2 P.M., 48.64°; at 9 P.M., 40.08°. The mercury fell below the freezing-point on thirteen days.

The first blossoms of the white maple (Acer dasycarpum) were observed on the 1st; of the white elm (Ulmus Americanus), on the 8th; and of the dog-tooth violet (Erythronium albidum), on the 23d; these dates being considerably later than usual.

Rainfall, including melted snow, 1.28 inches, which is 0.96 inch below the March average. Rain or snow, or both, fell on eight days, on one of which the amount was too small for measurement. The snow was at no time more than sufficient to whiten the ground. There was one thunder-shower. The entire rainfall for the three months of 1883 now completed has been 4.32 inches, which is 0.39 inch below the average for the same period in the past fifteen years.

Mean cloudiness, 48.92 % of the sky, the month being 0.96 % clearer than usual. Number of clear days (less than one-third cloudy), 13; entirely clear, 4; half-clear (from one to two thirds cloudy), 8; cloudy (more than two-thirds), 10; entirely cloudy, 8: mean cloudiness at 7 A.M., 49.03 %; at 2 P.M., 50.64 %; at 9 P.M., 47.09 %.

Wind: N.E., 30 times; N.W., 24 times: S.W., 23 times; S.E., 7 times; N., 4 times; W., 3 times; E., once; S., once. The entire distance travelled by the wind was 12,080 miles, which is 2,728 below the March average. This gives a mean daily velocity of 389.68 miles, and a mean hourly velocity of 16.24 miles. The highest velocity was 50 miles an hour, on the 18th.

Mean height of barometer, 29.164 inches; at 7 A.M., 29.181 inches; at 2 P.M., 29.147 inches; at 9 P.M., 29.164 inches; maximum, 29.774 inches, on the 3d; minimum, 28.630 inches, on the 18th; range, 1.144 inches.

Relative humidity: mean for month, 65.6; at 7 A.M., 75.4; at 2 P.M., 49.4; at 9 P.M., 72.0; greatest, 100, on the 24th; least, 21, on the 17th. There was no fog.

NOTES AND NEWS.

— It will be remembered that the great comet of 1882 was first noticed by railroad employees in the Argentine Republic, and that Dr. Gould's attention was called to it as seen Sept. 6. On Sept. 7 it was seen at the Cape of Good Hope and in Australia; and on the 11th, Cruls saw it at Rio, and cabled its discovery. Finally, A. A. Common of London announced its discovery in England on Sept. 17.

By the courtesy of Prof. E. C. Pickering of Harvard college observatory, we are allowed to publish the following translation of a letter from the director of the observatory at Chapultepec to the secretary of state and interior of Mexico, which shows that the comet was seen in Mexico on Sept. 14.

I have the honor to communicate to you, that this day, between five and six in the morning, there has been observed at this observatory, by Felipe Valle, a comet which was seen yesterday by Francisco Toro, an employé of the central meteorological station.

The data which Sr. Valle has been able to collect are the following: the approximate position of the comet was 10h. 30s. right ascension, and 1° 15′ declination south, placing it, consequently, in the constellation Sextaus Uraniae, a little below and about half way between α Hydrae and α Leonis (Regulus), with which stars it forms a nearly right-angled triangle. Its nucleus appears as a star of the second magnitude, having a strong resemblance to Mars, both on account of its red color and its brilliancy. The nucleus is separated entirely from the coma, both this and the tail having a transparent yellow color. The tail is 5° to 6° in length. The breadth of the coma is about 1′ 3″, and, of the nucleus, about 40″. The tail has sharply defined edges, and is straight at its origin, but appears to bend further on, with the convex side towards the zenith. The comet appears on the horizon at 5h. 12m., and can be seen by the naked eye up to 5h. 40m.; that is, eight minutes before sunrise; but with the telescope of our altazimuth instrument, using a magnifying power of thirty-nine diameters, it can be seen even fifteen minutes after the sun is up.

I shall give you information in regard to our future observations.

Chapultepec, Sept. 14, 1882.

— The Philosophical society of Washington, at its meeting March 24, listened to an account, by Prof. J. R. Eastman, of the methods and success of the Florida expedition for observation of the transit of Venus, and to an historical and critical review, by Professor Cleveland Abbe, of methods of determining the temperature of the air. A communication from Professor Charles E. Munroe described a method of ascertaining the specific gravity of solids by means of the hydrometer.

— A mathematical section of the Philosophical society of Washington has been formed. At the meeting held March 29, Professor Asaph Hall was elected chairman for the year 1883, and Mr. Henry Farquhar secretary. Mr. Alex. S. Christie read a paper on 'A quasi general differentiation,' which was discussed by Messrs. C. H. Kummell and E. B. Elliott.

— Mr. Albert E. Menke has been elected to the professorship of agriculture and agricultural chemistry in the Kentucky state college.

— The Ohio weather bureau has decided on a set of signals which will be displayed on the sides of the baggage-cars of moving trains. A red sun will indicate higher temperature; star, stationary; and moon, lower. A blue sun, general rain or snow; star, local rain or snow; and moon, clear or fair weather. These signals will be placed, one above the other, on a white ground, and will be as large as the space will allow. It is believed that they can be distinguished at a considerable distance.

— The Boston society of natural history has just issued a list of its officers and members, — the first that has been printed for fifteen years. It shows that its resident membership has fallen in that period from 492 to 422. Women have been admitted to membership, and a new class added of associate members, through which all must pass on their way to corporate membership. In the same way its list of honorary members has fallen from 31 to 20, and of its corresponding members from 228 to 109. The latter lists have clearly been strengthened by the decrease.

— A treatise on projections by Dr. Thomas Craig has been published by the U. S. coast and geodetic survey in a quarto volume of 247 pages.

— Circulars have been issued by the German-Austrian alpine union, calling for contributions in aid of the sufferers from the floods in Tyrol and Carinthia last year. In answer to the first, nearly 40,000 florins were received. Details of the damage caused by the floods are reported by the several sections of the society.

— The highest meteorological observatory in the British Empire has just been organized on the government cinchona plantations in Jamaica. The mean annual rainfall at this particular spot and elevation (4,900 feet) is given as 136 inches, and the mean annual temperature as 60° F. The record of observations will be published in the *Jamaica gazette*.

— Buffalo supports a second scientific society in the Naturalist's field-club, the first (double) number of whose Bulletin is recently issued. Six numbers a year are promised; and if this youthful company of fifty persons, half of either sex, succeeds in filling them with as good material in local natural history as is furnished here, we would wish them all success.

— J. Thomson arrived at Zanzibar Jan. 29, and hopes to complete his preparations for a two-years' trip inland by March 2. He found difficulty in securing porters, as Fischer had taken the best men; but he secured Manya Sera, who had charge of Stanley's party.

— M. Thouar, a French explorer, reports his arrival at Medellin (Antioquia, Colombia) in December last. He goes to Bogota and Quito, and, after a short rest in these cities, will follow the Andes along to Chuquizaca (Sucre), at the head of the Pilcomayo.

— Dillon, French consul at Tientsin, undertook a journey into Mantchuria last January.

— The first two miles of railroad on the upper Senegal, constructed by the French, were opened Dec. 19, 1882, the natives running and shouting after the train as long as they could follow it. Col. Berguis-Desbordes has gone on to Bamaku, on the Niger, where he arrived Feb. 1. On Jan. 16, he burned Daba, whose chief offered the only resistance he met on the way.

— A new Italian expedition, under Bianchi, will go into the interior of Abyssinia with presents to the king, in hopes of obtaining the papers and collections left there by the deceased traveller, Antinori. An attempt will also be made to open a road from Assab to the mountains.

— The section of the Meuse of the Société de géographie de l'est (France) will open a geographic and ethnographic exhibition at Bar-le-Duc, Aug. 20 to Sept. 20, 1883. Besides maps and collections from foreign countries, the exhibit is to contain special studies of the geography of the Meuse; and prizes are offered for the best monographic descriptions of the several communes.

— The Michigan mutual life-insurance company has published a report on the mortuary experience of the company from its organization to Jan. 1, 1882. The methods employed in making their experience-tables is described in detail by the actuary, Mr. M. W. Harrington. It should be noticed, however, that the results make a very favorable showing for the company, possibly due to its comparative youth.

— A. Penck's 'Vergletscherung der deutschen alpen' is carefully reviewed by F. v. Richthofen (*Verh. erdk. Berl.*, 1882, 565–577).

— J. E. Sherrill of the Normal publishing house, Danville, Ind., has in press, for immediate issue, 'Scientific orthography and orthoepy,' by Professor Isaac W. Clinger, Normal school, Charleston, W. Va.

— The Russian department of public works will this year begin the construction of a canal between branches of the Obi and Yenissei, which will, when completed, give water communication from Tumen, near the Ural Mountains, to Kiakta, beyond Baikal, on the Chinese frontier, a distance of more than 1,500 miles in a direct line. Navigation on part of this route lasts only four months.

— The Società geografica italiana has lately issued a volume of notices and proceedings (*notizie e rendiconti*) of the third international geographical congress, held at Venice in September, 1881. A considerable number of pages is occupied with formal addresses, lists of members, awards, and other statistical matters. The reports on certain questions presented to the congress include material of more permanent interest. Among these may be mentioned that of A. Ferrero, recommending the measurement of southern meridian arcs in Australia and the Argentine Republic; Schiaparelli's report on local deflections of gravity, causing differences between astronomical and geodetic latitudes, in one case, near the Alps, between Andrate and Mondovi, amounting to 47″, or one per cent of the total amplitude (singularly enough, the Apennines, in some cases, cause the geodetic to exceed the astronomical latitude); the successful application of photography to topographic work, by Paganini; Magnaghi's hydrographic report, recognizing the superiority of wire-sounding apparatus, and including a classified list of coasts sufficiently or imperfectly surveyed; Uzielli's recommendation of careful measurements to determine horizontal or vertical changes in the relative position of certain points on the land, the causes of such change being found in variations of internal and external pressures in the earth, in contraction of the globe from cooling, in the daily and yearly oscillations from solar heat, shown by Plantamour and Hirsch, in change of composition and density of rocks, and in the underground effects of water. Polar meteorology, ethnography, commercial and historic geography, are also considered. In the geographic exhibition, Italy naturally filled the greatest space; France, Russia, and Germany following it. The objects exhibited numbered 7,042, exceeding those of the Paris geographic exhibition of 1875 by 40 per cent.

The proceedings of the several sectional meetings contain discussions on numerous topics: such as, Egyptian climate, Abbate and Mahmoud Beys contending that there were no signs of its having changed within the past twelve centuries; the formation of coral-reefs by other means than subsidence, as suggested by Semper and Murray, and here maintained by Rein and Fischer; the definition and limitation of scientific geography to the study of the form of the earth's surface, including the manifestations and reciprocal relations of organic forms, with the aid, where necessary, of other sciences, its distinguishing characteristics being the study of position and distribution; the advisability of representing mountain relief and oceanic depression in school-atlases by contour-lines and shades of color rather than by hachures; the exploration of the Mediterranean by Magnaghi and Giglioli, on the 'Washington,' in 1881, their results about Sicily and Sardinia showing a greater variety in the bottom fauna than had been previously found, and an almost uniform temperature of 13.5° to 13° C. at all depths from 800 to 3,634 metres. Three maps are published in this volume. One shows the position of meridian arcs, measured up to 1865, for geodetic purposes (the arc in southern Africa seems accidentally omitted). Another gives the primary triangulation of Europe, showing a wonderful network of accurately determined lines. This, taken with the maps given in our coast-survey reports, and the map of Indian triangulation, reproduced in Markham's 'Indian surveys,' will show about all that has yet been accomplished in this direction. A third plate shows the route of the 'Washington' in 1881. A second volume of acts and communications is promised, in which more extended and valuable reports of scientific papers will be published.

— American entomologists will regret to learn the sudden death of Prof. P. C. Zeller, by heart-disease, at his residence in Grünhof, near Stettin, Prussia, on the 27th of March. He has been known for many decades for his excellent systematic work on Lepidoptera, especially the lower groups, and of late years has contributed memoirs of importance on American forms. He died at the age of seventy-five, and was actively engaged in his favorite studies to the last.

RECENT BOOKS AND PAMPHLETS.

D'Achiardi, A. I metalli, loro minerali e minieri. Milano, 1883. 402 p. 8°.

Allen, Grant, *and others*. Nature studies. By Grant Allen, A. Wilson, Th. Foster, E. Clodd, and R. A. Procter. London, 1883. 322 p. 8°.

Bastian, A. Inselgruppen in Oceanien. Reiseergebnisse und studien. Berlin, 1882. 305 p., 3 taf. 8°.

—— Völkerstämme am Brahmaputra und verwandtschaftliche nachbarn. Reiseergebnisse und studien. Berlin, 1882. 200 p., 2 taf. 8°.

Belgium — Musée royal d'histoire naturelle. Bulletin, tom. i. Bruxelles, *Hayez imp.*, 1882. 6+257 p., 12 pl. 8°.

Braun u. Heider — Zur orientirung üb. die frage der elektr. beleuchtung. Wien, 1883. 8°.

Brehm, A. E. 170 chromotafeln zu Brehm's Thierleben, unter leitung der zoologen Dr. Girtauner, Dr. Klunzinger, O. Schmidt und Dr. Taschenberg nach dem leben ausgeführt vom maler O. Winkler. Leipzig, *Bibliographischer institut*, 1883. 17 plates. (To be completed in 10 quarterly parts.)

Brosius et Koch. Le Mécanicien de chemins de fer. Édition française par Emile With. *Bernard*, 1882. Illustr. 8°.

Brugsch, Heinr. Thesaurus inscriptionum aegyptiacarum. Altägyptische inschriften, gesammelt, verglichen, übertragen, erklärt und autographiert. 1. Abth. A. u. d. T.: Astronomische und astrolog. inschriften altägypt. denkmäler. Leipzig, 1882. 201 p. 4°.

Chavanne, Jos. Afrikas ströme und flüsse. Ein beitrag zur hydrographie des dunklen erdtheils. Mit einer hydrographischen uebersichtskarte Afrikas. Wien, 1882. 235 p. 8°.

Debus — Veranschaulichung der tag-u. nacht-länge. Schleswig, 1883. Lith. fol. auf pappe gezogen.

Delboeuf, J. Éléments de psychophysique générale et spéciale. Mesure des sensations de lumière et de fatigue. Théorie générale de la sensibilité. Paris, *Baillière*, 1882. 12°.

Duchalais, J. Animaux et insectes nuisibles de la Sologne. Romorantin, 1883. 23 p. 8°.

Emery, C. Formiche raccolte (nelle Isole Canarie) dur. le crociere dell' Yacht Corsaro. Genova, 1883. 5 p. 8°.

Fechner, G. Th. Revision der hauptpunkte der psychophysik. Leipzig, 1882. 440 p. 8°.

Graaf, H. W. de. Sur la construction des organes genitaux des Phalangiens. Essai couronné de la médaille d'or par la faculté des sciences de l'université de Leide. Leiden, 1882. Illustr. 4°.

Great Britain — Geological survey. Memoirs. The geology of the country around Cromer. (Explanation of sheet 68 E.) By Cl. Reid. With notes by H. B. Woodward. London, 1883. 8°.

—— *The same.* The geology of the country between Whitby and Scarborough. (Explanation of ¼ sheet 95 N. W.) By C. Fox-Shangways a. G. Barrow. London, 1883. 8°.

Green, Asa T. 'Eureka,' or the golden gate ajar; the mysteries of the world mysteriously revealed. Cincinnati, *Collins*, 1883. 141 p., illustr., ports. 12°.

Grollet, Camille. L'électricité, ses applications pratiques. Paris, *Degorce-Cadot*, 1882. 12°.

Haeckel, E. Indische reisebriefe. Berlin, 1882. 368 p. 8°.

Haeussler, J. W. Beiträge zur mechanischen wärme theorie, insbesondere die mathematische behandlung der von der wärme geleisteten inneren arbeiten. Leipzig, 1882. 76 p. 8°.

Halke, H. Einleitung in das studium der numismatik. Berlin, 1882. 8°.

Hofmann, A. W. Chemische erinnerungen aus der Berliner vergangenheit. Zwei akademische vorträge. Berlin, 1882. 158 p. 8°.

Hoppe, O. Stammbaum der neuen aufbereitungsanstalt bei Lautenthal. Lith. Clausthal, 1883. f°.

James, Powell W. Guesses at purpose in nature with especial reference to plants. London, 1883. 192 p. 12°.

Japing, E. Die elektrische kraftübertragung u. ihre anwendung in der praxis. Mit besonderer rücksicht auf die fortleitung u. vertheilung d. elektr. stromes. Wien, 1883. 256 p., illustr. 8°.

—— Kupfer u. messing, sowie andere technisch wichtige kupferlegirungen, ihre darstellungsmethoden, eigenschaften, etc. Wien, 1883. 208 p., illustr. 8°.

Kareis, J., u. F. **Bechtold**. Katechismus der eisenbahntelegraphie u. des elektrischen signalwesens. Wien, 1883. 160 p., 15 pl. 8°.

Leenhardt, F. Étude géologique de la région du mont Ventoux. Paris, *Masson*, 1883. 274 p., 4 pl. 4°.

Mission Flatters (II.) — Historique et rapports rédigés au service central des affaires indigènes, avec, documents à l'appui et une carte dressée p. Bernard. (Gouvernement général de l'Algérie.) Alger, 1883. 384 p. 8°.

New York — Geological survey. Natural history of New York. Palaeontology, vol. 5, part 1. Lamellibranchiata. Plates and explanations. Albany, *Van Benthuysen pr.*, 1883. 20 p., 80 pl. 4°.

Pocket logarithms to four places of decimals, including logarithms of numbers and logarithmic sines and tangents to single minutes; to which is added a table of natural sines, tangents, and co-tangents. (Van Nostrand's science series, No. 65.) New York, *Van Nostrand*, 1883. 139 p. 24°.

Preble, G. H. A chronological history of the origin and development of steam navigation, 1543–1882. Philadelphia, 1883. 8°.