opposites. We cannot admit, therefore, that Germans are to be pardoned for not trying to present their many and valuable discoveries in articles well arranged and in language well chosen. It may be, however, that this will not come about until a set of leaders shall have established the 'folk-mode' of good writing. M.

THE HEALTH OF NEW YORK DURING NOVEMBER.

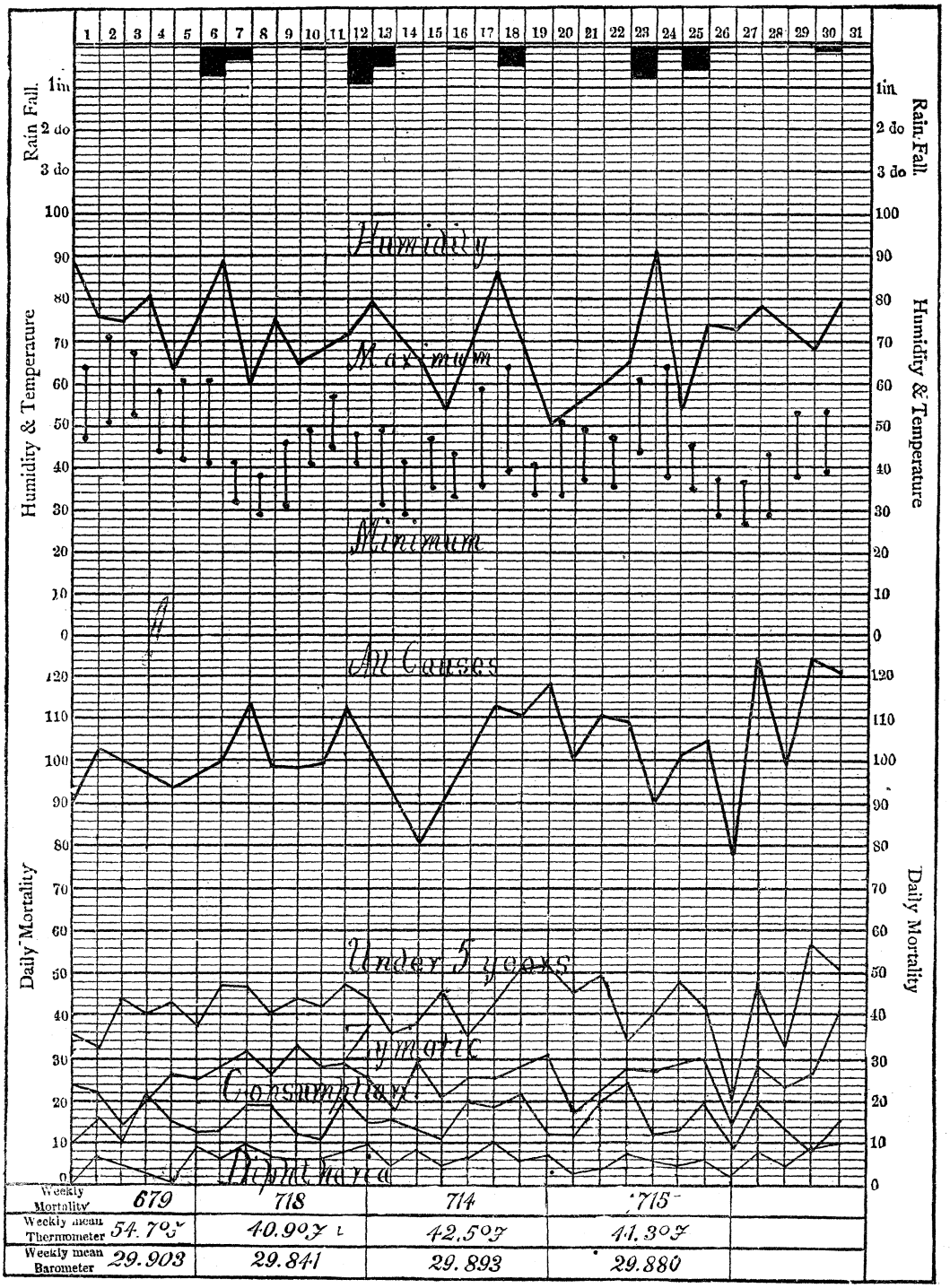
THE total number of deaths which occurred in New York City during the month was 3,076, an increase of 99 over the previous month: 1,290 of these deaths were of children under five years of age. The decline in the mortality due to diarrhoeal diseases is very marked, being but 87 as compared with 234 in October. The deadly influence of the oppressive heat of our midsummers is nowhere better illustrated than when we compare the deaths from these diseases in July and in November. In the former month no less than 1,382 persons are recorded as having died from this cause, while in the latter but 87 succumbed to affections of the bowels. From consumption 459 persons died, an increase of 27 over October. Diphtheria, which began in October to figure more prominently as a mortality factor, has not yet relaxed its hold, and is chargeable with 188 deaths, 23 more than in the previous month. The deaths from scarlet-fever were only 23, practically the same as in October, the difference being but 5. Measles is now very prevalent in New York, and is assuming such proportions as a cause of death, that we shall in the future include it in our chart. Small-pox is still absent from the city, — a fact which reflects great credit upon the health department, for, with its prevalence in Brooklyn, it seemed almost impossible for New York to escape without becoming infected to a slight degree at least.

The meteorology of the month has not been characterized by any great variations from the normal or average, either as to temperature or rainfall. The maximum temperature was 71° F., at 3 P.M. of the 2d, the average for ten years being 67.9° F.: the minimum was 27° F., at 5 A.M. of the 27th, somewhat above the average of the past decade, which was 22.2° F. The rainfall for the month was 4.42 inches, 0.25 of an inch more than in October. The November average for ten years is 3.19 inches.

THE *Fortnightly review* is to begin in its January issue the publication of a series of unsigned articles on 'The present political situation in Europe.' It is expected that these articles will be very important, and attract much attention.

A SKETCH OF THE GREAT SERPENT MOUND.

ACCEPTING an invitation from Dr. Cyrus Thomas to accompany him on a visit to a number of the ancient monuments of southern Ohio, I had the long-wished-for opportunity of examining the great Serpent Mound. This work is situated in the northern part of Adams county, somewhat remote from frequented routes of travel, and hence rarely visited by people from a distance. Several accounts have been published, however, the first in the classic work of Squier and Davis, and subsequent ones by McLean, Putnam, Allen, and others. The map given in the first-mentioned work conveys, as far as it goes, a fair idea of the extraordinary structure, but is characterized by remarkable omissions. Some of the more decided shortcomings have been pointed out by recent writers, who have, in their turn, fallen into the opposite error of over-elaboration. I venture to present a few notes and observations which will assist in enabling those who cannot visit the locality, in gaining a clear conception of the work and its surroundings. The valley of Brush Creek is bordered by an extremely rugged country, abounding in high hills which reach an elevation of perhaps six hundred feet above the bed of the creek. Entering from the north, we skirt the eastern rim of the valley, and descend at Lovett's farm upon the subordinate levels that border the stream. Leaving the road and crossing the fields, with the Lovett dwelling on the right and a small circular mound on the left, we reach the brink of a steep cliff which descends about one hundred feet to the stream bed. Turning our faces up stream, we find ourselves at the insertion of a long, narrow spur, described as 'crescent-shaped,' which holds its level to the extreme point, and slopes abruptly to the brink of the cliffs at the left, and rounds off more gently into the deep gulch at the right. This spur narrows up farther on, and terminates in an abrupt promontory, around the base of which a small branch from the gulch at the right turns, and crosses the strip of alluvial bottom to the creek. Along the rounded grassy crest of this ridge we can detect the obscure serpentine coils of the earthwork, and descending a little to the left, and almost to the brink of the cliff, we reach the tail of the serpent. Beginning with a small pit at the terminal point, we follow the unfolding coil for two full turns, and then advance along the body to its highest point upon the ridge. The curves are strong and even, and the body increases gradually in height and width as we advance. Upon the crest of the ridge we find ourselves at the beginning of three great double folds. Following these, we descend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Rain Fall.
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Air Causes
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Rain Fall.
Humidity & Temperature
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Weekly Mortality 679 718 714 715
Weekly mean Thermometer 54.7° 40.90° 42.5° 41.3°
Weekly mean Barometer 29.903 29.841 29.893 29.880

into a slight sag in the ridge, caused by the encroachment of opposing drainage, and ascend again slightly to a point where the body straightens out along the ridge. Beyond this we reach the curious enlargement with its triangular and oval enclosures. Here the body embankment is divided into two parts, which respectively pass to the right and left of the enclosures. At the sides they descend slightly upon the slopes of the ridge, and at the widest part of the oval are somewhat obscure on account either of original conformation or of subsequent erosion. Beyond these breaks they continue, closing entirely around the oval embankment within. From the point of junction the body continues for a short distance, perhaps forty feet, and then terminates in a rounded and slightly widened point. This terminal elevation is entirely omitted by Squier and Davis, but is noticed by more recent writers; and, on account of the supposed presence of obscure auxiliary ridges of earth extending down the slopes to the right and left, it is likened to the body of a frog by Mr. McLean. These auxiliary ridges, and the minor appended features recognized by Squier and Davis and by some recent visitors, are too obscure to be identified with absolute certainty, and I consider it unsafe to introduce them into my illustration; but the entire body of the serpent, and the peculiar features of the enlarged portion, are all distinctly traceable, as shown approximately in the accompanying map, and leave no doubt in the mind as to their artificial character. The work was carefully laid out and neatly executed, and, reduced as it now is, it is of a most stable nature. The earth employed is extremely compact; and the elevation of the body is so slight, as compared with its width, that time, unassisted by the plough, produces but little change. The height rarely reaches three feet, and the width at the base is in many parts fifteen feet or more.

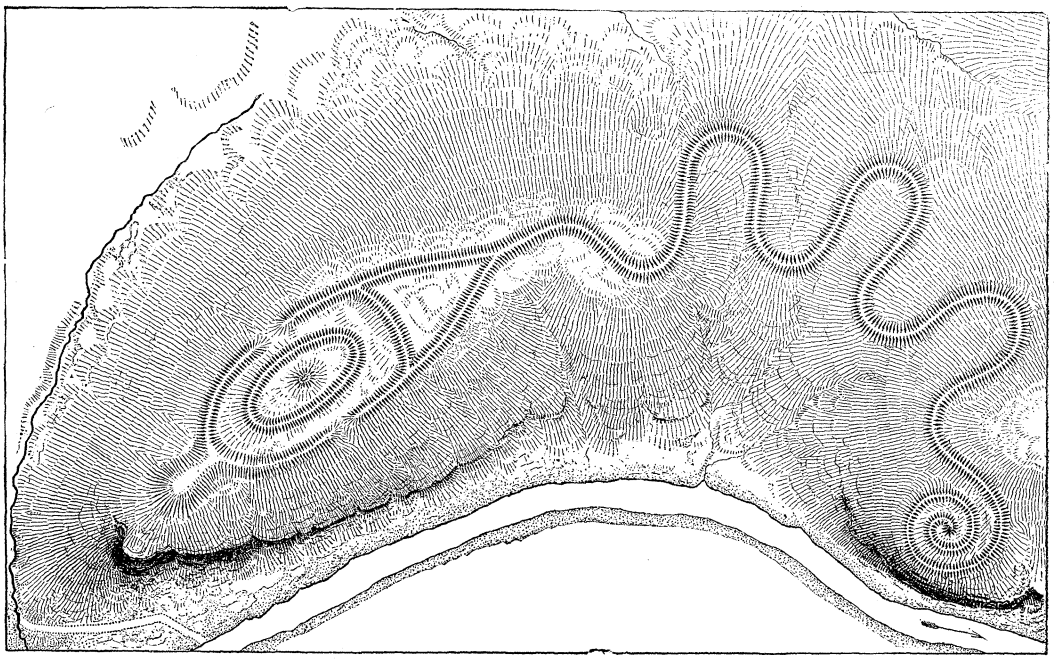

FIG. 1. — SKETCH-MAP OF THE GREAT SERPENT.

The topography of the outer end of the promontory is somewhat peculiar, and needs to be briefly described. The extreme point is about thirty feet beyond the end of the artificial embankment, and is slightly cleft in the middle. The right-hand portion has no exposure of rock, and descends in a narrow, rounded spur to the rivulet at its exit from the gulch. The left-hand point is a naked shelf of rock a little to the left of the direct continuation of the earthwork, and some ten feet below its terminal point. It is rounded at the margin, and perhaps twenty-five feet wide.

Descending upon this rock, we are upon the brink of a slightly overhanging ledge composed of rather compact, nearly horizontal beds of lime-

stone. The outline is curved, and presents a number of encircling ledges marking the thickness of the firmer strata. The rock immediately beneath is massive and coarse-grained, and, from rapid disintegration, has receded a number of feet, and exhibits a tendency to weather into caves. The entire exposure of rock at the point is perhaps forty feet in height. Beneath this a talus slope some thirty or forty feet in height, and covered with bushes, extends to the creek bottom. Descending the bluff at the left of the point, and crossing the belt of bottom land, we get a comprehensive idea of the promontory. In the sketch presented herewith, the numerous forest-trees and all undergrowth are omitted. It will be seen that from the point the exposure of rock extends back along the creek, descending slightly and soon disappearing, save where occasional masses project through the rounded slopes. The minute figure that the terminal portion is a frog, as suggested by McLean. It would not seem unreasonable that the former feature should be simply the eye of the effigy; but we have another explanation more in accord, perhaps, with the analogies of native ceremonial art. The heart, which represents the life, is made a prominent feature in all superstitious delineations of living creatures, as shown by a multitude of examples. When we restore the neck and head of the reptile, omitted by Squier and Davis and misinterpreted by others, the strange oval takes the position of the heart, and in all probability marks the site of the ceremonies that must have been connected with this work. This leads to a consideration of the proper identification of the head of the effigy, and the relations of the natural to the artificial features of the site. From the point of view of my second illustration, we have a comprehensive view of the

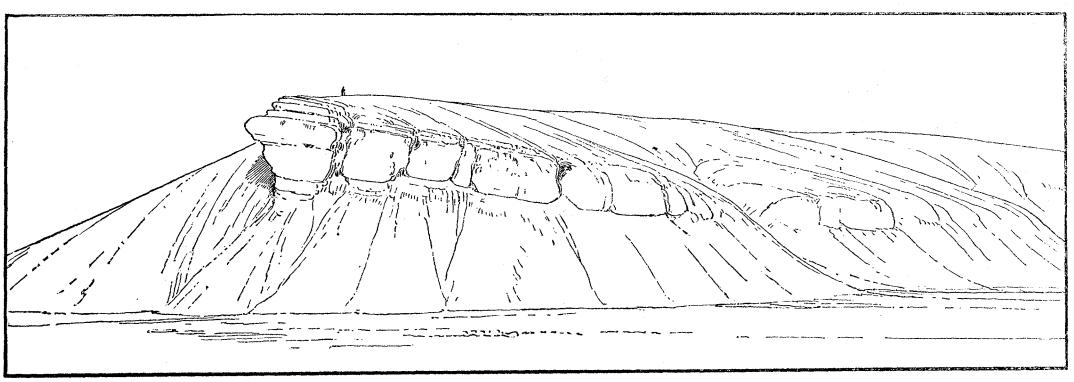

FIG. 2. — THE SERPENT HEADLAND FROM THE CREEK BANK, TREES OMITTED.

of a man is intended to indicate approximately the termination of the artificial embankment.

I wish now to call attention to a few points bearing upon the origin and significance of the work and its possible relations to the topography of the site. The use of the serpent by our aboriginal races has been well-nigh universal, so that we need not hesitate to class this specimen with other products of their religion, and we should naturally expect to find the counterpart of each feature in other representations, ancient and modern.

Most of the attempts to throw light upon the more extraordinary features of the work have been made through the medium of oriental philosophy; but it is manifestly wrong to go thus out of our way to seek a symbolism for the oval enclosure, as do Squier and Davis, who liken it to the symbolic egg of old-world philosophy; nor need we make a serious effort to combat the idea serpent ridge. Having the idea of a great serpent in the mind, one is at once struck with the remarkable contour of the bluff, and especially of the exposure of rock, which readily assumes the appearance of a colossal reptile lifting its front from the bed of the stream. The head is the point of rock, the dark lip-like edge is the muzzle, the light-colored under side is the white neck, the caves are the eyes, and the projecting masses to the right are the protruding coils of the body. The varying effects of light must greatly increase the vividness of the impressions, and nothing would be more natural than that the Sylvan prophet, secluding himself in this retired part of the wilderness, should recognize this likeness, and should at once regard the promontory as a great manito. His people would be led to regard it as such, and the celebration of feasts upon the point would readily follow. With a mound-building people, this would result in the erection of suit-

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