

## NOTES AND NEWS.

THE New England meteorological society has two special investigations on hand for the coming summer, in addition to its regular work of temperature and rainfall observation. The first special subject is thunder-storms in New England, now in its third year; the second is the sea-breeze on the eastern coast of Massachusetts, now undertaken for the first time. Volunteer observers are wanted in both investigations. Correspondence concerning thunder-storm observations should be addressed to O. N. Oswell, Cambridge, Mass.; concerning the sea-breeze, to L. G. Schultz, signal office, Boston, Mass. The considerable labor and expense that these studies involve is made possible to the society by assistance from the U. S. signal service, the Bache fund of the national academy, and the Harvard college observatory.

— Carl Gerold's Sohn, Vienna (New York, F. W. Christern), announces the publication of the 'Canon der Finsternisse,' by Th. Ritter von Oppolzer.

— D. O. Haynes & Co., Detroit, announce the publication of 'The cremation of the dead,' by Hugo Erichsen, M.D., honorary member of the Cremation society of Milan, Italy. It will contain an introduction by Sir T. Spencer Wells, and will treat of the question from an historical, sanitary, medico-legal, religious, aesthetic, and economical standpoint.

— The cornerstone of the Leland Stanford, jun., university, perhaps the most magnificently endowed institution of learning in the world, was laid at Palo Alto, Cal., May 13.

— In view of the renewed interest which the Central American states are now attracting, the article on Guatemala by W. T. Brigham, entitled 'An uncommercial republic,' which will appear in the June number of *Scribner's magazine*, will be especially timely and valuable.

— Mr. J. W. Graydon, late lieutenant U. S. navy, has recently been conducting some highly interesting experiments in Russia in the manipulation of explosives. He has been quite successful in mixing dynamite with ordinary gunpowder, obtaining greatly increased initial velocities without a corresponding increase in the pressure in the chamber of the gun. A valuable report upon the subject has been received at the navy department, which will soon be published.

— Mr. John Murray has in press a 'Dictionary of hymnology,' edited by the Rev. John Julian. The aim of the work is to trace the history of the Christian hymns of all ages, and especially of

those now used in English-speaking countries. Biographical notices will be given of the authors of the hymns, besides historical articles on liturgical music generally.

— Chapman & Hall will publish the English edition of M. de Lesseps' reminiscences, extending over a period of forty years, in October next, simultaneously with its appearance in Paris. The work will also appear in German, in the first instance as a serial in one of the Berlin papers.

— G. P. Putnam's Sons make the following additional announcements for the spring season: 'The curability of insanity and the individualized treatment of the insane,' by John S. Butler, M.D., late physician and superintendent of the Connecticut retreat for the insane; and, in the 'Questions of the day' series, 'The fishery question,' a summary of its history and an analysis of the issues involved, together with a full bibliography of authorities to be consulted, and a map of the fishing-grounds, by Charles Isham.

— The *Critic* states that a memorial volume of the late Prof. E. L. Youmans will be prepared by his brother and sister, W. J. and Eliza A. Youmans, and that it will contain a number of manuscripts and important letters, including his correspondence with Darwin, Spencer, Mill, Huxley, Tyndall, Lubbock, Agassiz, and other distinguished persons.

— An octavo volume of nearly four hundred pages, with facsimiles of the Charter of 1650 of Harvard college and of the first page of the College Records, with engraved views of the college in 1821, and containing a full report of the celebration of the two hundred and fiftieth anniversary of the founding of the college, is nearly ready for publication by the college.

— The Ladies' health protective association of New York has six hundred members on its roll. It proposes to devote its energies during the present year to tenement-house reform, and to improvement in methods of street-cleaning.

— A case of fatal cocaine-poisoning is reported in Germany, in which the patient, a girl aged eleven years, died within two minutes after receiving a hypodermic injection under the skin of the arm, consisting of from four to twelve drops (the exact quantity being unknown) of a four-per-cent solution of the drug.

— Ernest Ingersoll, in the June number of *The American magazine*, will describe the 'Last remnant of frontier,' — a portion of our country near the north-western boundary, which was an unsettled and almost unexplored wilderness until penetrated by the Northern Pacific railroad.

— Prof. J. P. Mahaffy has in press a book on social life in Greece. It includes a review of the life and thought in all the Hellenistic kingdoms from the time of Alexander to the Roman conquest.

— The study of mathematical astronomy seems to attract so few college students in this country, that we have examined with some interest a pamphlet just received, a thesis on 'Cometary perturbations' presented by Prof. W. Hoover for the degree of Ph.D., University of Wooster, O. About half of the pamphlet is devoted to a general discourse on celestial mechanics, and the rest to deducing certain well-known formulae for cometary perturbations. Considerable work has no doubt been done in the study of Watson's 'Astronomy,' but we should have been glad to see the actual application of the formulae to some of our recent comets, following the example of students of astronomy at the German universities.

#### LETTERS TO THE EDITOR.

*\*.\*The attention of scientific men is called to the advantages of the correspondence columns of SCIENCE for placing promptly on record brief preliminary notices of their investigations. Twenty copies of the number containing his communication will be furnished free to any correspondent on request.*

*The editor will be glad to publish any queries consonant with the character of the journal.*

*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

#### The Sonora earthquake.

In this portion of the world, since the afternoon of the 3d, have been occurring a series of seismic phenomena, such as, so far as records or tradition show, never have happened here. The telegraphic (newspaper) reports possess the usual characteristics, — gross exaggeration with utter inaccuracy of detail. I am securing data to aid in making a more complete record of the phenomena, and make this merely a preliminary note.

The earthquake struck this town at 3.06 p.m. local time, which, reduced to standard, gives 2.48. Probably the best description will be an account of my own sensations. I had just noted the time, when I heard a rumble such as made by heavy ore-teams in passing. This noise increased; and the building, a two-story adobe, began to shake gently, then more violently. By this time it seemed to me to be a severe whirlwind, such as frequently occurs here at this season of the year. The shaking and the noise increasing, I went to the front of the building, some fifty feet, and looked out. Then it began to dawn upon me that something of a serious nature was taking place, judging from the looks of the crowd on the streets. I then ran back to the place whence I had started, picked up a child, and made my way to the street. When the open air was reached, the noise was like a continuous roll of heavy firing, with occasional short peals like a sharp clap of thunder. This ceasing, I looked at my watch, and found that from the time I had noticed the first rumble until the end, had been about 1.75 minutes. Allowing

ten seconds for error, leaves 1.65. Of this time, the duration of the severe shaking could not have been over ten seconds; the moderately severe, about twenty; and the trembling, the balance of the time. Judging by the movement of some glasses and statuettes on my desk, the general direction of the shock was from south-west to north-east.

The amount of damage done, so far as I can learn, is trifling. No building of any stability has been damaged at all; neither has any one been injured or killed. Persons riding or driving were unaware that any thing was happening. In the Sulphur Spring valley, about twenty-five miles east of here, some fissures occurred in the bed of an old stream, and water spouted out to a small but varying height and in considerable quantity. These streams continued flowing for two or three days, but at present all save two are dry. These seem to be permanent, and are running a small amount of water at ordinary temperature. I have not seen them, and my account is derived from the owner. I may mention as an amusing fact, that, in less than an hour after they broke out, they were taken up and located under the water-laws of the United States.

Succeeding the shocks, mountain fires were noticed on many of the ranges. This gave rise to the reports of volcanic action, which may safely be set down as pure imagination. No phenomenon resembling eruptive disturbance, so far as I can now ascertain, has taken place in any part of the section disturbed.

At the time of the first and severe shock, owing to the vibration and the rolling of boulders down the mountain-sides, large clouds of dust arose: this, with the noise, caused many who saw the phenomenon to think that the cause was eruptive. The fires, with only two exceptions that I now know of, were burning before the shock. Of these it is possible that they were not noticed prior to this, or, what in my opinion is not improbable, falling boulders ignited the timber. This point I will try to clear up. The San Pedro River, a small stream nine miles west of here, is reported to have a slight increase of water. This is diminishing rapidly.

The railroad-track of the Atchison, Topeka, and Santa Fé road, at a point where it ran in an east and west direction, was bent  $4\frac{1}{2}$  inches out of line, the convexity looking south. The bend was about three hundred feet in length. Succeeding the severe shock during the following forty-eight hours, marked and noticeable tremors occurred about every half-hour. These were of greater or less severity, but none approached the first. Had instruments been here to record the motion, no doubt they would have demonstrated a continual vibration.

The heaviest shock, since the first, occurred last night about 9.30. One ludicrous incident was that of an acquaintance, who, while driving along a mountain-road, noticed large-sized boulders begin to start down the mountain towards him. He became much excited, took his rifle, and alighted with the intention of seeking vengeance on the perpetrators of the outrage. The falling of some immense boulders weighing hundreds of tons just then, changed his mind: he will not now hunt the author. Men working at a depth of six hundred feet felt the vibrations severely. Some said they became sick, and all said that the bottom of the drifts or shaft seemed to rise. Men working at one hundred and fifty feet did not notice it so much. One crew of