able enclosures and in the elaboration of the form of the reptile, that it might be the more real. The natural and the artificial features must all have related to one and the same conception. The point of naked rock was probably at first and always recognized as the head of both the natural and the modified body. It was to the Indian the real head of the great serpent manito.

W. H. HOLMES.

NOTES AND NEWS.

ON the 8th of December, at Victoria, British Columbia, died Dr. W. F. Tolmie, known to ethnologists for his contributions to the history and linguistics of the native races of the west coast. Dr. Tolmie was born in Scotland, but had been resident on the west coast since 1833, at first as medical officer to the Hudson's Bay company's port of Fort Vancouver on the Columbia River, but afterwards becoming a chief factor in the company's service, from which he retired in 1870. During the Indian war in the Oregon territory in 1855–56, his knowledge of the language and influence among the Indians enabled him to render efficient service in pacifying them. Dr. Tolmie dated his interest in ethnological matters from his contact with Mr. Horatio Hale, who visited the west coast as ethnologist to the Wilkes exploring expedition. He afterwards transmitted vocabularies of a number of the tribes to Dr. Scoulèz and to Mr. George Gibbs, some of which have been published in 'Contributions to American ethnology.' In 1884 he published, in conjunction with Dr. G. M. Dawson, a nearly complete series of short vocabularies of the principal languages met with in British Columbia, and his name is to be found frequently quoted as an authority on the history of the north-west coast and its ethnology in the works of Bancroft and other authors. He was at all times ready to place his extensive and accurate knowledge on these subjects freely at the disposal of inquirers.

— The financial position of the American geographical society has been greatly improved in the past two years by the lease and possible sale of a portion of its real estate upon very remunerative terms. Upon the completion of this sale, and upon the sale of the building in Twenty-ninth Street now occupied by the society, the council have in mind the erection of a large building which will be an ornament to the city, and more suited to the growing needs of the society, — a building which will be fire-proof, to furnish the society with a safe and proper place in which to preserve its constantly increasing collection of valuable books and maps. The erection and furnishing of this building will necessarily entail increased expenditures, to provide for which, without burdening the present members, the council suggests that the number of fellows be largely increased. If each member will interest himself in this respect, the membership will be largely increased, and the amount which it is estimated the society will annually need in its new building will be the more readily attained.

— The English do not propose to permit the statue of Liberty in New York harbor to rank as the biggest on record, without a contest. The *Illustrated London news* comes forward with a description of the colossal statues of Bamian, together with measurements and illustrations. Travellers, oriental and occidental, have spoken of these statues from time to time, but accurate measurements of them were first made by the surveyors who were attached to the Afghan boundary commission. Bamian, where these statues are, is on the road from Cabul to Balkh, where it crosses the Paropamismus range. The elevation is about 8,500 feet above sea-level. There are five statues, three of them, including the largest, being in niches, the figures being formed of the rock within the niche. Captain Talbot of the boundary commission, using a theodolite, found the tallest statue to be 173 feet high, whereas the statue of Liberty is only 151½ feet high. Since Liberty is on a pedestal, however, the statue of Bamian must rank below her, unless the English propose to count its 8,500 feet elevation above sea-level as a pedestal. The Bamian statues seem to be Buddhist idols of great antiquity, and the natives have a variety of legends concerning them.

— The annual report of the coast and geodetic survey was submitted to congress recently. The report states that the demands upon the survey have been not only for accurate charts of the seacoast, but also for correct data upon which the several states can base maps of the entire territory. During the past year, due consideration has been paid to immediate and pressing demands for resurveys of important harbors and highways of commerce, and special care was taken to give wide publicity to discoveries of dangers to navigation. Hydrographic surveys were prosecuted off the coasts or in the waters of fifteen states and two territories. Important investigations in terrestrial magnetism, physical hydrography, and geographical history, have been made. The aggregate of estimates for the next fiscal year ($560,765) is considerably larger than the appropriation for the current year, but is less than the

average appropriation for many years past. The report also speaks of the advance toward completion of the resurvey of New York bay and harbor, to the studies of ice formation and movement in Delaware river and bay, to the observation of currents in the Gulf Stream, and to the near approach of the transcontinental triangulations, which will form a geodetic connection between the work on the Atlantic and that on the Pacific.

— The remarkable regularity in the recurrence of climatic conditions, as well as the small variation in the weather on a subtropical island, is illustrated in the following table of maximum and minimum temperatures in the summer months of 1885 and 1886, at Nassau, Bahamas, clipped from a paper published there.

Month.	TEMPERATURES, FAHRENHEIT.			
	Maximum.		Minimum.	
	1885.	1886.	1885.	1886.
May.....	85°	85°	67½°	67½°
June.....	86½	87	71½	73
July.....	88	88¼	75½	76½
August.....	88¾	87½	73½	73
September.	87¼	86	73½	72½

Thunder-storms seem unpleasantly frequent. In 1885 there was lightning with rain every two days from May to September, with a violent storm about once a week; in 1886, lightning and rain were as frequent, but severe storms were reduced to only once a fortnight. The general absence of lightning-rods makes these storms a rather dangerous element in the summer weather of Nassau.

— An interesting case is reported to have occurred at Rising Sun, Ind. According to the accounts, a man named Seward, a farm-laborer, aged twenty-eight years, became sick about six months ago. At first there was nothing especially noteworthy about his sickness except that he was easily tired. Although a man of unusual strength, two hours of labor completely prostrated him. This increased, until, after two months, he was totally unfit for work, and at the same time his skin became changed in color. In health a blonde, with gray eyes, his face became ash-color, and then darker and darker, until, at the time of his death, it was like that of a negro. The neck, shoulders, hands, fore-arms, and afterwards other portions of the body, became similarly affected. The disease above referred to was undoubtedly what is known as Addison's disease. In 1855 Dr. Thomas Addison first described it. He regarded it as connected with disease of the supra-renal capsules, and since his day there has been but little more learned about its causation than Addison himself knew. The deposit of pigment in the lowest layers of the epithelium is the outward manifestation of the affection, though why it should be so deposited is not known. The disease occurs in adult life, very seldom in childhood or in old age. Males and laborers are usually the patients. Although it may last for many years, it is almost invariably fatal. Dr. Greenhow has devoted especial attention to this disease, and treats of it in the 'Croonian lectures on Addison's disease,' published in the *Lancet* in 1875. In vol. iii. of 'System of medicine by American authors,' is an article on the subject, written by Professor Osler, to which we would refer those who desire more particulars of this remarkable disease.

— The next number of the Proceedings of the American society for psychical research is to be issued as soon as sufficient material is collected. The council is anxious to obtain, so far as may be possible, the co-operation of all members and associate members of the society, in the preparation of this number. All members are therefore earnestly requested to report any experiences or observations which they may have collected on any subjects falling within the range of the society's work. Edw. G. Gardiner, 12 Otis Place, Boston, Mass., is the secretary.

— A curious feature of the weather, described in the Ohio meteorological bureau report for September last, is the damage caused by the lightning in a violent storm on the 23d of the month. The rain was very heavy at certain stations, Sidney reporting 5.57 inches in twenty-four hours. At New Bremen the storm began at 8 P.M. on the 22d, with high wind and hail-stones. From 2 to 3 A.M. on the next morning there was a continuous blaze of lightning. As the storm moved eastward, it entered a region of oil-wells, where derricks and tanks were struck, and large quantities of oil set on fire. At Lima the lightning struck a derrick, and ran thence by a pipe-line to a tank thirty rods distant, where it fired a thousand barrels of oil. Old oil-men said they had never experienced such storms in the Pennsylvania oil-fields, and were anxious to know if they were common in Ohio. The Ohio monthly report now occupies fifty-eight pages, and presents the records of thirty-seven stations in much detail.

— The northern portion of the Sierra Nevada, as recently summarized by Diller in bulletin 33 of the U. S. geological survey, may be briefly described as an old lowland made up of granite

and tilted and folded slates, worn down smooth, close to its base level of erosion, and then recently unevenly elevated in three great blocks. Every block is slightly tilted to the westward, and separated from its neighbor by a fault with bold face, falling steeply to the east. Longitudinal valleys lately occupied by lakes lie between the eastern face of one block and the long western slope of the next. During and since the uplift, streams flowing westward down the longer slopes have cut deep cañons. The date of the faulting is in great part later than the lavas of Lassen's Peak and thereabouts, and it is at least very likely that the dislocation is still in progress. The limestone beds of the region are considered of carboniferous age by previous observers, but a large portion of the auriferous slate series is thought to be of older origin.

— A recent supplement (No. 83) to Petermann's *Mittheilungen* contains an elaborate account by Dr. Berndt, of the effects of the foehn — the hot, dry wind of the Swiss valleys — on organic and inorganic nature. The memoir is prefaced by a good description of the wind itself: it is illustrated by a map showing the valleys, south as well as north of the divide, that are most frequented by it, and also by two weather-charts for the foehn of Feb. 20, 1879, demonstrating its relation to a cyclonic area of low pressure that crossed Europe from France over central Germany on that day. The body of the work is concerned with the action of the foehn on the mountain snow, and the floods thereby produced in the valleys, with its relation to rock-weathering and consequently to topography, and to its effects on plants, animals, and men. The danger of village fires is great during the prevalence of the hot wind, and extra watchmen are employed then. After the town of Glarus was thus burned in 1861, even smoking was prohibited outdoors and in the public streets during the blowing of the foehn.

— Dr. Forel, the distinguished Swiss entomologist, has recently published an account of experiments designed to ascertain whether the perception of the ultra-violet rays of the spectrum by ants took place by means of their eyes, or as a photo-chemical action on the skin. By varnishing the eyes of some ants, it became evident that the main impression was a visual one: such ants did not exhibit the preference for darkness above ultra-violet light which normal ants showed. This does not absolutely exclude any action on the skin, but makes it improbable. It is interesting to note that the blind are unable to judge of the amount of light in a room if care is taken to exclude the effects of heat and other indications.

— The college building in Charleston was so much injured by the recent earthquake that they have been obliged to pull down entirely the two wings, equivalent to nearly half the space occupied by the whole building. Half of the specimens in the museum of natural history, and all the physical and chemical apparatus. have been removed, and crowded into the remaining portion, which has also to serve for lecture and recitation rooms. The private library and collection of Mollusca and Crustacea belonging to Prof. L. R. Gibbes, and probably the most valuable in the south, were also in one of the wings, and of course had to be removed. Our naturalists will have great sympathy for those upon whom this unlooked-for labor has fallen, but will be glad that the collections are uninjured.

— A very interesting communication to the *Medical news* has been made by Dr. F. Peyre Porcher of Charleston, on the influence of the recent earthquake shocks in that city upon the health of the inhabitants. In addition to the natural alarm and fright which were quite universal, some persons were attacked with nausea and vomiting, which recurred or persisted in several cases for days. Two gentlemen on the islands eighty miles from Charleston had their eyes filled with tears not to be repressed, but not caused by alarm, or fears for their personal safety, for the danger there was not imminent. Many persons experienced decidedly electrical disturbances, which were repeated upon the successive recurrence of the shocks. These were generally tingling, pricking sensations, like 'needles and pins,' affecting the lower extremities. One gentleman was completely relieved of his rheumatism; another, who for months was nervous, depressed, and entirely unable to attend to business, regained his former activity and energy. Several cases of mental disturbance, owing to anxiety and prolonged loss of rest, some of them persistent, occurred among Dr. Porcher's patients.

— We had occasion in a recent number of *Science* to refer to a remarkable case in which the breath of an individual, or rather the eructations from his stomach, took fire when brought in contact with a lighted match. This case, which was reported in the *Medical record*, has called forth communications from physicians by which it would appear that the phenomenon is not such a rare one as was at first supposed. In one case of disordered digestion the patient emitted inflammable gas from the mouth, which, upon analysis, was found to be largely composed of marsh gas. In another case the gas was sulphuretted hydrogen. A case is reported in the

British medical journal, in which, while blowing out a match, the patient's breath caught fire with a noise like the report of a pistol, which was loud enough to awaken his wife. One evening, while a confirmed dyspeptic was lighting his pipe, an eructation of gas from his stomach occurred, and the ignited gas burned his mustache and lips. In Ewald's book on indigestion, the analysis of the gas in one of these cases was, carbonic acid, 20.57; hydrogen, 20.57; carburetted hydrogen, 10.75; oxygen, 6.72; nitrogen, 41.38; sulphuretted hydrogen, a trace. The origin of these gases is undoubtedly the undigested food, which in these cases undergoes decomposition.

— Dr. Gilles de la Tourette finds that the average step of men is twenty-five inches; for women, twenty inches. The step with the right foot is somewhat longer than that with the left. The feet are separated laterally in walking about four and one-half inches in men, and five in women.

LETTERS TO THE EDITOR.

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

Cremona's Projective geometry.

YOUR review of this work does scant justice, I think, to one of the most valuable text-books recently published. We have a multitude of elementary books in all branches of science; but why most of them are printed, there seems to be no reason, unless it be the reason why cheap razors are made. For my own part, I am thankful when we get a book such as Professor Cremona has given us, — a book so well designed to give the student more general views of geometry. ASAPH HALL.

Washington, D.C., Dec. 28.

Pleuro-pneumonia.

Referring to Mr. Butler's communication and your editorial remarks on p. 587, it may be of interest to put on record the fact that horses have suffered quite extensively, particularly in Indiana and Missouri, from what Dr. Salmon has decided to be vermicular or verminous bronchitis. He has fully treated of this disease, and illustrated the Strongyli which induce it in calves and lambs, in the veterinary part of the 'Agricultural report for 1885.' That producing the disease in horses seems to be Strongylus micrurus meplis, which is carefully figured on plate V., and described on p. 557. It is an elongate, thread-like worm from an inch and a half to two inches in length; and the point that I wish to put on record is that these Strongyli have very generally been supposed to have some connection with the narrow elongate eggs of Orchelimum glaberrimum. The eggs of this species are inserted in the pith of a number of different plants, and are particularly abundant in stalks of corn-tassels. The punctures were figured in my 'Fifth report on the insects of Missouri,' and again referred to in bulletin 6, U. S. fish commission The bronchial disease which has been so prevalent and fatal to horses has been quite generally associated with these eggs, the supposition being that the horses became diseased by eating the corn tassels and stalks. The Orchelimum eggs have been received from about a dozen different correspondents, all of them independently making the same suggestion as to their connection with the bronchial worms, a rather remarkable instance of a prevalent and popular error arising from an imperfect knowledge of natural science.

C. V. RILEY.

Washington, D.C., Dec. 27.

Stereoscopic vision.

I would like to inquire of the readers of *Science* if it is generally known to be possible — and if, indeed, it is possible to all persons — to obtain a complete stereoscopic effect in viewing a *single* picture, and without a glass or other instrumental aid.

I have for several years been in the habit of practising a method in looking at photographs or good engravings, which, with me, makes the illusion perfect, and the objects pictured seem to stand out in full relief like the real objects.

In consists simply in entirely closing one eye, and shutting the other as nearly as possible, while admitting just sufficient light to afford a distinct, or at first rather dim, view of the picture. It is necessary first, however, to see that the picture is placed in a light corresponding as accurately as possible in direction with that in which the objects are represented in the picture: for example, if the scene is shown as lighted from the left, let the picture be so held that the actual illumination is from the left, and exactly at the same angle. An incongruity in this respect will spoil the result entirely. A little time is usually required to realize the full effect, and probably many persons unaccustomed to the experiment will need to exercise more patience at first than after some practice.

It is found, too, that a picture presenting strong lights and shades, as of photographs of objects in the direct sunlight, or engravings of the same character, produces the effect most readily. Take, for example, the engravings representing highly magnified views of the scenery on the surface of the moon, such as those illustrating Professor Langley's article 'The new astronomy,' in the *Century*. After looking at one of those in that manner for a few moments, the parts represented as elevations appear to rise from the paper; and, indeed, the flat surface disappears altogether, as well as the inky blackness of the shadows, and both elevations and depressions appear in startling reality.

The lights and shadows appear to be merely the illuminated and unilluminated portions of the same uniformly colored substance, showing it distinctly carved in all the reality of the forms intended to be indicated. It seems as if one could closely estimate the actual heights of the elevations, and the lengths of the shadows, and the precise position of the source of light.

The illusion once perfected, it may be retained while opening the eye a little, thus gaining a clearer view; but, carrying this a little too far, the scene at once 'flattens out' again, and becomes a mere lifeless black-and-white representation of the outlines, producing nothing of the impression of reality of contour: the landscape is gone.