investigation. If the existence of man in miocene time in France and Portugal be confirmed, then our author is wrong. For ourselves, we do not yet accept the miocene man.

All traditions, too, the author thinks, when rightly interpreted, confirm his conclusion. They all point to a golden age and an original home to the north; they all speak of this home as the centre, — the navel of the earth; they all speak of the revolution of the heavenly bodies about a fixed zenithal pole, the abode of the gods; they all speak of a migration enforced by a deluge. To confirm his interpretation, he quotes from traditions of Chaldeans, Persians, Hindoos, Chinese, Japanese, Egyptians, Greeks, and Scandinavians. Classical scholars will doubtless be interested in his view of Homeric cosmology and geography as represented in his frontispiece. To them we leave the question. The author's view certainly seems plausible.

For the author, then, the place of origin was the north pole; the time of origin, the miocene period. The third question is, What was the character of primeval man? On this question the author takes a somewhat middle ground between extreme opinions. He thinks that primeval man of paradise was wholly destitute of all, even the simplest arts, and therefore, we suppose (although he does not say so explicitly), of language. Nevertheless, he thinks he was endowed with simple, and comparatively noble, religious ideas; and that the revolting bestialities of savage life are the result of retrogression. A cautious science will have little to say on this question; but retrogression is certainly as much a law of evolution as is progression. The author's view is therefore not improbable. Childhood, with its simple faith and reverential love, is certainly a nobler thing than a degraded manhood. For obvious reasons we do not think that traditions of a golden age amount to much as argument.

But when the author sustains the traditional idea of gigantic stature and millennial longevity of primeval man, science will, we think, demur. The popular belief that animals of early times, in comparison with existing species, were gigantic, will hardly bear examination. The true view seems to be this: in the history of the earth, there have been periods peculiarly favorable for the development of different orders and families of animals, during which they increased, culminated, and then declined. The mesozoic was such a period for reptiles, the tertiary for mammals. The time of culmination, however, is never at the beginning, but in the middle or near the end. Is it not possible that the present is such a period for man? All the scientific evidence we have is in favor of increasing rather than decreasing size. Also we would remind the author that the decreasing size of which he speaks was in successive species, and even genera. Will he admit that the Edenic man was a different species, or even genus? He may, indeed, well do so, if he carries man back to the miocene. Again: if he likes analogies of this kind, we would remind him of the very notable increase of brain-size in all families of animals since miocene times. Is he prepared to admit the very small brains of Edenic man?

The millennial longevity we dismiss with the remark that we do not believe it can be sustained on natural grounds.

We are sure the author will thank us for calling his attention to some scientific mistakes. 1. On p. 66, in speaking of polar twilight, he says in substance, that, if twilight continues until the sun is 20° below the horizon, it would make a full polar night of sixty days; but, if until 24° (which he thinks probable), it would make it only fifty days. Now, the inclination of the ecliptic is only 23° 28′: therefore the sun would never get so far below the horizon, and therefore in the case supposed there would be no night at all. 2. On p. 194, speaking of the aspect of the heavens on Pamir plateau, he says that the pole of the heavens is tilted about one-third from its zenithal position towards the horizon. It is nearer two-thirds, for its latitude is about 35°. 3. On p. 412, as an example of degradation instead of progression, the author quotes from *Science* to the effect that the recently discovered Silurian scorpion is a more perfect specimen than any found in later formations; but the writer obviously meant more perfectly preserved specimen, not more perfectly organized animal.

THE LENÂPÉ AND THEIR LEGENDS.

THE *Walam olum* (or 'picture record') of the Delawares has long been known to scholars, though imperfectly, as one of the most remarkable productions of the Indian intellect. It was discovered about the year 1820, somewhere in the west (exactly how or where is uncertain), by that eccentric naturalist and antiquarian, C. S. Rafinesque, who held for some years the very comprehensive professorship of the 'historical and natural sciences' in Tran-

The Lenâpé and their legends; with the complete text and symbols of the Walam olum. By DANIEL G. BRINTON, A.M., M.D. Philadelphia, *Brinton*, 1885. (Brinton's library of aboriginal American literature, No. 5.) 6+262 p., illustr. 8°.

sylvania university, Kentucky. After his death in 1840, the manuscript of the Delaware record came for a time into the hands of the distinguished archeologist, Mr. J. L. Squier, who in 1848 read before the New-York historical society an incomplete summary of its contents, giving only a portion of its Indian text and of the symbols. This was published soon after, in the *American review*, and has been since reprinted in other publications. Thus enough has been known of this singular composition to excite the curiosity of students of Indian archeology, who have long regretted the disappearance and supposed loss of the original manuscript. By persistent inquiry, Dr. Brinton has succeeded in recovering it, and has now published the work in full, with all the mnemonic signs, the Delaware text, a new and exact translation, an ample introduction, and many useful notes.

Rafinesque's peculiarities, and some other circumstances have caused a doubt to be cast on the authenticity of the *Walam olum*. The evidence adduced by Dr. Brinton, however, seems quite sufficient to show that it is a genuine Indian production, though its date and authorship are uncertain. Any one who will compare the symbols, or picture-signs, in this work, with those given by the native historian, Copway, in his 'Traditional history of the Ojibway nation,' will be satisfied that they belong to the same system of notation. In fact, of the fifty symbols depicted in Copway's book, about half appear in the *Walam olum*, either precisely the same, or with just such variations as might be expected in an independent work. These symbols are, in part, rude representations of natural objects, — sun, moon, and stars, man, snake, fish, river, canoe, and the like, — bearing, as might be expected, a certain resemblance to the curt pictorial outlines from which the Chinese characters were developed. Besides these, there are some purely conventional symbols, which are found both in Copway's book and in the present work, and which show that Indian inventiveness had already passed into the higher stage, in which ideas as well as objects are represented. A hollow square or parallelogram signifies 'great.' A circle with a point in the centre is the sign for 'spirit,' and, when made of unusual size, indicates 'the great spirit.' Four angular points jutting from it in opposite directions represent the cardinal points, and convey the meaning of 'the great spirit everywhere.' Thus the Lenâpé and the Ojibways were on the very verge of that Egyptian method of word-pictures which preceded the invention of the alphabet.

Each symbol of the *Walam olum* recalled to the mind of the record-keeper the verse or strophe of a chant. Thus, when he drew forth from his bundle of 'painted sticks' the one on which this symbol of the great spirit was depicted, he recognized it as indicating a well-known verse of five Lenâpé words, which are here given opposite the symbol, and which Dr. Brinton's version renders, "At first, forever, lost in space, everywhere the great Manito was." In about two hundred such strophes, indicated by as many symbols, we have the Lenâpé cosmogony set forth, followed by a history of the early wanderings of their people, and a list of ninety chiefs who successively held the headship of the tribe. Many interesting questions are raised by this history, which Dr. Brinton has not undertaken to answer; but he has supplied abundant materials and aids for students who desire, as doubtless many will, to pursue this attractive investigation.

His introductory chapters furnish a succinct account of the tribes of the Algonkin stock, and of their neighbors the Iroquois, whose history is closely connected with their own. The political constitution of the Lenâpé septs, their mode of life, their religious belief and ceremonies, their moral and mental character, are concisely but clearly delineated. Their language is carefully analyzed; and the existing sources, in print and manuscript, from which a knowledge of it may be obtained, are more fully recorded than has ever before been done. Certain disputed points in the later history of the nation are well discussed, though in some of these the author must expect to encounter opposing views. Throughout this introduction, and indeed in the whole work, the marks of great labor and of conscientious care are apparent. Evidence also is seen of the insight derived from long-continued study of the Indian character, customs, and languages. The volume will not merely be in itself a most valuable acquisition to all students of American archeology, but might well serve as a model for future inquirers who may have occasion to undertake similar researches.

KINGSLEY'S MADAM HOW AND LADY WHY.

WE once heard an eminent actor describe Charlotte Cushman as "a magnificent example of a style of acting now happily passed by."

Madam How and Lady Why, or first lessons in earth-lore for children. By CHARLES KINGSLEY. New York, *Macmillan & Co.*, 1885. 18°.