not yet filled, the observatory is under the temporary charge of Dr. T. Okada, an assistant meteorologist in the Central Meteorological Observatory of Tokio, and who is one of the ablest and most active among the young scientists of Japan.

The establishment of the Mt. Tsukuba Meteorological Observatory by Prince Yamashina is certainly the initiative of a permanent meteorological survey of the upper atmosphere in Japan, and there can be no doubt but that this generosity of His Imperial Highness will prove eventually to be a great contribution to cosmical physics. As above mentioned, the topography of the mountain is peculiarly favorable to the study of meteorology and its allied sciences. Moreover, the mountain lies on the route taken by many cyclones, so that the observations at this observatory will contribute as much to the study of atmospheric motions, as they will to the physics of the atmosphere in general.

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Washington, D. C.

CURRENT NOTES ON METEOROLOGY.

MONTHLY WEATHER REVIEW.

There is much of general scientific interest in recent numbers of the 1905 volume of the *Monthly Weather Review* of the United States Weather Bureau. This publication is becoming more and more indispensable to students of meteorology, and is now well recognized as one of the important meteorological journals of the world. One feature of the *Review* is the monthly list of 'Recent Papers Bearing on Meteorology.' This bibliography of current literature would be far more useful if some system of listing titles were adopted other than that now used. At present the articles are listed under the names of the different journals and other publications. These names are not given alphabetically, and while the number of the volume is given, the year is not included. Where so much space is allotted to these bibliographical lists, it is much to be regretted that some more systematic, and hence more useful, scheme of listing is not adopted. With the first number of the 1905 volume a new list of recent publications is started, under the heading, 'Recent Additions to the Weather Bureau Library.' These, it is to be noted, are arranged alphabetically, but the year is not in all cases given.

The following papers have appeared in recent numbers of the *Review:*

No. 1, 1905, 'Escape of Gases from the Atmosphere,' by Dr. G. Johnstone Stoney, F.R.S., reprinted from the London, Edinburgh and Dublin *Philosophical Magazine and Journal of Science,* Vol. 7, June, 1904, 6th series, p. 620. A subject of theoretical interest in meteorology, but of great uncertainty.

'Meteorological Charts of the Indian Ocean,' by C. F. Talman. For some years the Meteorological Service of India issued daily synoptic weather maps of the Indian monsoon area, for the region between 36° N. Lat. and 12° S. Lat. It has now been decided to extend the field of observation over the greater part of the South Indian Ocean, and also to include broad areas of the surrounding continents and islands. This new enterprise is an important step towards 'world meteorology,' with successful long-range forecasting as the ultimate end in view.

'Apparatus for Instruction in Physics and Meteorology,' by Professor C. Abbe. A few well-considered suggestions as to the inadvisability of using expensive and complicated instruments in schools. Those who have seen teachers and scholars trying to understand fully the workings of some of the more complex instruments will cordially agree with Professor Abbe.

No. 2, 1905, 'A Relation between Autumnal Rainfall and the Yield of Wheat of the Following Year,' by W. N. Shaw, secretary of the Meteorological Council. Read before the Royal Society, February 2, 1905. The author finds that the dryness of the autumn is the dominant element in the determination of the yield of wheat of the following year in Great Britain. This is one of the few investigations which lead to a fairly definite and direct relation between crop yield and the variation of some meteorological element.

'High Water in the Great Lakes,' by Professor A. J. Henry. The outlook for the present season of navigation is not favorable to a

continuation of the high water of 1904, although this will probably rank as a season of relatively high water, especially on the upper lakes.

'The Diurnal Periods of the Temperature,' by Professor F. H. Bigelow. One of Professor Bigelow's studies on the diurnal periods in the lower strata of the atmosphere, in which he undertakes a critical discussion of the results obtained from balloon and kite ascensions during the past ten years.

'Mathematical Theory of Ice Formation,' by S. T. Tamura. A highly mathematical paper, summarizing what has been done along this line by mathematical physicists and also suggesting new lines of investigation.

'The Fourth International Conference on Aerial Research,' being an account of the meeting in St. Petersburg in September, 1904.

'The *Meteorologia Generale* of Luigi de Marchi.' A review of de Marchi's recent book, which is really a short treatise on physical meteorology.

NOTES.

IT is interesting to note the receipt of the First Report of the Transvaal Meteorological Department, containing the observations for July, 1903, to June, 1904, inclusive.

HARROW, as reported in the London *Standard* of June 8, 'has been alone among the public schools in the non-registration and in the non-publication of an annual series of weather observations.' Recently a full equipment of meteorological apparatus, as well as a meteorological library, have been presented to the school. This should serve as an incentive to persons in the United States, where, in spite of much that is encouraging in the situation as regard meteorological instruction, there is still a great deal that needs attention.

DR. W. J. S. LOCKYER, who has been paying special attention to the relation between solar changes and weather, has recently said (*Nature,* June 8, 1905), in a summary of recent work along these lines: 'There is * * * no reason why we should take a pessimistic view of the attempts made to solve this fascinating riddle of the relationship between changes of solar activity and the vagaries of the weather.'

In the *Meteorologische Zeitschrift,* No. 4, 1905, O. V. Johansson has a paper entitled 'Ueber den Zusammenhang der meteorologischen Erscheinungen mit Sonnenfleckenperioden.'

Ciel et Terre, Vol. 26, 1905, No. 5, publishes a useful tabular summary of the temperatures (mean monthly) observed during recent Antarctic expeditions. This is the first summary of the kind which we have seen. It is accompanied by some notes on meteorological phenomena observed during these different expeditions.

The preparation of an index of weather maps illustrating typical conditions, as an aid in forecasting, is discussed by Captain W. Kesslitz in the *Meteorologische Zeitschrift,* 1905, No. 4.

THE actinometrical observations made by A. Hansky, on Mont Blanc, during 1900, are p. 422. Crova apparatus was employed. The value of 3.29 for the solar constant is given as probably the most accurate, on the basis of these observations.

R. DEC. WARD.

SCIENTIFIC NOTES AND NEWS.

DR. NICHOLAS MURRAY BUTLER, president of Columbia University, has received the doctorate of letters from Oxford University and the doctorate of laws from the University of Manchester. While in London Dr. Butler has been entertained by the chairman of the London County Council, the principal of London University, and at a banquet presided over by the minister of education.

THE University of Edinburgh has conferred its honorary doctorate of laws on Professor W. S. Halsted, surgeon in chief of the Johns Hopkins University of Baltimore; Professor I. H. Cameron, of Toronto; Professor Francis J. Shepherd, of Montreal, and Professor W. W. Keen, the Philadelphia surgeon, all of whom are attending the celebration of the quarter-centenary of the Royal College of Surgeons.

LORD KELVIN and Sir William Christie have been elected honorary members of the Optical Society.