

facturers are most reluctant to risk the same road again.

No sane chemical concern is willing to hazard its permanent research programs of peacetime activity for hasty war booms. Just before the European conflict, orders from abroad for certain war articles of chemical manufacture went begging in the American market. Only if America enters the fight will this policy change.

Some readjustments common to all industries are foreseen due to the war, but increased demands from countries now at war can be handled without undue plant expansion.

*Science News Letter, October 28, 1939*

ANTHROPOLOGY

**Ancient Russian Skull Like American Indian's**

See Front Cover

**T**HE HALLOWE'EN appearance of the front cover of this week's SCIENCE NEWS LETTER is given it by the skull of some ancient of Russia just brought to America for Dr. Ales Hrdlicka of the Smithsonian Institution.

A new discovery, it strongly supports the theory that the American Indians came from Asiatic races, because it is almost identical in appearance with skulls of North American Indians.

*Science News Letter, October 28, 1939*

ENGINEERING

**Lighted Guide Lines Make Night Roads Safer**

**L**ATEST idea for making the roads safe for night driving: Illuminated guide lines a yard or two long set into the road's center every fifty feet made of tubular lighting covered with a red phenolic transparent plastic. The idea is also applicable to runways on airplane landing fields.

*Science News Letter, October 28, 1939*



**Clocked by the Sun**

**S**CIENTIFIC evidence points very strongly to the powerful influence of the daily hours of light timing the occurrence of all kinds of biological processes. Some are initiated by the gradual lengthening of days in spring, others by the gradual shortening of days in autumn.

The phenomenon, now known by the technical name of "photoperiodism" was first discovered in plants by two research workers in the U. S. Department of Agriculture. They found that lengthening days stimulated spring flowers to bloom, and that shortening days had the same effect on plants that blossom in late summer and autumn, like asters, cosmos, gentians and the pestiferous ragweed.

Basic method of experimentation was simple, though it involved some fairly heavy equipment. Growing-houses for the plants were so arranged that daylight could be completely cut off before sunset if desired. For the opposite effect, large numbers of electric lamps supplied artificial sunshine after the sun had gone down. By proper manipulation of their lengths of day, plants could be made to bloom practically at the will of the experimenters, or kept from flowering for several seasons on end.

First tests for possible effects of length of day on animals were made by a western Canadian zoologist. He caged small birds of migratory species when days were shortening in the fall, and gave them artificially lengthened days, simulating spring. When released, the birds flew north instead of south.

Since these pioneer experiments, some twenty years ago, the results with both plants and animals have been confirmed and greatly extended by biologists in this country and Europe. The importance of length of day in the reproductive cycle of animals having a definite breeding season has been established especially by work done in Connecticut.

The mechanism by which changing day-length affects plants is not yet definitely known, partly because plants have no special light-sensitive organs, like the animal eye. But it is apparently pretty well proven that in animals the light stimulus works through the eye on the internal glands, especially the pituitary "master gland," situated beneath the brain. The secretions of these glands in turn have important effects on the behavior of the animals.

*Science News Letter, October 28, 1939*

ARCHAEOLOGY

**Museum Exhibits Pair of 1500-Year-Old Horseshoes**

**A** 1500-YEAR-OLD pair of small iron horseshoes which probably once shod the hooves of a Swiss Lake Dweller's horse is now on exhibition at the Field Museum of Natural History. It represents the last cultural phase of the Lake Dwellers of Lake Neuchatel. Iron horseshoes were known by the fifth century.

*Science News Letter, October 28, 1939*

CHEMISTRY

**Peat Yields Kerosene In New Soviet Plant**

**F**ROM Soviet scientists, according to Tass: Peat is yielding kerosene, benzene, carbolic acid, wax, ammonium sulfate, etc., through a year-round artificial drying of peat under pressure in autoclave at 180-200° Centigrade. Waste left is used for production of alcohol and yeast.

The first plant near Leningrad is nearing completion with a capacity of 300,000 tons dry peat annually. Oil spouts from three wells off the coast in the Caucasian Sea near Baku like the petroleum drilled from under the sea off U.S.A. California coast.

*Science News Letter, October 28, 1939*

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