

ing it up is saved many times over by the facility with which reference is made.

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ZONE TEMPERATURES.

MY attention has been recently called by Dr. Walter H. Evans, of the United States Department of Agriculture, to an error in the temperature tables accompanying my paper on the 'Laws of Temperature Control of the Geographic Distribution of Animals and Plants,' an abstract of which was printed in my recent bulletin on 'Life Zones and Crop Zones.' The error in question relates to the effective temperature or 'sum of normal mean daily temperature above 6° C.' In the tables bearing the above heading the quantities actually given are the sums of normal mean daily temperatures (*without deducting* the 6° C. each day) for the period during which the mean daily temperature exceeds 6° C.

The temperature data, as stated on the first page of my original paper, were furnished by the Weather Bureau. Not being of a mathematical turn of mind, I did not detect the error until my attention was called to it by Dr. Evans. Corrected tables will be given in the next edition of 'Life Zones and Crop Zones.'

C. HART MERRIAM.

PHYSICAL NOTES.

DR. OLIVER LODGE, in a recent paper before the Institution of Electrical Engineers, speaks of the probable importance of leakage currents in the usual methods of telegraphing by magnetic inductance through space. This form of wireless telegraphy has usually been accomplished with long parallel wires on poles and ground returns. In some experiments made by Stephenson near Edinburgh horizontal coils of wire were used and signals transmitted half a mile with a morse key in one coil and a telephone receiver in the other. Mr. Lodge used similar coils covering areas of about 4,500 square yards and transmitted signals about two miles. The characteristics of his method are the use of an alternating current of a rather high frequency, about 380, and the tuning of the line to this frequency by the use of con-

densers, that is, the balancing of the inductance so that the current becomes equal to the induced E. M. F. divided by the ohmic resistance. As a result, he gets much greater effects than where the current is principally determined by the inductance of the circuits. This he shows by mathematical determination will be the case, the value of $2\pi\pi$ the frequency, coming in one instance in the denominator, while in the other it comes in the numerator of the expression giving the ratio between the secondary current and the impressed primary E. M. F.

F. C. C.

CURRENT NOTES ON METEOROLOGY.

THE WINDWARD ISLANDS HURRICANE OF SEPTEMBER, 1898.

THE practical advantages gained by the establishment of the new West Indian Service of our Weather Bureau are forcibly illustrated in the account of the hurricane of September 10th and 11th last, published in the September number of the *Monthly Weather Review*. The Weather Bureau Observer at Bridgetown, Barbados, sent a special cable to Washington at 12:40 p. m., September 10th, announcing the approach of a hurricane. Warnings were immediately cabled to Weather Bureau stations in the Lesser Antilles, and the officials in charge were directed to give the widest possible distribution to the warnings. Advisory messages were sent to other islands, as far west as Jamaica and eastern Cuba, to points on the South American coast of the Caribbean Sea, and to Admiral Watson's fleet, lying in the harbor of Caimanera, Cuba. The careful reports of the Weather Bureau Observers at Kingston, Jamaica, at St. Kitts and other stations also made possible an early and complete record of the hurricane.

In this connection another paper, in the same number of the *Review*, is of interest. It concerns the telegraph service of the Weather Bureau with the West Indies, and is illustrated by a chart showing the routes of the submarine cables over which reports are transmitted and the points at which the cables connect with the land lines.

At the December meeting of the Royal Meteorological Society (London) Captain A. Carpenter, R. N., gave an account of this disastrous hurricane.

Its diameter was 80 miles as it approached Barbados, and 170 miles after leaving St. Vincent. The actual storm center, in which the force of the wind greatly increased, was only 35 miles in diameter until St. Vincent was passed, but after that the strength of the wind extended to 170 miles from the center. The diameter of the calm vortex was not less than four miles. The storm was accompanied by very heavy rainfall, the amount at St. Vincent being about 14 inches in 24 hours. In Barbados 11,400 houses were swept away or blown down and 115 lives were lost, and in St. Vincent 6,000 houses were blown down or damaged beyond repair, and 200 lives were lost.

PROBABLE STATE OF SKY ALONG THE PATH OF
THE ECLIPSE, MAY 28, 1900.

PROFESSOR F. H. BIGELOW, in the *Monthly Weather Review* for September, considers the probable state of the sky along the path of the total eclipse of the sun, May 28, 1900. His conclusion is as follows: "It would be much safer for the eclipse expeditions to locate their stations in the northern portions of Georgia and Alabama, upon the southern end of the Appalachian Mountains, where the track crosses elevated areas, than nearer the coast line in either direction northeastward toward the Atlantic coast, or southwestward toward the Gulf coast; on the coast itself the weather is more unfavorable than in any other portion of the track." Professor Bigelow's paper is illustrated by means of a chart.

NOTES.

THE November number of *Climate and Crops, Illinois Section*, in commenting upon the statistics of losses by lightning in Illinois during 1898, says: "A survey of the reports shows a very marked increase in the loss of stock due to the wire fence, and the urgent need of frequent ground wires in those in use." (See note in this connection in *SCIENCE*, Dec. 2, 1898, p. 785.) R. DEC. WARD.

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CURRENT NOTES ON ANTHROPOLOGY.

THE OLDEST SKULL-FORM IN EUROPE.

IN the *Centralblatt für Anthropologie* (Heft. 4, 1898) are some abstracts touching the skull-

form which is believed to be the oldest in Europe. It is represented most perfectly by the remains found at Spy. The characteristics are: uncommon length, moderate width, very limited height, retreating forehead, prominent but depressed supra-orbital ridges and narrowed post-orbital diameter. Dr. Fraipont argues sharply for the genuine ancient character of the Neanderthal skull, and Dr. Schwalbe does not regard that found at Egisheim as a good type. As for modern examples simulating the Neanderthal skull the latter asserts that, while they may resemble it in one or another point, they never present the group of inferior criteria which characterize its measurements.

THE SUPPOSED 'OTTER TRAP.'

DR. ROBERT MUNRO in his excellent work, *Prehistoric Problems*, has a chapter on a curious object found in the peat bogs of Europe, from Italy to Scotland and North Germany. He has recently supplemented that chapter by an article describing further examples. (*Jour. Roy. Soc. Antiquaries of Ireland*, September, 1898.)

The object is a thick board or plank, two to three feet long, in the center of which is an oblong aperture four to six inches wide, closed by one or two valvular doors. The purpose of this arrangement is obscure. Dr. Munro argues that it is an otter or beaver trap, while others have explained it as a boat-model, a sluice-box, a float for lines, etc.

The suggestion which I would offer for its use differs from any I have seen. It is doubtful that the valves could hold firmly an otter or any such animal. The purpose for which it would be entirely suited would be that of the inlet to a fish-weir. The valves, opening inward, would allow the fish to enter and would prevent their exit. Similar, though not identical, devices are in common use.

ANTHROPOLOGICAL STUDY OF FEEBLE-MINDED
CHILDREN.

IN a supplement of the 48th annual report of the managers of the Syracuse State Institution for feeble-minded Children, Dr. Alex. Hrdlicka presents an anthropological study of a long series of these unfortunates. It includes their family conditions, the supposed etiolog-