Slow drying will kill a culture that will remain in good condition after rapid drying.

A highly concentrated medium comparable to that which the almost dry cultures must endure will kill the bacteria in question in an exposure of a few days.

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CURRENT NOTES ON METEOROLOGY.

HELM CLOUDS IN NORTH CAROLINA.

In the *Monthly Weather Review* for October, 1905, Frank W. Proctor mentions the occurrence of standing clouds in atmospheric waves at Waynesville, N. C. (see also Science, May 1, 1903, page 712). This place is surrounded on three sides by high and steep mountains, and the topography is favorable for the formation of such clouds. On the day when the observation was made the wind was southwest, and blew across the mountain range which forms the head of the valley. A large dense standing cloud was formed over the mountains, carried down on the lee side for a short distance, and was seen to evaporate at its leeward edge as fast as it developed to windward. About a quarter or a half a mile to leeward, at the same level approximately, and separated from this main cloud by a clear space, there was a second, detached, standing cloud of good size, also forming to windward and evaporating to leeward like the primary cloud. The wind at the level of the clouds was blowing at the rate of twenty miles an hour, yet the clouds were stationary, dissolving as rapidly at one side (lee) as they formed at the other (windward). Mr. Proctor's account of these helm clouds in the mountains of North Carolina is the second mention of this phenomenon. The first was made by Professor W. M. Davis (*Bull. Geogr. Soc. Phila.*, III., No. 3, 1903).

DAILY MARCH OF TEMPERATURE IN THE TROPICS.

Hann has undertaken an extended investigation of the daily march of temperature in the tropics, the first part of which has been published ('Der tägliche Gang der Temperatur in der inneren Tropenzone,' *Denkschr. k. Akad. Wiss., math.-naturw. Kl.*, Vienna, 1905, Vol. LXXVIII.). The reason for taking up this study is found in the fact that the mean temperatures of many stations in the tropics are placed too high because of the application of inaccurate corrections in computing the true means. The present work is to be regarded as an extension of that of Dove, published in 1846 and in 1856 ('Ueber die täglichen Veränderungen der Temperatur der Atmosphäre,' *Abhandl. Berl. Akad.*), and includes the latest available observations from stations between the equator and latitudes $\pm 15°$ N. and S., in Africa, the West Indies, Central and South America, southern Asia, northern Australia and the tropical oceans.

RAINFALL OF MEXICO.

A report on the 'Regimen of the Rainfall of Mexico,' in the twelfth volume of the *Annals of the Association of Engineers and Architects of Mexico,* by Romulo Escobar, brings to light an interesting fact. Most of the stations show a steady diminution in rainfall for a long period of years, but this decrease has already begun to be followed by an increase. Our gulf states from Texas to Alabama and Tennessee have shown a similar decrease, but the expectable increase has not been observed everywhere, owing, as Professor Abbe believes, to the frequent changes in the rain gauges and their exposures. It is to be noted with satisfaction that in this report on Mexican rainfall there is no indiscriminate comparison of a long record at one station with a short record at another, the rainfalls being averaged for each station by lustra, so that mean annual rainfalls for the same period may be compared (*Mo. Wea. Rev.*, Oct., 1905).

NOTES.

According to a list recently published in *Petermann's Mittheilungen* (1905, p. 91) it appears that out of forty-four universities and technical schools using the German language, thirteen recognized meteorology as worthy of special mention in their courses of instruction offered during the past summer semester.

THE third annual issue of the volume on 'Meteorology' of the International Catalogue of Scientific Literature, dated October, 1905, contains chiefly titles belonging to the year 1903 and the earlier part of 1904. The number of pages is 235, as against 296 in the second annual issue (1902) and 184 in the first. Such a bibliography as this, unsatisfactory as it is in some respects, is certainly a very great help to the working meteorologist and climatologist.

OBSERVATIONS at the meteorological observatory at Perpignan during the solar eclipse of August 30, last, showed a fall of 6.7° in temperature; a rise of 12 per cent. in relative humidity; no 'eclipse wind,' but rather a calm (*Ciel et Terre,* December 16, 1905).

REFERENCE has been made in SCIENCE to the work carried out by the Blue Hill Observatory staff at St. Louis in 1904 with the aid of *ballons-sondes.* Mr. A. Lawrence Rotch, in the *Proceedings of the American Academy of Arts and Science,* Vol. XLI., No. 14, December, 1905, describes this investigation under the title 'On the First Observations with Registration Balloons in America.'

R. DEC. WARD.

BOTANICAL NOTES.

BOTANICAL ARTICLES IN RECENT PERIODICALS.

IN the *Iowa Naturalist,* for October, R. I. Cratty monographs the *Juncaceae* of Iowa, distinguishing nine species of the genus *Juncus,* and two of *Juncoides.* In the same number, T. J. Fitzpatrick publishes his treatment of the *Melanthaceae* of Iowa, in which he includes one species of *Zygadenus,* one of *Melanthium,* one of *Veratrum,* and three of *Uvularia.*—'The Willows of Ohio' is the title of a monograph by R. F. Griggs in the Proceedings of the Ohio State Academy of Science (pt. 6, Vol. IV.). It covers fifty-eight pages and includes keys, descriptions and half-tone reproductions of photographs by means of which the twenty-two species and varieties are well distinguished.—F. L. Sargent's articles, 'Lichenology for Beginners,' published in the *Bryologist* in 1905, have now been issued as a twenty-page pamphlet. It presents in simple language the essential structural facts in regard to lichens. The text is made still plainer by a number of cuts of fruits and spores. The pamphlet closes with a useful artificial key to the common eastern species.—It is a pleasure to record the completion (December, 1905) of Forbes and Hemsley's 'Enumeration of all the Plants known from China proper, Formosa, Hainan, Corea, the Luchu Archipelago, and the Island of Hongkong, together with their Distribution and Synonomy,' which has been in course of publication in the *Journal of the Linnean Society* for many years. The enumeration contains 8,271 species, of which 4,230 are not known to occur outside of the Chinese empire. It is estimated that the total number of species when known, will reach at least twelve thousand.—In the *Records of the Botanical Survey of India* (Vol. IV., No. 2), Sir J. D. Hooker publishes an epitome of the British Indian species of *Impatiens.* He records sixty-three species from the eastern Himalayas from central Nepal to Upper Assam, and fifty-two species from the Burmese region. The well-known cultivated species, *Impatiens balsamina,* occurs wild in both regions.—Engler's 'Pflanzenreich' has reached the twenty-second 'heft' which is devoted to the family *Primulaceae,* elaborated by F. Pax and R. Knuth. The 530 species are assigned to twenty-two genera, in five tribes. Of the latter, the tribe *Androsaceae* is by far the largest, containing 361 species. The larger genera are *Primula* with 208 species; *Androsace,* 84; *Dodecatheon,* 30; *Cyclamen,* 16; *Lysimachia,* 110; and *Anagallis,* 24. The treatment is conservative, both as to generic and specific limitations. No new genera are set up, and few new species are described. However, when some modern species-maker gets into the family, he'll find an abundance of varieties ready to his hand for elevation to specific rank.

CRYPTOGAMAE FORMATIONUM COLORADENSIUM.

FOUR years ago F. E. and E. S. Clements issued their 'Herbaria Formationum Coloradensium,' consisting of about six hundred sheets of specimens of higher plants, ar-