NEW HYPSOMETRIC MAP OF THE RUSSIAN EMPIRE.

Lieut. Col. Jules de Shokalsky, president of the Imperial Geographical Society of St. Petersburg (now Petrograd), has just sent us copies of his beautifully shaded and lithographed hypsometric map of the Russian Empire,[1] which presents the general topographic features of the empire by means of 15 shades among the three colors blue, green, and brown—and on a scale of 1:12,600,000 or, about 200 miles to the inch.

The gigantic proportions of the Empire and the lands falling under its influence are admirably impressed upon the reader of this chart. Extending from the longitude of Berlin and Copenhagen on the west (about 18° W. of Pulkova) to Bering Strait on the east (about 160° E. of Pulkova), from Franz Josef Land (80° N.) on the north to the latitude of Korea and Peshawar (about 34° N.) on the south, this chart embraces an area almost double that of the United States and with as great a variety of topography.

The use of a deep green for those land areas below mean sea level about the Caspian Sea, of lighter greens for areas between sea level and 500 meters above, together with 7 shades of brown for altitudes between 500 meters and the summits of the Himalayas, is in accord with international usage and serves to develop the pronounced hypsometric contrasts of the Empire. Americans will be surprised to find such a large percentage of the total area lying below 500 meters (1,640 feet) above sea level; from the Baltic to Rasnoŝarsk, or over a stretch of 70° of longitude along the parallel of 60° N., the Trans-Siberian Railway does not exceed this altitude save for the short crossing of the Urals (about 500 meters) at Ekaterinburg.

As a whole, the map is not unduly loaded with place names (those given are in Russian), and the general effect of the above colors, together with five shades of blue indicating the topography of the ocean floor, is very pleasing. The only disturbing feature of the map is the heavy double black line showing the courses of the single-track Russian railroads. Many also will find it inconvenient to have to correct the published longitudes in order to bring this map with its 0° meridian at Pulkova into harmony with the standard Greenwich meridian; but when consulting this map alone it is also a convenience to have the meridians numbered from a prime meridian that is shown on the map itself.

All students of Asiatic meteorology, climatology, and geography will find this map an indispensable aid in securing a proper idea of the topographic features which are such an important factor in determining the weather, climate, and human activities of the great Slavic Empire and its Mongolian neighbors. We all owe the skilled and indefatigable compiler our thanks for this convenient map, and it is to be hoped that an English edition of this chart may soon appear in equal perfection.—C. A. jr.

[1] Carte hypsométrique de l'Empire Russe. Essai de représentation du relief de l'Empire, par J. de Schokalsky. Échelle, 1:12,600,000. Size, between neat lines, 46.3×68.1 cm. (18¼×26¾ inches). Lithographed in 4 colors.

THE HOTTEST REGION IN THE UNITED STATES.

Under this caption we presented in the June, 1915, REVIEW an interesting article by Mr. George H. Willson, wherein the statement is made that the highest temperature at Greenland ranch, Death Valley, Inyo County, Cal., was 134° F. We have just received through Mr. Willson the following statement by F. W. Corkill, mill superintendent of the Pacific Borax Co.:

> Regarding the temperature of 134°F., which was recorded [at the Greenland ranch] on July 10, 1913, I will state that this record should be considered correct. I remember the day very distinctly, as a man by the name of Busch perished in the valley north of the ranch that day on account of the heat. I do not know in which direction the wind was blowing on that day, but it was blowing very hard from either the north or the south. The chauffeur who was with Mr. Busch at the time he perished also very nearly lost his life. I saw him a few days later and he said that a terrific wind prevailed in the valley on that day.

RELATION BETWEEN DEPARTURES FROM THE NORMAL IN THE STRENGTH OF THE TRADE WINDS OF THE ATLANTIC AND THOSE IN THE WATER LEVEL OF THE NORTHERN EUROPEAN SEAS.[1]

By P. H. GALLÉ.

[Reprinted from Science Abstracts, Sec. A, June 25, 1915, § 649.]

Mean values from Norwegian, Dutch, German, and Finnish tide gages disclose an annual periodicity in the water level of the North Sea and Baltic showing a minimum in spring and a maximum in autumn, with an amplitude of about 18 cm. The author considers it probable that these fluctuations are caused by fluctuations in the strength of the North Atlantic current, which itself is a branch of the Gulf Stream. There is evidence that fluctuations in the strength of the Gulf Stream are closely associated with changes in the strength of the trade winds, and as observations of the trade winds are more numerous than current observations, an attempt is made to ascertain the correlation between the North Sea water level and the trade-wind strength. Curves showing the annual variations of these two elements lend support to the theory that monthly fluctuations in the strength of the northeast trade winds are responsible for the monthly fluctuations in the water level of the North Sea and Baltic, there being a time lag of about two and one-half months in the action. In addition to this effect by the distant trade winds it is found that the local winds in the neighborhood of the entrance to the Baltic from the North Sea also produce some effect on the water level.—*J. S. Dines.*

[1] See Proc., K. Akad., Amsterdam, Apr. 23, 1915, 17:1147-1158.

THE ROBINSON ANEMOMETER.[2]

By K. SCHREBER.

[Reprinted from Science Abstracts, Sec. A, June 25, 1915, § 650.]

The results of experiments to determine the constants of a small cup anemometer (cups, 38 mm. in diameter; arms, 45 mm. long) are described. The anemometer was mounted in the center of a box 35×35×50 cm. in dimensions, of which one end was open, while the opposite end could be opened or closed at will. The box was placed in the middle of the wind channel of the Aerodynamical Institute at Aachen, and arrangements were made for recording automatically the time at which each revolution, or, if desired, each quarter revolution, of the cups was completed. In order to determine the constants of the anemometer, the following general relation between the angular velocity ω of the cups and the velocity v of the air passing them was taken, it being assumed that the quantities a, b, c, d, e, and f are constants of the instrument, independent of v and ω—

$$d\omega/dt = a + b\omega + cv + d\omega^2 + ev\omega + fv^2.$$

[2] See Meteorol. Ztschr., August, 1914, 31:373-380.