

FORESTRY

Rubber Stamps Used For Marking Forest Trees

RUBBER stamps are usually thought of mainly as standard equipment for the desks of businessmen and bureaucrats; but they are also proving useful in one of the most rugged of outdoor professions, forestry.

It is necessary in certain scientific studies of tree life to give large numbers of trees identifying marks. This has been done hitherto by nailing punched metal tags to their trunks. Lately, however, large rubber stamps have been coming into use, "inked" with white paint or enamel.

In the *Journal of Forestry* (April) the relative advantages and disadvantages of the rubber-stamp method are discussed by H. F. Morey and Paul W. Stickel, of the Northeastern Forest Experiment Station, New Haven, Conn.

Science News Letter, April 13, 1935

ARCHAEOLOGY

Spot Where Spartans Made Last Stand Discovered

THE EXACT spot where one of the most heroic hopeless battles of the world was fought has been located, after many centuries of guessing, by a German and a French archaeologist, working independently of each other.

The location of the pass of Thermopylae, where the little Spartan "batallion of death" under their lion-leader, Leonidas, held at bay the uncounted thousands of Persians in the army of Darius, has long been known. But just where the last handful of Spartan warriors thrust and hacked until the last man fell was not known.

The Greek historian Herodotus tells of a mound or small hill where the body of Leonidas was found. On this hill the later-liberated Greeks erected a monument to the memory of their hero, flanked with two lions looking toward the north, whence the Persian foe had come. But there were six such little hills in the pass, so that for generations archaeologists have been carrying on a grand guessing contest.

A few years ago, Dr. Friedrich Stählin of Nürnberg made careful survey of the historic battlefield, and decided which of the six hills must be the site of Leonidas' last stand. Recently a French archaeolo-

gist, M. Béquignon, working quite independently of Dr. Stählin's earlier results, hit upon the same hill. M. Béquignon carried through a program of excavation, and came upon the foundation of the Leonidas monument. The two lions, however, had disappeared.

Dr. Stählin tells of the two investigations in the German journal *Forschungen und Fortschritte*. (March 20)

Science News Letter, April 13, 1935

PLANT PATHOLOGY

Hydrogen Peroxide Rids Seeds of Disease Spores

PEROXIDE of hydrogen has other uses besides the preparation of synthetic blondes. It can be used for the betterment of garden and field crops.

Director L. Portheim and Dr. J. Kisser, of the Vienna Science Academy's biological research institute, have found that a strong solution of hydrogen peroxide will rid many kinds of seeds of the disease-causing fungus spores that cling to them and start trouble when they are planted. They had best success with such seeds as peas, beans, corn and tomatoes; less with rye, barley, cabbage and sugar-beets. Experiments are being continued, to improve the results with the latter group of seeds. (*Die Umschau*, Mar. 24)

Science News Letter, April 13, 1935

CHEMISTRY

Soviets Extract Oil From Peat

ABOUT eight gallons of liquid fuel can be obtained from one ton of peat under laboratory conditions, according to results obtained at the Leningrad Industrial Institute. The fuel is a mixture of gasoline, kerosene, crude oil for diesel engines, etc. It is claimed that the fuel so produced costs only half as much as the usual type obtained from oil, and is in some cases superior in practical value, particularly the fraction used in diesel engines.

The U.S.S.R. considers the results obtained in this field of great importance, in view of the large deposits of peat in Leningrad province.

A comparative test of the new fuel, side by side with ordinary gasoline, for use in motor cars, is under way and a test run is being made from Leningrad to Moscow in which some of the cars will run entirely on gasoline made from peat.

Science News Letter, April 13, 1935

IN SCIENCE

ANTHROPOLOGY

Skulls Not Reliable Guides to Race

SKULLS are not the infallible indices to race which scientists once thought they were, declares Dr. Ales Hrdlicka, curator of physical anthropology of the Smithsonian Institution. They change in shape and relative dimensions within a few generations if the life environment of a people changes. And if you can get a large enough series of them you will find that there is no such thing as a line of racial discontinuity; they grade off insensibly into other skull types in all directions.

Assertions that the Scandinavian region was once inhabited by a negroid people, and that modern Eskimos are like Europeans of 14,000 years ago, based on the study of skulls, Dr. Hrdlicka characterized as erroneous.

The changeability of skull shapes in modern times is well illustrated by the 12,000 Indian skulls in the National Museum collections, which have been carefully studied by Dr. Hrdlicka. He finds that since they left their old hunting ways for the comparatively sedentary life of the reservations, American Indians have been getting stouter, setting up certain muscular strains that in turn have caused slight but statistically important changes in the skull shapes. Furthermore, the deterioration of Indian teeth in the past few generations has been bringing about changes in their jaws.

Science News Letter, April 13, 1935

CRIMINOLOGY

German Women Murderers Always Use Poison

GERMAN women who commit murder are always Borgias. They invariably choose poison as the means of causing death, R. Heindl found from a study of crime statistics of recent years. In every case in which a revolver, knife or other weapon was used, the woman was not alone in her crime but had a male accomplice.

Science News Letter, April 13, 1935

E FIELDS

INVENTION

New "Shorthand Machine" Writes Whole Words

WHOLE words of plain language, instead of symbolic groups of letters requiring a professional operator to interpret, are the product of a new German "shorthand machine." It is similar to the one known in America under the tradename "Stenotype," except for that feature, which enables the "boss" to read his secretary's notes as fast as he dictates them to her.

The German contrivance has 65 keys, on which the operator strikes all the letters in a word at the same time, using all fingers, piano-chord fashion. Thus a word of ten letters or less can be written at a single stroke. If there are more than ten letters, the operator strikes as many syllables at the first stroke as possible, and then the rest of the word on the next.

The words are printed one above the other on a strip of paper like adding-machine paper, which feeds up one line after each stroke. The letters are usually not uniformly spaced in the words, as in print or typescript: "brief" appears as "b r i e f," and "script" as "scr i p t." But the words are still easily readable by anyone. Except for the matter of convenience and esthetics, the typed tape itself might be mailed instead of having a transcript made on the typewriter.

Science News Letter, April 13, 1935

GEOPHYSICS

Elastic Rock Layers Found 35 Miles Down in Earth

ELASTIC layers of rocks, their cracks and pores ironed out by the tremendous weight of the earth's crust, are believed to exist 35 miles down from the earth's surface, according to preliminary results of experiments now in progress at Harvard University.

In an attempt to explore the composition of the earth's crust in regions so deep that they can in all probability never be examined by drilling holes, Dr. Albert Zisman has conducted research on the

contraction of rocks under tremendous pressures ranging up to more than six tons per square inch.

Laboratory tests have been conducted thus far on granite, norite and other common rock formations. Cores are cut from solid rock in three directions, perpendicular to each other, and placed in a closed chamber full of kerosene, where the pressure is applied. Delicate apparatus is used to measure minute changes in the size of the cores under pressure.

Checks on Dr. Zisman's figures by field tests were conducted by Dr. L. Don Leet, director of the Harvard Seismological Station by dynamite explosions in places where the composition of the earth's crust is known. Vibrations set off in this manner travel not only along the surface but go deep into the ground and bounce back again to the surface at various distances from the source. Portable seismographs were used and computations on the velocities of the vibrations recorded in this way were made to indicate the elasticity of rocks at certain depths. Very close correlation was found between the results of the laboratory and field experiments.

Science News Letter, April 13, 1935

PHYSIOLOGY

Wins Prize for Research On Sex Hormone

DR. WILLARD M. ALLEN, young chemist of the University of Rochester, will receive a bronze medal and a prize of \$1,000 for his research on progesterin, one of the female sex hormones, the American Chemical Society has announced.

Working with Prof. George W. Corner of the University of Rochester and later with Dr. O. Wintersteiner of Columbia University, Dr. Allen succeeded in obtaining the sex gland product in pure form. This particular hormone has the function of preparing for the development of the offspring while in the embryonic stage. Dr. Allen's research was the basis of the discovery of the hormone's chemical formula, recently announced by two German scientists, Dr. K. H. Slotta of Breslau and Prof. Adolf Butenandt of Danzig.

The prize, which will be presented during the meeting of the American Chemical Society the week of April 22, was given by the Eli Lilly and Company Dr. Allen will be the first recipient of this newly-established prize award.

Science News Letter, April 13, 1935

PHYSIOLOGY

Heavy Water Slows Rate of Heart Beat

"HEAVERY water," with a fifth of its hydrogen the now famous double weight variety, slows the rate at which the heart beats and should provide a method for controlling the rate of other body processes, Drs. T. Cunliffe Barnes and J. Warren have found in experiments conducted at the Osborn zoological laboratory at Yale University.

This is the latest study on the controversial question of whether or not heavy hydrogen (deuterium to chemists) is harmful to life.

The Yale investigations were made on frogs' hearts removed from the bodies. The investigators do not state (*Science*, April 5) whether this slowing effect of heavy water would be apparent in humans drinking it.

Studies of heavy water's effect on the body should be made on experimental animals, until more is known about it, in the opinion of its discoverer, Prof. H. Urey of Columbia. Presumably this is also the opinion of the Yale investigators.

The frog's heart, when placed in a solution made up with ordinary water, beat at the rate of ten beats in slightly over eleven seconds. In the same solution made up with heavy water, the rate was over 16 seconds for ten beats. Further experiments continued to show this slowing effect of the heavy water. In each case, the effect of the heavy water was similar to that produced by a lowering of temperature, the Yale investigators state.

The effects of the heavy water are what would be expected, they point out, because of the lower energy content of chemical systems involving heavy hydrogen.

Science News Letter, April 13, 1935

AGRICULTURE

If Cows Have No Hay, Let Them Eat Potatoes

FEED low-price potatoes and cabbage to cows to replace part of their too-expensive hay, is the recommendation of the extension service of the New York State College of Agriculture at Cornell University. Price ratios, based on the comparative nutritive values of the "garden-sass" substitutes, show when they become less expensive than hay as cattle feed.

Science News Letter, April 6, 1935