of the Yale University School of Forestry.

New possibilities foreseen in the plants which primitive tribes have long used to daze or poison fish to make them easily caught lie in the fact that some fish poisons are also potent to kill a species of fresh water snail which harbors the parasite responsible for the dangerous disease of schistosomiasis or bilharzia.

Use of the fish poisons for insecticides has already developed to commercial proportions, Mr. Howes said.

Interest being aroused by the mysterious plant of the tropics was indicated by a second study of fish poisons reported in *Tropical Woods*. E. P. Killip and A. C. Smith in a report to the Washington Academy of Sciences told of seeing thousands of the plants growing in cultivation and in their wild state in the interior of Peru and across Amazonian Brazil. They observed many species of fish poison plants but concluded that the variety known as "cube" is the most powerful.

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