

GEOGRAPHY

**Sahara Desert Spreading
One Kilometer a Year**

SAHARA desert sands are spreading southward well over a half mile a year. During the past 300 years they have encroached some 186 miles into what was once fertile farm and grazing land.

Unwise methods of farming, grazing and forest use are making a present of some of the best lands in West Africa to the Sahara Desert, Prof. E. P. Stebbing of the University of Edinburgh told the British Association for the Advancement of Science.

Prof. Stebbing's observations were made during a tour last year through parts of several British and French colonies in West Africa. Three factors, in his opinion, contribute most heavily toward this encroachment of the desert on lands once fit for human occupation.

The natives practice what is called "shifting agriculture." They clear a piece of land, burn the felled trees, cultivate the soil for a year or two or three, then move on to repeat the performance elsewhere, leaving the abandoned clearing to grow up into "bush." The forest does not take it back.

A second factor is the further destruction of the forests by fires deliberately set.

Increasing populations depending on cattle, sheep and goats have introduced the third factor, overgrazing. Stripped of its binding cover of grass, the soil dries out. Water fails, both for the restoration of the range and for the replenishment of the wells.

Science News Letter, September 14, 1935

DIETETICS

**Rhubarb and Seaweed Rival
Spinach as Vitamin Sources**

SPINACH, traditional rebellion-rouser at the younger generation's dinner table, now has rhubarb and seaweed as rivals in its role of vitamin source.

At the meeting of the American Chemical Society, Prof. E. R. Norris and Mary Simpson, of the University of Washington, reported on their investigation of the vitamin content of seaweed. Seaweed is used as food in various parts of the earth, they pointed out, and indirectly it serves as a vitamin source for all the fish and other animal life of the sea. It is therefore of practical importance to know that several species of seaweed, including those commonly used as human food, are at least fair sources of the scurvy-preventing vitamin C, and also contain vitamin B.

Results of research on spinach and rhubarb were presented in a joint paper by Drs. D. K. Tressler and G. L. Mack of the New York State Agricultural Experiment Station, and Dr. C. G. King of the University of Pittsburgh.

Spinach is not just spinach, their investigations showed. When it is raised in upland gardens it contains about 50 per cent. more vitamin C than is found in spinach raised on muck land. Also, how long it has been on the market is a matter of considerable dietetic importance, for when held at ordinary room temperatures it loses half of its vitamin C in three days and practically all of it in a week. This difficulty can be overcome by chilling, however; spinach kept in a good refrigerator showed very little vitamin C loss. Age at harvesting was not found to be much of a factor, nor was there any significant difference in vitamin content between different named varieties of spinach. The vitamin was found practically altogether in the leaves; very little was present in the stems.

Rhubarb was found to be untemperamental, physiologically. Its vitamin C content was practically constant, regardless of state of maturity. Neither was there any notable difference between the two garden varieties tested.

Science News Letter, September 14, 1935

METEOROLOGY

**Last Summer's Rainfall
Normal for Most Regions**

DESPITE drought, that came to the West in mid-summer and persisted throughout August, the summer's rainfall for the country at large this year was about normal, a summary just completed by the U. S. Weather Bureau discloses.

The study covers the period from March 1 to August 31, which embraces most of the growing season as measured by the staple crops. The precipitation was above normal in most Central Valley sections, the eastern Great Plains, parts of the Middle Atlantic region, the southeastern coast, the far west and the Northeast.

Rainfall was deficient in the Southwest, most of the Northwest, and in some New England and Southeastern localities. In western Kansas and eastern Colorado, famed as the "dust bowl" of the great drought of 1934, there was still a marked rainfall deficiency, precipitation being less than 75 per cent. normal, while in southern New Mexico and western Texas it was less than half.

Science News Letter, September 14, 1935

IN SCIENCE

PSYCHOLOGY

**High School Students Worry
About Money, Not Sex**

YOUNG people today are much more concerned over money problems and their health than they are over sex, despite present-day grown-ups' concern over "necking."

A survey of junior and senior high school students shows that they consider their most serious problems to be in the fields of money, health, study habits, and personal attractiveness, Dr. Percival M. Symonds, of Teachers College, Columbia University, told psychologists at the meeting of the American Psychological Association.

The least problem concern of these boys and girls is sex, he said.

The problems of boys and girls are very much alike, it was found, but the boys showed somewhat greater concern over matters relating to sex and money. Girls are more concerned over whether they are personally attractive.

Interests, like worries, are much alike for both sexes and are stronger concerning health, recreation, money, and manners and courtesy, and least with respect to the daily schedule and civic affairs.

Boys are more interested than are girls in health, sex, safety, and money, and show less interest than do girls in manners, personal attractiveness, the daily schedule and getting along with other people.

Science News Letter, September 14, 1935

METEOROLOGY

**Twin Hurricanes Rare
Event in American Weather**

LABOR Day's twin hurricanes, that lashed opposite sides of the Gulf of Mexico and wrought havoc in Florida, were an unusual occurrence in American weather. As a rule, only one of these roaring disturbers of the peace of the tropic seas turns up at a time.

The first pair of hurricane twins ever to appear in American waters, so far as U. S. Weather Bureau records indicate, occurred on Sept. 5, 1933. Two more pairs appeared during that year, which was an all-time record year for hurricanes, with a total of twenty.

Science News Letter, September 14, 1935

E FIELDS

PSYCHOLOGY

Satisfied Teachers Older, Come From Happier Homes

WHAT sort of person can be happy in a teaching job?

This question is partly answered by replies of 500 teachers to about 200 questions circulated by Dr. Robert Hoppock, of the National Occupational Conference, and reported to the American Psychological Association. The 100 best satisfied with their jobs were compared by Dr. Hoppock with the 100 who were least satisfied.

Satisfied teachers are more often those who enjoy better relationships with their superiors and associates, he found. They feel that they are more successful. More of them teach in large cities. They average about seven and a half years older than the dissatisfied group.

Dissatisfied teachers show more signs of emotional maladjustment. More of them report that their parents were not happily married.

Science News Letter, September 14, 1935

BIOCHEMISTRY

Anti-Anemia Substance Isolated From Liver

A SUBSTANCE which appears either to be, or to contain, the long-sought active chemical principle in liver—responsible for the wonderful effect of liver in regenerating blood in pernicious anemia—has been isolated by Drs. H. D. Dakin and Randolph West of Presbyterian Hospital, New York.

Dr. George R. Minot and Dr. William Murphy of Harvard Medical School first showed the value of liver as a remedy for this previously fatal disease. The nature of the haematopoietic, or blood-producing, factor in liver has, however, hitherto remained elusive although many scientists have been on its track. Drs. Cyrus H. Fiske, Y. Subbarow and Bernard M. Jacobson of Harvard Medical School, at the meeting in Atlantic City, N. J., of the American Society for Clinical Investigation, announced apparent progress in this research.

The substance now reported by Drs. Dakin and West is obtained from liver extract by a highly specialized process of

precipitation. It has been tested clinically on a considerable number of patients of the Presbyterian Hospital, and the large majority of cases have markedly responded to it.

In one of a number of similarly satisfactory cases the count of red corpuscles had increased from 0.9 million to 2.1 millions and the proportion of the special kind of blood cells called reticulocytes had increased from three per cent. to twenty-eight per cent. on the twelfth day after the beginning of treatment.

The substance is given by injection; it appears to be of proteid character, there being thus a tendency for its chemical nature to be changed—and its potency decreased—by digestion if administered by mouth.

With the proper caution of research workers, Drs. Dakin and West point out that the available evidence seems to be actually against the view that the substance which they have isolated is of a single chemical nature.

Science News Letter, September 14, 1935

GEOLOGY

Lake Erie Was Once Part Of Vast Island in Sea

LAKE ERIE, now one of the world's largest bodies of fresh water, was solid land, and part of an island surrounded by salt water, some 300 million years ago.

This picture of one episode in the ups and downs of the earth's uneasy, heaving crust is given in a report to the Smithsonian Institution by A. S. Warthin of Vassar College and G. A. Cooper of the staff of the U. S. National Museum in Washington.

This ancient sea covered most of New York, Ontario, Michigan and the surrounding country, but had a great island, or possibly an area of very shallow water, in the territory covered by most of Lake Erie and the states of Ohio, Indiana and southern Michigan.

So shallow was the sea in wide stretches that its bottom was literally alive. Instead of having relatively restricted coral reefs in narrow zones, it had innumerable low mounds of coral spread over a considerable area. Elsewhere, as in the neighborhood of the present Alpena, Mich., they rose into the form of small, conical hills.

On the margins of the coral formations, crinoids, often called "sea lilies," were abundant. These stalked relatives of the starfish have left greater deposits of fossils here than can probably be found in rocks of the same geologic age anywhere else in the world.

Science News Letter, September 14, 1935

PSYCHOLOGY

Baby's First Laugh Comes Because He Has Been Fed

BABY'S first laugh lights up his tiny face for the simplest of possible reasons: he has been hungry, now he is fed, and he is satisfied. Later, he learns to laugh for other causes.

Dr. C. W. Valentine, professor of psychology at the University of Birmingham, patiently watched a lot of babies of all ages, noting when and why they laughed, and collating the causes.

First laughter by a baby, he said, is traceable to a definite satisfaction: being fed. Later, at about three months, the baby will laugh when some one else laughs—he has learned social laughter.

A month later, he laughs when something sudden happens, to surprise him, or even to shock him a little. When he is half a year old, he will laugh at almost anything that is repeated often enough, and also at anything that seems incongruous or unusual.

At one year, the baby is enough a citizen of the world to be trying his powers, and whenever he finds he can perform some new stunt hitherto impossible, he rejoices with a laugh.

Only after he has passed through all these stages in the evolution of laughter does he learn the thing that seems to be the basis of so much of adult amusement, laughter at the slight discomfiture of somebody else.

Science News Letter, September 14, 1935

ICHTHYOLOGY

Flying-Fish's Fins Move, But Do Not Help in Flight

FLYING-fish do have movement in their fins while they are in the air, but it does not aid them in their flight. Definite answer to this old and long-disputed argument about flying-fish was given before the British Association for the Advancement of Science, by Dr. G. S. Carter and J. A. H. Mander.

The often-observed movement of the flying-fish's fins, they found, is transmitted to them by the tail, which continues to lash the water hard even after most of the fish is clear of the surface. Once in the air, the fins are held rigid, and the "flight" is really a glide.

Dissection of a number of specimens confirms these observations, Dr. Carter continued. There is nothing about the fin muscles that could give them the necessary movements to make them function as wings.

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