unduly extol the good features of the state and the importance of the geological survey. The report for 1882 contains a catalogue of the flora (789 species) of the Alpine or central-eastern portion of the state.

NOTES AND NEWS.

IN an appendix to Professor Dexter's 'Biographical sketches of the graduates of Yale college,' Prof. H. A. Newton has given some figures showing the mortality among the graduates of the early years of the college. The graduates considered are those of the years 1702–44, 483 in all. To avoid irregularities, the results have been grouped in sets of ten years. The actual numbers of deaths are compared with the numbers computed from the American and combined experience tables.

Table showing the mortality, actual and expected, by decades of years, among Yale graduates, 1702–44.

Ages.	No. of deaths.	Mortality by American table.	Mortality by combined experience table.
14 to 25	28	18.60	17.64
26 to 35	41	36.03	36.17
36 to 45	48	37.73	40.12
46 to 55	71	46.87	54.02
56 to 65	93	68.17	77.02
66 to 75	98	93.52	97.72
76 to 85	65	83.40	79.93
86 to 95	27	51.31	37.72
96 to 103	2	–	–
Total.	473	435.63	440.34

The most noticeable fact shown by this table is that below the age of seventy the actual mortality so largely exceeded the tabular, the excess being over twenty per cent of the expected mortality. This mortality experience is decidedly different from that of the persons who have been members of the Divinity school of Yale college (*New-Englander*, April, 1873). For them, between the ages of forty and seventy, the tabular *exceeded* the actual mortality by nearly forty per cent of the former. This enormous difference is quite uniformly distributed, and is evidently not principally due to chance. It cannot be due to great difference in the two groups of men. It must rather be ascribed to a difference in the habits of living in the eighteenth and nineteenth centuries.

— It appears from *Nature* that preparation is already making for the meeting of the British association in Birmingham in 1886. It is stated that the meeting will probably be under the presidency of Sir William Dawson of Montreal.

— Dr. Andrée of Leipzig, according to *Nature*, discussed before a recent meeting of the Anthropological society of Vienna the question whether iron was known in America in pre-Columbian times. Meteoric iron was certainly in use amongst certain Indian tribes and the Eskimo, but Dr. Andrée thinks that they were wholly unacquainted with the art of forging iron. This conclusion is based on the fact, among others, that while there is ample proof that the Indians [the author under this term is including the Mexicans and Peruvians] knew how to obtain and employ gold, silver, tin, copper, quicksilver, etc., we hear nothing of iron-mines in the history of the civilization of ancient America. The language itself proves this, for there is no expression for *iron*. Some writers, it is true, speak of the word *panilgue* as that for iron, but it really means metal in general. Moreover, in prehistoric, or rather pre-Columbian, graves, especially in the rainless regions of Peru and northern Chili, ornaments of all kinds, weapons, and implements are found; but no objects in iron have been discovered, although the Indians placed their most valued articles in their tombs. [Meteoric iron has, however, been found in several mounds in Ohio by Mr. F. W. Putnam of the Peabody museum in Cambridge, both in a natural state and hammered; in the latter form used for the same purposes as native copper, both for implements and ornaments.] Dr. Andrée thinks there is no reason to believe that the tools employed in the great masonry-works of Peru, such as that at Tiahuanaco, were other than those in use in the rest of Peru, which were of *champi*, a species of bronze. The chisels found in Peruvian graves soon become blunted when used on the hard strut; but it is suggested that there was some method of sharpening them easily. Indians certainly have worked a hard stone like nephrite without iron; and there is no improbability, says the writer, in the theory that these chisels were employed, when we recollect the patient temperament of the Indians, who for generations were accustomed to the repetition of the same work, to indolently pursuing a uniform task, and also that *gutta cavat lapidem*.

— Dr. G. A. Fischer, in his proposed journey to Lado on the upper Nile, will start, according to the *Athenaeum*, from Pangani, and endeavor to open up a direct route to Speke Gulf. His movements after arriving in Uganda will depend upon circumstances. It is just possible, that, owing to the proceedings of a German colonization society, Dr. Fischer may not find it easy to recruit carriers at Zanzibar. In a paper which he read at the German geographical congress at Hamburg, Dr. Fischer spoke sensibly against some of the utopian schemes of his countrymen. He pointed out more especially that Europeans cannot become acclimatized in equatorial Africa, except perhaps at an altitude of more than five thousand feet, and that even the interior tablelands are free from malaria only where they are barren, and consequently useless for purposes of colonization.

— Twenty-three maps, fourteen by seventeen centimetres, of excellent execution, clear and not overcrowded lettering, form a most convenient pocket atlas, the twenty-first edition of which, entirely remodelled, has just been issued from the geographical establishment of Justus Perthes in Gotha. For a European tourist, nothing could be more convenient, as more than half the maps relate to that continent, and only three to North America and the United States

— The Parker memorial science class of some seventy members has just closed its course of weekly lectures or lessons. These were of a very varied character, being given by some twenty-five persons on successive Sundays, on a great variety of topics. The enterprise of the promoters in securing in many cases excellent speakers is to be commended; but one fails to see any harmony in the general plan, and can therefore only question its utility, beyond satisfying a dyspeptic craving for miscellaneous information.

— An international pharmaceutical congress is to be held in Brussels from Aug. 31 to Sept. 6. The principal subjects of discussion are to be: 1. An international pharmacopeia; 2. Pharmaceutical education; 3. Adulteration of food; 4. Drinking-water and its properties and circumstances. The language used will be French, and the king of the Belgians will be president of the congress.

— On the 4th of July, 1883, during the voyage from Lisbon to Plymouth, a bottle containing a paper was thrown overboard from the German gunboat Cyclop in latitude 39° 41.8′ north, and longitude 9° 41′ west. This was afterwards picked up on the 1st of March, 1885, on the east side of Grand Turk Island, West Indies. This bottle had been afloat one year and eight months, and had probably travelled back and forth in the North African and north equatorial currents. Through the German embassy in Portugal the German seewarte has received a bottle-post paper which was put overboard on the 4th of December, 1884, by the German bark Nubia during a voyage from Rotterdam to Zanzibar, in latitude 16° 13′ north, longitude 21° 53′ west. This was afterwards picked up near Sal Island, Cape de Verdes, in about latitude 16° 52′ north, and longitude 22° 55′ west. The date of the finding of the bottle was not given. The paper was handed to the German consul at Sal Island by the harbor authorities of that place on the 1st of March, 1885. It is likely that this bottle travelled about 70 sea-miles N.W. by W. $\frac{1}{8}$ W. in $2\frac{1}{2}$ months. It is also probable that it lay ashore for some time before it was found, or that considerable time elapsed before the paper was delivered to the German consul. Through the German consulate in Rochefort, France, the same institution has received a bottle-post paper which was put overboard from the German schooner Milly, July 25, 1884, during the voyage from Hamburg to the Marshall Islands, in latitude 48° 18′ north, longitude 6° 48′ west. This was afterwards picked up on the coast on the 14th of February, 1885, in latitude 46° 27′ north, longitude 2° 42′ west. It is probable that this bottle travelled 202 sea-miles S.E. by E. in 204 days. The seewarte has also received a bottle-post paper from Corpus Christi, Tex., which had been put overboard from the German steamer Kronprinz Friedrich Wilhelm, Dec. 26, 1882, in latitude 1° 37′ north, longitude 30° 43′ west. This was afterwards picked up on the 1st of June, 1884, near Padre Island, coast of Texas, in about 27° north latitude, 97° 15′ west longitude. This bottle had probably travelled 4,160 sea-miles W.N.W $\frac{1}{8}$ W. in 523 days.

— Dr. Bernard Schwartz has written a painstaking work on the history of mountain investigation from ancient times to the days of De Saussure ('Die erschliessung der gebirge,' Leipzig, 1885), based on his lectures at the Freiberg mining school. It carries the reader through the early centuries of travel in rugged countries, when mountains were merely obstacles, not objects, in the road; through the middle centuries, when attention to nature was awakening, but when observation was still so uncritical that Teneriffe, for example, was reported nine miles, and even fifteen miles high; and into the modern era, which, so far as accurate measures of altitude are concerned, began in the famous meridian-arc expedition of Bouguer and La Condamine to Peru in 1735. Up to this time Mont Blanc was the 'monarch of mountains,' just as the Alps were the mountains, *par excellence*, of the world; but then Chimborazo took the lead, and held it till 1818, when the English explorations brought the peaks of the Himalaya up to the first rank. The progress and results of mountain exploration are thus minutely chronicled in about five hundred pages, themselves almost pathless, as the table of contents is very brief, and index, page-headings, and paragraph-headings are quite wanting.

— Professor Nowacki of the Polytechnic institute in Zurich has prepared an introduction to the study of soils ('Kurze anleitung zur einfachen bodenuntersuchung,' Zurich, 1885), from which we may measure the attention given to scientific agriculture in Switzerland. It gives a general statement of the structure of soils, and of the method of taking samples, and then proceeds to treat the analysis and classification of soils more at length, and to discuss the determination and supply of needful elements. It is all treated as simply as possible, so as not to be too inaccessible to those who have most need of its teachings. A supplement, however, gives 'the first attempt at a scientific terminology of soils,' which we fear will not soon enter into common use. Seven genera, of six species each, from Terra rudecta limosa aut margillosa to Terra humosa agrestis et hortensis, is at least somewhat cumbersome.

— An extended list of altitudes for nearly three thousand places in the Carnic and Julian Alps has lately been compiled by G. Marinelli, professor of geography in the University of Padua, and published as a supplement to the *Cosmos* of Guido Cora of Turin. It is preceded by a list of a hundred and nineteen authorities, forming in itself a guide to the geographic literature of the region, and is introduced by a well-analyzed table of contents, from which any desired point can easily be found.

— Dr. G. M. Dawson has recently discovered a remarkable Jurasso-cretaceous flora in the Rocky Mountains, on the branches of the Old Man River, Martin Creek, Coal Creek, and one other locality far to the north-west on the Suskwa River. The containing rocks are sandstones, shales, and conglomerates, with seams of coal, in some places anthracite. It was proposed by Sir William Dawson, in his paper before the recent meeting of the Royal society of Canada, to call

these beds the Kootanie group, from a tribe of Indians who hunted over that part of the Rocky Mountains between the 49th and 52d parallels. The beds lie in troughs in the paleozoic formations of the mountains, and may be traced for a distance of a hundred and forty miles north and south. The plants found are conifers, cycads, and ferns, the cycads being especially abundant. Some are identical with species described by Heer from the Jurassic of Siberia, while others occur in the lower cretaceous of Greenland. No dictoyledonous leaves have been found in these beds, which connect in a remarkable way the extinct floras of Asia and America and those of the Jurassic and cretaceous periods.

— In an article on the variations of personality, in the *Journal de Genève*, Dr. Hermann Fol mentions three elements of personality, — consciousness, memory, and volition. Of the first there are several kinds, notably consciousness of sensation, where the sensation proper must be distinguished from our consciousness of it. If the latter is lost periodically, and the condition alternates at regular intervals with the normal state, a sense of double existence is produced; and the same state arises when consciousness of sensation is carried to an extreme. In regard to the memory, a person sometimes seems to have two distinct memories which act alternately. The duplication is particularly noticeable in the case of somnambulists. If it occurs in a state of wakefulness, the person seems to have two distinct personalities. Only the normal memory forms an element of the personality. The personality may also be altered by a change in our idea of the future. Absent-mindedness, and yielding to involuntary impulses, are the outward signs of this kind of mental disease. In conclusion, Dr. Fol thought men differed less in the extent of their faculties than in the extent of their consciousness of them.

— An aeronautical exhibition under the patronage of the Aeronautical society of Great Britain was to be opened, says *Nature*, during the present month, in connection with the International exhibition at the Alexandra palace. The large out-door space will be made available for various competitions. The disputed question of aerial locomotion by the aid of buoyancy will be tested. Possibly the fire in the building in the early part of June may interfere with the plans.

— A course of ten lectures on the practical analysis of plants was finished on June 20 at the Cincinnati society's rooms. They were given by Jos. F. James, and were instituted for the special benefit of the teachers in the public schools. They were free to those invited, and were attended by from fifteen to twenty teachers. The society proposes to give similar courses of lectures on Saturday mornings in the fall. The first one will probably be on physiology and hygiene, followed by one on physical geography.

— We regret to notice the death of Rev. T. W. Webb at Hardwick, Eng., on the 19th of May. He is known everywhere to astronomers, to amateur astronomers in particular, as the author of 'Celestial objects for common telescopes,' — a book which is said to have "done more to interest observers in the heavens than any other book that has been published." He was a frequent contributor to *Nature*, the *Intellectual observer*, the *English mechanic*, etc. One of his most recent works was a popular book on the sun. We learn from the *Astronomical register* that he was appointed a prebendary of Hereford Cathedral in 1882; and, if he had lived a few weeks longer, he would have completed his eightieth year.

— Entomologists will be sorry to learn of the death, on the 15th inst., at his home in Morgantown, N.C., of Mr. H. K. Morrison, a noted collector of insects, probably the most successful and enthusiastic in this line of any we have had. A large proportion of his collections went to Europe, where they were eagerly sought; and the literature of descriptive entomology for the last ten years in this country shows everywhere the indications of his zeal.

— A correspondent of the *English mechanic*, writing from Morchain, Somme, France, says, "A boiler of a new system, which received the name of *générateur tricyclique inexplosible*, has been invented, which differs from all those hitherto produced. The metallic surface submitted to the action of the fire does not touch the water; in no condition can the boiler get red-hot; it is enveloped all over by the same temperature: hence an immense vaporization; and steam can be produced to the very last drop of water without the least danger."

— Jules Garnier has designed an elevated railway for the city of Paris, which it is expected will be in running order in time for the exposition of 1889. It will be twenty-eight thousand eight hundred metres (about eighteen miles) in length, and will cost ten millions of dollars. The structure will be composed of two tracks, one above the other, on an iron frame. The whole will be fifteen metres from the building-line, and vibrations will be guarded against by special appliances. The trains will be composed of three American cars, each fourteen metres in length, and two platform or open cars. They will run every five minutes for seventeen hours each day, and will have branches connecting with the several railway-stations.

— A new volume of memoirs of the Siberian section of the Russian geographical society contains a description of Lake Balkhash by Fischer, an account of the Vassiugan tundras, a list of geographical positions determined by Lebedeff, and other documents of importance.

— Vesque's 'Traité de botanique' (Paris, *Baillière*), which was written, as the author states, as supplementary to lectures delivered at the Institut agronomique, is prefaced by a brief review of the characters of classificatory value in botany, but is in the main a concise synopsis of the phenogamic orders of importance. The scientific reputation of its author is a sufficient guaranty of its accuracy; and the information it contains is rendered easily accessible by a complete index to the illustrations and specific descriptions, and to the principal products mentioned.