

to have been easier to enter King's Bay than fjords farther south, but until late in July the pack on the west coast of Spitsbergen more or less met the pack of the Greenland Sea, and on this account it was not easy to reach the open water north of Prince Charles Foreland. Storfjord seems to have been clear of ice in September, and possibly in August. Reports from the Kara Sea are scanty, but the ice conditions there seem to have been bad. No vessel attempted to make the passage in 1917.

RAINFALL IN MYSORE DURING 1916.

[Abstract reprinted from *Nature*, London, May 30, 1918.]

The report on rainfall registration in 1916 in Mysore includes maps showing the actual rainfall for the year 1916, and the average annual rainfall for the period 1870-1915. On June 25, 1916, more than 16 inches of rain fell during 24 hours at Nagar in the Shimoga district; the total rainfall at that place during June was 38 inches, nearly 50 per cent above the normal, although the total fall for 1916 was practically normal at 104 inches. The rains during October and November, 1916, were above the normal on account of an exceptional number of cyclonic storms, which originated in the Bay of Bengal. The rains were on the whole but half of the normal during the cool-weather period, January and February, and also during March, the beginning of the hot-weather period. The deficiency was more than made up during the rest of the year, especially in the northeast monsoon period from October to the end of the year. The tables occupy 58 pages and give the details for the 224 stations under various heads; a notable table is that which gives the distribution in the river valleys.

CLIMATIC NOTES ON PALESTINE, MESOPOTAMIA, AND SINAITIC PENINSULA.

[Abstract reprinted from *Nature*, London, May 30, 1918.]

Weather controls over the fighting in Mesopotamia, in Palestine, and near the Suez Canal is the subject of an article by Prof. Robert DeC. Ward, of Harvard University, in the *Scientific Monthly* (New York, April). Mesopotamia is characterized as "a country of aridity, of intense summer heat, of deserts and steppes, of relatively mild winter, and of cold-season rains." The mean temperature at Bagdad for January is given as 48.7° F., and for August 92.5°; the mean maximum is 119.5°, and the mean minimum 21.9°, which are the mean extremes in the year. Winter frosts occur and snow falls locally. The total mean annual rainfall is only about 8 or 9 inches, and in some years only about half as much. The rain falls between October and May, and the remaining months are practically rainless. February or March is the rainiest month, and the floods come in March and April. The climate of Palestine has been discussed by Exner and Hann, and the article quotes various data. The coast stations have a mean midwinter temperature of between 50° and 55° F., and mean midsummer temperature of 75° to 80°. The hill stations, at elevations of about 1,500 to 3,000 feet, have mean midwinter temperatures from 45° to 50°, and midsummer means from 70° to a little under 80°. In the Jordan Valley the temperatures range from 55° in midwinter to 85° or 90° in midsummer. Jerusalem averages 3.6 days a year with temperature below freezing, and the highest summer temperatures reach

100° to 105°. The annual rainfall at the coast stations ranges from 15 inches to 35 inches, and at Jerusalem it is 26 inches, no rain falling in June, July, and August. The rainy season extends from the middle of October to early in May. In the district of the Suez Canal the complete absence of rain for months together and the exceptionally small total annual fall in places immensely augments the difficulty of transport. Prof. Ward says that winter is the best season for a campaign, both on account of the better water supply and of the lower temperature.

CLOUDS AT THE ROYAL ACADEMY.

By J. S. D[INES].

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The smoke and haze which commonly obscure the sky in large cities, and the otherwise restricted outlook, allow the town dweller inadequate opportunities for the study of clouds, but to those who live in the country, and to the observant worker in a town when spending a holiday away from his native place, the ever varying cloud effects form quite as attractive an object of interest as the countryside itself. This being so, it might be thought that in landscape scenes artists would devote at least as much attention to the sky and the clouds above as to the hills and valleys below. That this is not the case will be painfully evident to the meteorologist, or even the ordinary intelligent observer of Nature, who visits the Royal Academy and makes but a cursory examination of its walls. Let it be granted at once that there are notable exceptions, but the conclusion can not be resisted that to many artists the clouds form a very subsidiary part of the picture, and are put in to produce what to the artist's eye is presumably a pleasing effect, but without the least regard to natural truth.

The majority of the clouds appearing in this year's exhibition belong to the strato-cumulus or fracto-cumulus type, though, as would be expected, the hard convection cumulus, the most striking of all clouds, is not neglected. Perhaps the most remarkable feature is the almost entire neglect of high clouds of the cirrus and cirro-cumulus types, which produce some of the most beautiful effects in Nature. Cirro-cumulus is shown in one or two sunset pictures, and a not entirely successful attempt has been made in one case to depict the sun shining feebly through an alto-stratus veil; but true cirrus is almost entirely unrepresented. In "The Passing of Autumn" (91) the meteorologist may think that he detects a fragment of false cirrus showing up against a rather fine cumulus, but the remaining clouds in this picture spoil what might otherwise have been a successful cloud study. True cumulus should surely be a cloud type which would lend itself to the artist's needs without any departure from the forms provided by Nature, but in many cases these clouds are given the most grotesque and unreal shapes, which completely spoil the picture to the observant lover of the country.

On the other hand, some of the most successful clouds in the exhibition appear in B. W. Leader's "The Weald of Surrey" (51) and A. R. Quinton's "The Road over the Downs, Sussex" (695), where clouds of the cumulus and strato-cumulus types are both true to Nature and blend admirably with the peaceful scenes depicted. Less peaceful, but with an equally admirable effect, is A. W. Parsons's "Rolling from the West" (196), where similar

clouds are depicted over the sea. In the most prominent picture of the second gallery, "Cader Idris" (87), H. Hughes-Stanton includes clouds of the cumulus type which in their hard outlines and rather unnatural coloring, are very jarring when inspected from any of the nearer parts of the room, but if the picture is viewed from the greatest distance possible the effect becomes more attractive and the lights and shadows of the clouds blend into one another in a more harmonious whole. A very similar effect is produced in the smaller work by the same artist, "Welsh Hills near Barmouth" (602).

When looking at a wide stretch of country, whether it be an extensive plain as seen from the top of a range of hills, or the hills and valleys of a mountainous country viewed from some vantage point, the most attractive effects are often obtained on a day when the sky is covered with detached clouds of the cumulus type, causing a bright contrast between the light and shade on the country below. A scene of this kind is depicted by Bertram Priestman in "The Walls of Langstrothdale" (114), but to the critical observer the whole is spoiled by the unreality of the clouds themselves, though the shadow effect on the ground is more successful. The only type of cloud which is almost uniformly well dealt with is where the "clouds" appear as mountain mists, and one concludes that artists must subject this type to much more study than the clouds in the sky above. Some of these mountain mist effects are notably good. "The Head of the Glen," by Peter Graham (439), and "Yarrow: 'The Vapors Linger Round the Heights,'" by Alfred Parsons (126), may be mentioned among others in this connection. In "Easedale Tarn, Westmorland" (207), J. H. Crossland has shown us clouds over a mountain top which are delightfully real.

Attempts to indicate showers passing over a landscape generally lead to a more successful portrayal of the dark falling rain in the shower than of the cumulonimbus cloud above. This appears to be a subject that might give far more realistic and attractive results than any shown in this year's exhibition. "The Gravel Pit," by Arthur Friedenson (583), seems to be the most successful of those exhibited. The high cloud at sunset in B. W. Leader's "Still Evening" (175) raises an interesting speculation as to the probability of the conditions shown being true to life. Bands of high cloud are brightly tinted pink in the rays of the setting sun, whereas other clouds in the same part of the sky, but at an apparently higher level, are illuminated, but without color. The writer does not remember a case of this kind coming under his observation, although it appears not to be impossible. The interesting and quite common case where the high clouds are illuminated with a pink glow, while the lower ones have already passed into the shadow of the earth, does not seem to have attracted the artist's imagination. Very interesting information as to the relative heights of different cloud layers may sometimes be obtained in these circumstances.

Observers often, in dealing with Nature herself, have difficulty in deciding to which of the artificial types of the international classification a cloud belongs, so infinite are the varieties which occur, but all meteorological observers who visit the academy will undoubtedly give a sigh of relief that they are not expected to classify the strange shapes which appear in the sky in "Evening" (233), to mention one case only, though it does not stand alone. In "Wind from the South" (383) the artist presumably set out to portray falling snow; but surely with a title so meteorological he might have given more careful

attention to the meteorological elements in his picture. Finally, all who hold that gunfire has an influence on rainfall should undoubtedly visit the academy for confirmation of their views. If the clouds over the battlefields of France really take the forms shown in some of the pictures (notably "Dawn," 333), few will have the hardihood to maintain that the rainfall or even the entire climatic conditions of the neighborhood may not be seriously affected.

Grove Karl Gilbert, 1843—1918.

Dr. Grove Karl Gilbert, one of the charter members of the Washington Academy of Sciences, died at Jackson, Mich., on May 1, 1918, within a few days of his 75th birthday (May 6, 1843). He had been associated with the scientific life of Washington for 47 years, having been geologist of the Wheeler and Powell surveys in 1871 and 1874, and one of the original staff of the present United States Geological Survey at its establishment in 1879. Dr. Gilbert was a member of the Geological Society of Washington, of which he was president in 1895 and 1909; the Philosophical Society of Washington, of which he was president in 1892; the National Academy of Sciences; and many other American and foreign scientific organizations. His broad-minded interest in the problems of the earth kept him an active investigator throughout his life, and his published papers cover almost the entire range of modern geological science.—*Jour., Wash. Acad. Sci., June 4, 1918, p. 379.*

Dr. Gilbert was not directly occupied with meteorological problems as such, but one of his early papers bore directly on the problem of the deflection of winds on a rotating earth; while his classic monographic study of the shorelines of the Pleistocene lake named after Bonneville could not but lead him to a study of the prevailing winds of a prehistoric geological epoch. Again, his studies on changes in levels of the Great Lakes revealed a tilting that must be taken account of in any study of very long period oscillations in the lake levels due to precipitation (see this REVIEW, April, 1898, p. 164)¹.—Editor.

Yudzi Wada, 1859—1918.

Dr. Y. Wada, director of the Korean meteorological service established in 1904 by Japan after the Russo-Japanese War, died after a brief illness on January 5, 1918. Dr. Wada was born September 29, 1859, in Nihonmacu; early learned the French language; graduated from the Imperial University of Tokyo with the title Rigaksi in 1879, having specially devoted himself to physics. On graduating he entered the Geographical Office—then including the work of the present Central Meteorological Observatory—where he was occupied with geodesy, astronomy, and meteorology. In 1882 he began his activity as a weather forecaster for the Japanese hurricane service then under E. Knipping; later he continued this work alone as chief of the forecasting service. In 1890–1892 he visited the Parisian universities and observatories for purposes of study; and on the Japanese occupation of Korea and southern Manchuria in 1904 he

¹ See also his paper "The water level of Great Salt Lake," this REVIEW, January, 1901, 29: 23–24, for a discussion and interpretation of lake-level fluctuations.