the autumn in connection with our signal service, now mostly abandoned by reason of an unfortunate and unwise economy. The more important existing stations, fitted with good instruments and in the care of good observers, are as follows: Havana, Cuba, at the Jesuit college, in charge of Padre Benito Viñez; Kingston, Jamaica, in charge of Prof. Maxwell Hall; Port au Prince, Hayti, directed by Jesuit priests; two in San Juan, Porto Rico, one controlled by the government, the other in a Jesuit monastery. Besides these, there are records of less detail kept at Santiago, Cuba, and on the several English islands; but they are not published in good or easily accessible form, if published at all. Considering the direct importance of uniform series of observations on the Antilles, especially during the hurricane season, and the probability that observers could be found there if instruments could be supplied to them, the field commends itself to international cultivation; and in time we trust to see our hydrographic and signal offices taking the lead together in this work, to which other nations will undoubtedly contribute a valuable assistance.

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THE LEGISLATORS of European countries seem to be ever on the alert to devise means by which the general health and vigor of the youth may be increased. While it may be true that the real motive which actuates these efforts is not a philanthropic one, but is rather with the idea of raising up material for an army with which to defend the fatherland or to carry conquest into other countries, still the end which is reached is a most beneficial one. By a law recently enacted in Germany and Switzerland, the principals of all schools are required to dismiss their pupils at noon of every day on which the thermometer registers, at 10 A.M., 20° Reaumur (77° F.). We commend this action as worthy of reproduction in this country to those who, during the coming year, will serve in our state legislatures.

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THE PRELIMINARY ACCOUNT of an analysis of the Mexican codices which appears in this number of *Science* aroused an unusual interest in the section of anthropology at the recent meeting of the American association. All previous attempts at deciphering these queerly artificial systems of picture-writings were confessedly inadequate; and the principle of ascribing a phonetic value to the characters, and not a merely symbolic one, is as rich in its consequences as it was unexpected. It is highly improbable that a method of interpretation yielding such definite and rational results even in a small number of instances should not be the key to a large portion of the writings; just as improbable, for example, as that a thousand letters of a printer's 'pie' should happen to form rational sentences. Moreover, the discovery of the determinative signs does much to complete whatever gap may have been left in the evidence. Linguists and anthropologists alike will await with anxiety the results of the application of this promising innovation to the mysterious remains of Mexican thought and customs.

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## *TECHNICAL EDUCATION.*

IT is pleasant to notice that the subject of technical education and manual instruction in connection with the public-school system is being actively and favorably discussed in New York City. The board of education some time ago appointed Messrs. Dewitt J. Seligman, Henry L. Sprague, and E. J. H. Tamsen a special committee to make a report on the subject of technical education, and on Oct. 13 their report was received and discussed by the board. The report emphatically favors the introduction of manual training into the public-school system, and points out that it may be accomplished in one of two ways: first, separate schools for manual training may be established; or, secondly, it may be made part of the regular course of study, as now pursued in the various schools. Inasmuch as the superintendent of school buildings reported that there were vacant rooms in various schools, the committee was of opinion that mechanical or constructive drawing, modelling in clay, wood-working by means of hand-tools, etc., could be taught immediately, such vacant rooms being used for the purpose. To carry out the proposed experiment in male grammar schools, the committee asked the board of education to apply to the board of estimate and apportionment for an appropriation of fifty thousand dollars.

The manual training of girls was not overlooked by the committee, and an additional ten thousand dollars was asked for in order to introduce experimentally into the female grammar schools instruction in elementary cooking (twelve lessons, of two hours each, would suffice, in the committee's opinion), instruction in sewing (sewing is now compulsory one hour a week in the primary schools for girls), and to provide for courses of lectures to the older girls on the elementary rules of housekeeping. Some discussion arose concern-

ing the adoption of the report, some of the older members of the board of education seemingly regarding the proposed innovation as a reflection on the character of the education now given, and therefore opposing it.

Unfortunately the special committee was defeated in its request for immediate action; and, as the report was referred to the standing committee on the course of study, it is hardly possible that, even if it is finally adopted, any thing can be accomplished under it for another year. But the report itself, the favorable reception it has met with in the press and among all intelligent citizens, and much of the discussion concerning it in the board of education itself, clearly indicate that this proposed advance in the common-school system of the metropolis will soon become an accomplished fact. It is only a question of time now, and we trust of a short time.

## *ANNUAL MEETING OF THE NEW ENGLAND METEOROLOGICAL SOCIETY.*

THE third annual meeting of the New England meteorological society was held at the Institute of technology, Boston, Oct. 19. Prof. J. D. Whitney read a paper on 'Rainfall statistics in the United States,' considering especially the statements that have been made concerning the increase of rainfall on the western plains as a result of cultivation of the ground. These statements are considered altogether untrustworthy. In dry regions the amount of precipitation is generally variable. The records kept in the west are seldom of long enough period, of sufficient accuracy, or of sufficient uniformity, to decide so large a question. Moreover, in the eastern part of the country, where long records have been kept, no definite variation in the precipitation is found.

Mr. S. A. Eliot read an essay on the 'Relations of forests to rainfall and water-supply.' The common opinion that forests increase and clearings decrease the rainfall was traced to the authority of eminent writers, based, not on well-kept observations of rainfall under these contrasted conditions, but chiefly on the well-known diminution of stream-flow in cleared districts. This, however, may be due to increased evaporation rather than to decreased rainfall. Forests undoubtedly retard evaporation of fallen water, but it is very problematic if they increase the amount that falls. Mr. Fitzgerald commented on this by referring to a statement, apparently on the authority of DeLesseps, that the rainfall along the Suez canal had increased since trees were planted there. On writing directly to DeLesseps, answer was received that he had made no such statement, and that there were no facts to support it. Mr. Davis added, that, if the causes controlling rainfall be separated into those dependent on and independent of forests, we find that the latter are now powerless to produce forests in forestless countries, such as those around the eastern Mediterranean, and therefore could not have originated the forests once there, unless formerly of different value from now; but, if it be admitted that these non-forest causes vary, the deforesting may be due to natural changes, not to the hand of man.

Several seismoscopes and a series of photographs illustrating the effects of the Charleston earthquake, lent by the U. S. geological survey, were exhibited and explained at the meeting.

In the absence of the director, Professor Upton, an informal report on the work of the year was presented by the secretary. Members now number 110, against 95 last year, and include well-known meteorologists outside of New England. The monthly bulletin has been regularly issued, and recent numbers include reports from 140 to 151 observers, against 123 last year. More attention has been devoted to improving the character of the observations than to increasing the number of stations. Free tests of instruments belonging to observers reporting to the society have been begun by Prof. S. W. Holman. Three valued observers have been lost by death, — Hon. Hosea Doton, Woodstock, Vt.; Dr. B. F. Harrison, Wallingford, Conn.; and Mr. R. H. Gardiner, Gardiner, Me. The records of the last two will be continued. Special investigations, supported by grants from scientific funds, have been undertaken: a report on thunderstorms in New England in 1885, by the secretary, is thus already distributed to members; and a report on the distribution of rain in cyclonic storms, by the director, is now in press. While such special studies are generously supported, the society still needs to increase its membership for the support of its regular work.

## *PARIS LETTER.*

M. CH. ZENGER recently made known, at a meeting of the Academy of sciences, some interesting facts concerning the singular property that different substances have of giving luminous rays in darkness after having been exposed to solar or even diffused light. M. Zenger remarked that Mont Blanc emits, till about half-past ten in the evening, a peculiar blue-green light, very similar to that given by Lake Leman; and he believed that this light originates in the ice of the glaciers as well as in the lime of the rocks. Thinking it might be possible to take a photograph of