THE SCIENCE NEWS-LETTER

A Weekly Summary of Current Science

EDITED BY WATSON DAVIS

ISSUED BY
SCIENCE SERVICE
1115 Connecticut Avenue
WASHINGTON, D. C.

EDWIN E. SLOSSON, Director
WATSON DAVIS, Managing Editor

SUBSCRIPTION: $5 A YEAR, POSTPAID

Vol. II, No. 106 Saturday, April 21, 1923

Dr. Edwin E. Slosson

CHATS ON SCIENCE

DO THE PAPERS LIE ABOUT SCIENCE?

Professors as a rule have a poor opinion of the press. They are apt to think that editors are not merely regardless of the truth of the scientific "stories" they print but that they publish by preference the most absurd and sensational stuff to be found. It is a common faculty saying about newspaper science that "what is new is not true and what is true is not new". It is also a common complaint in pedagogical circles that the newspapers do not pay much attention to science anyhow, that what little they do publish is antiquated and unreliable, and altogether unworthy the notice of educators.

But it has occurred to two scientific men to apply the scientific test to the prevalent opinion of scientists and see whether it is true or false. Or, rather, to find out to what extent it is true and false, for to the scientist everything is relative and must be measured.

The place where this experimental method was tried was, as we might anticipate, the experimental school of Teachers College, Columbia, called the Lincoln School, which, although a new institution , has already exploded several scholastic fallacies

The School has now another such scalp to its credit for its Director, Otis W. Caldwell, in collaboration with Charles W. Finley, has just reported the results of their statistical study of "Biology in the Public Press", which shows that scientists in this field at least, have less reason to complain than they thought they had. Fourteen prominent papers in as many different cities from Boston to Los Angeles were taken for a month and all the articles dealing with biological topics were clipped and classified.

The number of biological articles found during the month was 3,961 and of those only 14 are classed as "Fictitious". Four of these appeared in one paper, (San Francisco). Of the others, two at least cannot be regarded as serious and deliberate attempts to deceive. One is a humorous account of a hoodo black cat on Halloween and the other tells of a rooster who had been named Harding and taught to smoke cigarettes. But I have known very strange things to happen on Halloween, even on the campus, and I have been told by a reputable scientist of a rooster that would eat cigarettes, and surely chewing tobacco is as hard as smoking it, especially when one is toothless.

Fortunately the fakes are short. There are 25,596 inches in the total and the fictitious matter only measures 48, so that according to space one would have to read on the average 500 inches of newspaper biology before he would strike an inch of fiction. Not of course that the biologists are willing to O.K. in detail all the

other 499 inches. But they say that "gross misstatements of fact were not common" and on many of the dubious points there was room for honest differences of opinion. As for its being antiquated stuff, Messrs. Finley and Caldwell affirm that "Newspapers appear to be more up-to-date in things biological than are college and high school texts on the subject," and in conclusion they turn tables on the teachers by advising them to make use of newspaper articles in classroom instruction in order to show that biology "is meaningful to the student". The professional nature faker is going out of fashion.

READING REFERENCES- Charles W. Finley and Otis W. Caldwell, Biology in the Public Press. New York, Lincoln School of Teachers College, 1923.

NEWS OF THE STARS

By Isabel M. Lewis,
of U. S. Naval Observatory

WATCH FOR ZODIACAL LIGHT

Very few people in mid-latitudes have ever seen the zodiacal light though it is well known in the tropics where it is always seen at its best. There it appears shortly after sunset or before sunrise as a band of soft, hazy light, somewhat resembling the Milky Way, extending under good seeing conditions entirely across the heavens along the ecliptic. Directly opposite to the sun there is a widening or swelling of this band into an extremely faint oval patch known as the "gegenschein" or counter-glow. This feature of the zodiacal light is very rarely seen in our latitudes owing to its extreme faintness. The zodiacal light is seen at its best in the tropics because it lies along the ecliptic, or the apparent path of the sun, which there passes high across the heavens. In the higher, northern latitudes the light is seen to the best advantage on April evenings because then the ecliptic rises most sharply from the western horizon and its path passes more quickly out of the dense atmospheric haze close to the horizon that spoils the visibility of all objects.

So faint is the zodiacal light that it cannot be seen in the presence of moonlight and the time to look for it is from a few days past the time of full moon up to a day or so after the time of new moon, or for this year from about April 5 to 18. If the night is clear and the seeing good it should appear in the western sky between one and two hours after sunset as a hazy wedge-shaped light twenty degrees or so wide at its base on the horizon and narrowing gradually until it fades away. It rarely extends as far as the meridian in high latitudes, though occasionally it has been seen as a narrow band stretching nearly across the sky. Its path, lying along the ecliptic, will start in the zodiacal constellation of Taurus which is now on the northwestern horizon. From there it will pass to the north of Orion into the zodiacal constellation of Gemini, to be distinguished by the twin stars Castor and Pollux which are a few degrees apart and which are among the brightest stars now visible. It is not likely that it will be possible to trace the zodiacal light as far as the constellation of Leo, also one of the zodiacal groups, which now lies close to the meridian and which can be distinguished by its sickle-shaped group of stars with Regulus, a star of first magnitude, at the tip of the handle. The gegenschein is so extremely faint that we can scarcely hope to glimpse it. It has

been seen by only a very few people in northern latitudes. At the time of which we are speaking it should lie in the constellation of Virgo not far from the first-magnitude star Spica, as this point is now directly opposite to the sun.

The zodiacal light is caused, it is generally believed, by the reflection of sunlight from myriads of dust-like particles surrounding the sun in or close to the plane of the earth's orbit and extending to some distance beyond it. Some believe it is a form of nebulosity permeating and enveloping the entire solar system. Possibly the material of which it is composed has gradually been expelled from the sun itself in the course of the ages under the action of light or radiation pressure.

READING REFERENCES- Douglass, Andrew Ellicott. Zodiacal light and counterglow and the photography of large areas and faint contrasts. London, Harrison and Sons, 1916. Harvard University Observatory. Researches on the zodiacal light and on the photographic determination of the atmospheric absorption. Made under the direction of Edward C. Pickering. Cambridge, J. Wilson and Son, 1893. Newcomb, Simon. An observation of the zodiacal light to the north of the sun. Astrophysical Journal Vol. xxii, No. 3, October, 1905.

SPRAYED COTTONWOODS SHED NO COTTON

The cotton of the cottonwood, the popular shade tree of many American cities, need no longer be a drawback to the tree's utility, according to W. H. Long of the Albuquerque, N. M., station of the U. S. Bureau of Plant Industry who has developed a spraying treatment which will prevent the growth of the cotton-bearing blossoms without injury to the tree. The same treatment may be given trees of allied species which blossom before the leaves come out.

It consists of spraying the blossoms as soon as they open in the spring with a very dilute solution of sulphuric acid, preferably of a strength of two per cent. This kills the blossoms which later in the season would otherwise produce the tufts of soft downy cotton that strew the streets and fill the air along streets planted with cottonwoods to the annoyance of the property owners.

It is hoped that this solution of the problem of what to do with the large cottonwoods which are the only shade trees in so many western cities but which because of their "moulting" proclivities are in some cases being cut down or trimmed back severely enough to prevent blossoming for several years. The cost of spraying in Albuquerque is between 22 and 32 cents a tree. The treatment might also be of value in eastern cities where streets are shaded either with the cottonwood or the related species of Carolina poplar.

Cottonwood trees are of two kinds. One bears the flowers which later produce the pods in which the cotton is formed. The cotton carries the tiny seeds of the tree and enables them to float for long distances through the air. These cotton-bearing trees are known as pistillate or "female" trees. The other kind of tree, called staminate or "male" trees, do not produce cotton. Both bloom before the leaves put out, the blooms being borne in short, finger-like bodies known as "catkins". The staminate blooms are purple in color while the pistillate, or cotton-bearing ones, are greenish, making it easy to distinguish one from the other, an important point, as only the cotton-bearing trees need to be controlled.

As the result of experiment it was found that the following sprays would kill

all the blossoms on the trees; crude oil, kerosene, gasoline, and dilute sulphuric acid. Saturated common salt solutions killed most of the blossoms and is worthy of further trial because of its cheapness. The kerosene and gasoline sprays were considered efficient but expensive, while the crude oil spray although effective was disfiguring to the trees and adjacent property.

The acid spray may be used in a power spray pump but iron parts in contant with the solution must be replaced by more resistant metal. The solution does not injure paint and is rendered harmless to lawns by watering them immediately before and afterwards. Men operating the pumps should wear old clothes or rubber coats. The solution does not injure the skin if washed off after the job is done.

The trees must in no case be sprayed after the leaves come out as the acid solution would be fatal to them.

READING REFERENCES- Williamson, A. Cottonwood in the Mississippi Valley. Washington Government Printing Office, 1913.

BRAIN CELLS UNHURT BY RAYS THAT KILL TUMORS

A clue to the mystery of cancer, of possibly great importance, has been discovered by scientists at the Memorial Hospital for the Study of Cancer and Allied Diseases who have found that while X-rays and radium rays have a destructive effect upon tissue cells, especially on the cells of cancer tissue, the cells of the brain are more resistant to their action than those of any other part of the body. Brain cells and cancer cells stand at opposite ends of a scale of susceptibility to the invisible rays.

The immediate practical bearing is in the treatment of brain tumors, which because of the delicate construction of the vital brain tissues which surround them are frequently inoperable surgically. They may now be treated by X-rays or radium rays as a treatment strong enough to damage the tumor or cancer is not injurious to the brain tissues through which the rays also pass. While X-ray treatment always has the danger of damage to healthy tissue it has now been shown that such treatment of growths in the brain may be carried on with a wider margin of safety than is possible in other parts of the body.

The work at the hospital has been carried on chiefly with radium. The institution has one of the largest supplies in the United States, four grams of the precious metal having been given the hospital in connection with a laboratory for its use by the late Dr. James Douglas.

The three sorts of radium rays, known as alpha, beta, and gamma rays vary in their penetrating power and destructiveness, the alpha being the most destructive but the least penetrating. The alpha rays are accordingly filtered out by screens of platinum through which the gamma rays pass to exert their effect in the interior of the brain. In some cases the radium emanation which gives off the rays is enclosed in platinum-cased glass capsules and inserted directly into the brain tissue, the capsules being sometimes as small as an eighth of an inch in diameter.

Explanations of the comparative resistance of the healthy brain tissue to the effect of the rays which are destructive to tumor or cancer cells, and to a less extent to other body tissues, are being sought as it is thought they will have an important bearing on the problem of what causes cancer.

FOOD RESEARCH UPSETS IDEAS ABOUT STALE BREAD

Old ideas of how bread stales are overturned by the Food Research Institute, established at the suggestion of Herbert Hoover, in its first publication just issued from its headquarters at Stanford University, Calif. The report points out the wholesomeness of the stale loaf, shows the waste produced by present bakery practices, and urges further investigation of why some bread keeps better than others.

The assumption that staleness is caused by the loss of moisture from the loaf is not tenable, for the report points out that what probably occurs is that much of the moisture in the bread is held by the starch which has been gelatinized in the baking. As the loaf comes out of the stove, this starch jelly distributed throughout the bread contains all the moisture it can hold. As the bread cools, the starch gives us some of its moisture and this moisture is absorbed by the other constituents of the loaf, changing the crust from a brittle material that crunches between the teeth to a soft and pliable one, while the gluten of the crumb is given a tough ness and firmness which as fresh bread it did not have. The bread becomes stale at low temperatures and this accounts for the fact that bread when stale, but not dry, can be freshened up by heating. The process is reversed and the stardh-jelly reabsorbs the moisture from the other bread constituents.

Losses to wholesale bakers on account of the arrangement by which they take back the stale unsold loaves from retailers run into millions of dollars a year, the report states. This tends to raise the price of bread to consumers. Before the Great War the bakeries often lost six to ten per cent and sometimes twenty-five per cent. from returns of stale loaves and many a baker has fed his ovens with this wholesome food as a fuel.

Bread a day old is quite as nutritious and to some people more digestible than that freshly baked, the publication declares. If consumers realized this and bakers were not obliged to accept returns the country would greatly gain by the economy.

READING REFERENCES- The story of the staff of life. Philadelphia, National Association of Master Bakers, 1911. The story of bread. Chicago, printed by the I.H service bureau of the International Harvester Company of America, 1921.

TENDENCY TO TUBERCULOSIS IS INHERITED, BUT INFECTION IS NOT

Although tuberculosis infection is not inherited, susceptibility to the disease is stated to be subject to the Mendelian laws of inheritance, according to a bulletin on the subject issued by Dr. Albert Govaerts of the Eugenics Record Office at Cold Spring Harbor. The percentage of tuberculous offspring is higher in tuberculous families, he states.

This is not due to direct infection from close contact for it is shown in the statistical study of many victims of the disease and their families that the proportion of cases was higher among groups of individuals who had not been in close contact with active cases of the malady. Those who were in such close contact developed the fewer cases. This is opposite from the result expected, assuming contagion to be the only factor in the disease.

The study included 5,629 individuals, members of 214 families, scattered for the most part among the rural population of many regions of the country. In all these cases there were found only 29 marriages in which both members were not only free from tuberculosis themselves but came from families entirely free from it as far as known. Only three per cent of the children of these marriages developed t disease, as compared with 43 per cent. of children of parents both of whom were tu bercular. Percentages between these limits were reported from marriages where on or both parents came of a tuberculous family, or where one parent was ill of the disease.

"The percentage of the tuberculous increases and that of the non-tuberculous decreases with the degree of the ancestral tuberculous influence. There is no evidence of a prenatal influence," said Dr. Govaerts.

As to advising persons of tuberculous ancestry with respect to marriage, Dr. Govaerts says it is justifiable only in extreme cases but that in general a tuber- culous subject will find more advantage to his progeny by marrying a person belong- ing to a resistant strain. In such cases if the descendants marry persons free from the defect it tends to breed out in the fourth and fifth generations. Marriag between two stocks in which the same defect is apparent should be dissuaded, he states.

READING REFERENCES- Hutchinson, Woods. The conquest of consumption. Boston and New York. Houghton, Mifflin Company, 1910. Otis, Edward O. Tuberculosis; its cause, cure and prevention; a rev. ed. of "The great white plague" (A book for laymen) New York, Thomas Y. Crowell Company, 1918. U. S. Veterans Bureau. Hygiene and efficiency for the tuberculous, by John Wakeman Turner. Issued by the Medical Division, United States Veterans Bureau, Washington. Government Printing Office, 1922.

NEW STEAM BOILERS DOUBLE EFFICIENCY

Engineers in this city are taking great interest in the sensational develop- ment of very high pressure steam boilers in Sweden. This apparatus instead of operating at three or four hundred pounds as a maximum, which is usually regarded as the greatest pressure for safe practice, is making steam at nine hundred pounds regularly. And modified designs which promise to be entirely satisfactory at 1,500 pounds per square inch, or one hundred times atmospheric pressure, have been prepared.

By increasing steam pressure in this fashion the boiler plant will furnish its power to the engine under conditions that will increase the efficiency of the engine by sixty to one hundred per cent depending upon the type of equipment. Such an increase realized in many steam power plants would be a big factor in these days of high fuel prices.

This new steam boiler has several novel features among the most novel of which is the generation of steam in rotating boiler tubes. The rotation of the tubes keeps all sides of the tube wet with water and tends to bring the steam bubbles all to the center of the tube so that a great deal more water can be evaporated than under ordinary conditions. It is claimed that sixty pounds of water per square foot of tube surface is evaporated and in some cases a hundred pounds per hour is possible. This is several times the maximum rate of steam and in the most effi- cient American boilers.

The success achieved in operating this equipment for over a year at Gothen- burg, Sweden, indicates that American engineers will soon be trying out similar equipment in the United States.

PLAN BIG ADVANCE IN MUSSEL CULTURE

Cultivation of the fresh-water mussel during the entire first year of its growth will shortly be undertaken on a large scale for the first time in history, it was learned at the U. S. Bureau of Fisheries in Washington. This is an important step in making more certain the supply of raw material for the great pearl button industry of this country.

Heretofore the mussel culturists have largely confined their work to getting the young bivalves well started in life during the brief period when they live a life of ease attached to the gills and fins of fish. For after their first stage of development is passed in the parent shell, they become free swimming forms with only a tiny shell. Then the little mollusks attach themselves to certain species of fish and for about two weeks live embedded in their foster parents and getting their nourishment from them.

On completion of this stage of the young mussel life, it drops off and settles down to the river bottom to become a regular mussel. There its habit of nearly always eating and having its shell open makes it an easy prey to the hooks of the fishermen.

For some years, the fish experts have engaged in inoculating fish by putting them in a tank with a large number of the free swimming mussel larvae. When the proper number had attached themselves the fish were released in the streams. This method, however, did not permit an accurate check upon the effectiveness of the work. Experiments at the Fairport, Iowa, Biological Experiment Station have demonstrated the practicability of holding the fish in large wooden troughs until the parasitic mussels drop off and then keeping the mussels for a year in the wooden tanks of running water where their growth can be observed and more easily controlled. The mussels will then be planted in their natural environment to finish the growth. About 500 species of freshwater mussels grow in the United States but those of commercial value are practically restricted to flowing waters which drain limestone regions. Most of the streams of the Mississippi Basin and some of the Great Lakes streams are inhabited by these bivalves from the shells of which are cut many of the buttons on our shirts.

ANIMAL LIGHT REQUIRES TWO COMPONENTS

Animal illumination is not so simple a procedure as it might appear to be. According to Prof. E. Newton Harvey of Princeton University and Dr. W. R. Amberson of the Nela Research Laboratories, Cleveland, not only is a substance called "luciferin" necessary for animals to "light" themselves but also another substance "luciferase", must be present. The investigators showed that these chemical compounds producing the light are so specialized that the luciferin of one animal will not cause luminescence with the luciferase of an animal of different species. For a long time it has been known that water and oxygen are also essential for light production.

More than thirty widely scattered groups of animals produce light either by means of external or internal organs. Some produce light continuously while others produce it only at intervals. The light may serve for a variety of purposes acting as a lantern for fish in the dark depths of the oceans or serving as a lure for prey. In the case of the ordinary firefly, its illumination serves as an aid in mating. One peculiar light producing animal in South America has a white "headlight" and a rear "taillight" and is consequently known as the automobile bug.

FINDS WAY TO KILL GERMS WHICH BOTHER BUSY BEES

Bees are duplicating an experience of the A. E. F. in France. As the Army medical department treated French water with bleaching powder to make it safe for soldiers to drink, so Prof. H. F. Wilson and W. A. Hadfield of the University of Wisconsin are feeding chemically sterilized food to the honey-producing insects to prevent the spread of a highly contagious germ disease among them.

Instead of calcium hypochlorite in drinking water, a dilute solution of sodium hypochlorite is being given the bees in a sugar syrup. The chemical kills the spores of Bacillus larvae which causes the destructive disease known as "foul brood", but does not seem to hurt the bees.

Concentrated solutions are also used to disinfect the hives, as the sodium hypochlorite dissolves dead bees, pollen, cocoons, and other debris, without injury to the wax. Experiments in feeding to counteract the malady in colonies already infected were unsuccessful.

BOTTLE DRIFTS 3,000 MILES IN A YEAR

A bottle drift of unusual distance and duration has been reported by the U. S Hydrographic Office. The bottle, enclosing a printed paper with directions for its return to the Hydrographic Office, was thrown overboard about 350 miles southeast of New York from the British steamer Bloomfield on Feb. 24, of last year. It was picked up on the southeast coast of Ireland on Feb. 14 of this year, having drifted about 3,000 miles.

Four other long drifts have been reported on the Atlantic in recent years. These were of bottles thrown into the Bay of Fundy in August, 1919. One was picked up on the coast of the Azores Islands-just-a-year later, another on the Orkney Islands in January, 1921, the third on the coast of North Wales in March, 1921, and the fourth on the coast of Norway in July, 1921.

The shortest of these drifts was 2,000 and the longest 3,800 miles; and if it is assumed that they were picked up soon after having been cast ashore their rates of drift across the ocean varied between 5.1 and 5.8 miles a day. The bottle recently picked up on the Irish coast had travelled about 8.6 miles a day on the same assumption, the difference probably being due to the fact that it was cast over in or near the Gulf Stream.

ECLIPSE RESULTS SOON TO BE ANNOUNCED

Whether the sun at its last eclipse favored the Einstein theory will be told by Dr. W. W. Campbell, director of the Lick Observatory, Calif., at two national scientific meetings this month.

Dr. Campbell, who is now also president of the University of California, will deliver the principal evening address at the annual meeting of the National Academy of Sciences to be held in Washington, April 23 to 25.

At the meeting of the American Philosophical Society, Philadelphia, April 19 to 21, he will make abrief announcement of the results of the expedition that went to Australia last September to determine if the sun bends star light coming past it to the earth.

Many distinguished scientists will report their researches at the meeting of the National Academy which is by act of Congress the official scientific advisory body of the Government. Membership in the National Academy is one of the highest honors that can come to an American scientist.

The American Philosophical Society was founded in 1727 and its meetings each year are the occasion of many announcements of scientific importance.

METEORS CAUSE STATICS RADIO EXPERT SUGGESTS

Atmospherics or "static", the nightmare of the radio operator, may be in some cases due to meteorites which, arriving suddenly in the uppermost regions of the atmosphere, cause electric disturbances which herald their coming to radio listeners over half the surface of the earth. That is the suggestion made by a radio expert at a scientific meeting in London recently.

He was a veteran of the Great War and while listening in on his radiophone noted the resemblance between some of the atmospherics and the swish of a shell passing high overhead. He then thought that the sound might really be due to a little "dud" of a meteorite with which the earth is bombarded continually from the depths of space, and propounded it as an interesting though possibly "mad" theory. The explanation suggested is that the arriving stranger sets up an electric disturbance which responsible for the irregular waves known as atmospherics.

HYDROGRAPHIC OFFICE TO BETTER FACILITIES AT SOO

Announcement is made by the Hydrographic Office of the opening April 1 of a complete branch office at Sault Ste. Marie for the purpose of furnishing the latest and most complete information to the captains of vessels passing through the locks during the coming season. An office has been maintained there for some years but present plans involve an increase of personnel and equipment. Mimeographed information of interest to navigators will be revised daily.

The action is taken in recognition of the growing importance of lake shipping and of the need of additional facilities at this key point of lake traffic. Although information will be broadcast twice daily from the Navy wireless at Great Lakes Training Station and other points of the lakes, not every vessel carries radio equipment and the increased facilities at the "Soo" are intended for the protection of vessels not so equipped.

Although because of the severity of the winter navigation will be late in opening, it is expected that the coming shipping season on the lakes will break all records.

PAST RECORDS GIVE CLUE TO WEATHER FORECASTERS

A system of graphical portrayal of weather data which gives promise of the possible extension of the periods to a month in advance was described by F. G. Tingley, of the U. S. Weather Bureau, to the American Meteorological Society. Tests of the system in making temperature and rainfall forecasts for Washington had given 75 per cent efficiency for periods no longer than a month in the future, he stated.

The method, which is still in the experimental stage, depends upon the construction of curves based upon observed data. Separate curves are made for every month, the data used being based upon the averages for the same month for the five year period ending with the month. A series of "smoothed" curves is thus obtained, one for each month of the year. Since the weather of each month is closely related to that of preceding and following months additional curves are worked out by combining first the primary curves and then the ones resulting from them.

The application to forecasting is made by continuing the curves into the future and then reading off the values of rainfall or temperature which they represent. The extension of the curves, or "extrapolation", as the mathematicians call it, is made more accurate in the present series of experiments by the number of curves worked out for they have to be extended in such a way as to continue to bear certain mathematical relations to each other and the greater the number of interrelated factors the greater the accuracy.

The method has so far been used experimentally in making forecasts of weather for a month as a whole, that is to predict that it will be relatively warm or cool, or wet or dry; and the results have so far been accurate in about three-fourths of the cases. The forecasts have also to be restricted to more or less definite localities if they are to have practical value.

The whole work is still experimental and Mr. Tingley expressed his conclusions with the greatest conservatism as Weather Bureau officials and students of meteorology have always been shy of long range forecasting. The present paper offers no claim of ability to state what a given day in the future will bring, but merely to point the way to a method for the prediction of the general type of weather for a month over a given region.

READING REFERENCES- Ricard, Jerome Sixtus. Long-range weather forecasting and its methods, Santa Clara, Press. Santa Clara Journal, 1911. Moore, Willis Luther. Weather forecasting; some facts historical, practical, and theoretical. Washington, Weather Bureau, 1899. Predicting winter weather by summertime temperature, Science n. s. 56; sup. 10. December 22, 1922.

At present, no protection is given to the whales and these largest of all earth mammals are often killed while nursing their young.

In 1860 there were 5,000,000 buffalo in America, in 1903 there were only 1,753 and now there are over 10,000 of these animals.

Roosts with a total seating capacity of 30,000 birds have been erected just below the light of a Netherlands lighthouse to prevent the destruction of bewildered migratory birds lured off their course by the light on foggy nights.

There are 581,000 foreign born farmers in the United States.

There is evidence that the air sacs found within the bones of birds serve as a means of relief from over-heating produced by birds' great activity.

The variations in the vitamin activity of cod liver oil is believed to be due to changes in the diet of the fish from which it is obtained or to seasonal variations in their physiological condition.

Forty-nine per cent. of the native white population and sixty-two percent of the foreign born population of this country are below the average mentally.
