astronomical work analogous to that to which he gave his energies at Cordoba. He has already undertaken some longitude determinations, and arranged a time-ball, which is probably already giving daily signals, by which the shipping in the outer roads, twelve miles away, may correct and rate their chronometers.

I have spoken longer than I intended, but will make no apologies, for I know your friendly indulgence. It only remains to say for these Argentine scientific institutions, that I believe their success to be now assured; they will enter upon new and enlarged fields of usefulness, as indeed they ought, for the world moves; and, for myself, that the remembrance of this occasion and of your overwhelming kindness will be a source of pride to me through life, and to my children afterwards.

SEMITIC LANGUAGES AT HARVARD.

IN a programme of the Semitic courses given by Professors Toy and Lyon in Harvard university, we find the following statements interesting to the young student. The Semitic family (one of the two inflecting families of the world, the other being the Indo-European) is divided into two groups, in which the several languages are distributed as follows: —

- North-Semitic.
  - 1. Babylonian-Assyrian.
  - 2. Aramaic.
    - Classical Aramaic (Syriac).
    - Palmyrene.
    - Jewish Aramaic.
    - Samaritan.
    - Various modern dialects.
  - 3. Canaanitic.
    - Phoenician, older and later (Punic).
    - Hebrew, biblical and post-biblical.
    - Moabite, etc.
- South-Semitic.
  - 4. Arabic, classical, and modern dialects of the Bedawin, and of Egypt, Algeria, and Syria.
  - 5. Sabean, embracing several dialects.
  - 6. Ethiopic, and the modern related dialects, Amharic, Tigre, Tigriña.

The two groups differ from each other considerably in grammar and lexicon. A member of either is much nearer to its fellow-members than to any member of the other; thus, Assyrian is more important than Arabic for Hebrew lexicography, and Ethiopic and Arabic are of more value than Hebrew or Aramaic for Sabean. Still, all these languages have much in common with one another, and each throws light on the others.

The choice of a student will depend on his special aim. Aramaic is the simplest Semitic language in forms, is necessary for the study of the Talmud (Gemara), and contains material for biblical textual criticism, and for the ecclesiastical and secular history of the first sixteen or seventeen centuries of our era. Hebrew is indispensable for the critical study of the Old Testament and Talmud (Mishna). Assyrian is grammatically interesting, and valuable for the early history of western Asia, and for North-Semitic civilization in general. Phoenician exists almost wholly in inscriptions, — a few of which are of historical importance (B.C. 500–A.D. 150), — and in Latin transcription in the Poenulus of Plautus. Arabic has most fully preserved the old inflectional forms, is indispensable in the study of general Semitic grammar, and has a large and varied literature, of which the historical part is of great value, and the poetry interesting. Sabean, or Himyaritic, is found only in inscriptions, which have recently revealed the existence of an ancient and remarkable civilization in southern Arabia, and a language presenting noteworthy peculiarities. Ethiopic, nearly related to Sabean, is the language of the Christian period of the Semitic colony in eastern Africa. Its literature consists of a Bible translation, monkish chronicles, and versions of several important apocalyptic books. The grammar is remarkable for the symmetry of the verb. At present it has been replaced by various related dialects, one of which was the language of the late King Theodore of Abessinia.

No genetic relation between the Semitic and Indo-European families has yet been discovered. The lexicon of the one does not help that of the other, and only the most general connection exists between their grammars. It is only a seeming exception to this statement, where one language has borrowed from another, as is the case with the modern Persian and the Hindustani, a large part of whose vocabularies is taken from the Arabic, and the Eranian Huzvaresh, which has taken much from Aramaic. Turkish, a member of still another family, is similarly indebted to Arabic.

THE STONE AGE IN AFRICA.

AT the meeting of the Royal society of northern antiquaries, held April 14, 1885, L. Zinck gave an account of the discoveries hitherto made regarding the stone age of Africa. There was now no doubt that Africa had its stone age, as well as Europe. Both in the old cultivated land of Egypt and the well-known desert of Sahara, the inhabitants in their time had only instruments of stone; but he would speak only about the stone age of South Africa. About twenty years since, was made the first find of stone objects in the region of the Cape of Good Hope. We know now that the natives on the south-west coast of Cape-land, even at the end of the sixteenth century, paid extravagant prices for iron, and Magaelhens had before found the natives of Madagascar using weapons of iron. Relics of the stone age are also found among the Bushmen, who were driven back to the Kalabari desert, and whose arrow-heads were of stone. There are found in South Africa, from an ethnological point of view, three peoples, — the Kaffirs, Hottentots, and Bushmen, — who represent three waves of migration. The last are the oldest people of the land, and have in their time extended themselves far to the south, where, in the rocky hollows, they have left monuments of various kinds, executed with much ability. They were acquainted with perspective, and had an appreciation of caricature. The Hottentots later drove them back, but were themselves driven back by the Europeans and the Kaffirs. The last, who came from the north, began to encroach on the Cape territory

at the time of its discovery by Europeans. Although it is only twenty years since they began to make collections of the stone age in South Africa, so many specimens have been found, that an older and a younger stone age may be recognized. As yet have been found no objects of polished stone. For a few years past an English railroad-engineer residing at Natal, who had made many finds, has undertaken to examine all South Africa. From his researches, it appears that there are large quantities of stone implements, both in the sea near the Cape, in the alluvial layers at Natal, and in the mountains. It is impossible to fix the time of these stone objects. Kjökkenmöddings have also been found in many places, near Simonstown and Capetown, and masses where the Hottentots had burned lime from oyster-shells: these do not belong to the present natives, as the Kaffirs never eat shell-fish, and rarely fish. A find has also been made in the caverns, but nothing is known about it yet. In Basuto-land have been found arrow-heads of flint. From the older iron age the above-named engineer had found, in the layers of gravel near the rivers, and in large hills covered with forest, and in the diamond diggings at Kimberley, implements and chips at a depth of forty feet, where the diamonds occur. It may be concluded that the stone age dates very far back. This shows that the prehistoric ages are not periods of time, but states of development, — in the case of Africa there was a sudden rise from the stone to the iron age, without any intervening bronze period, — the result, not of development from within, but of commercial intercourse from without.

PARADISE FOUND.

The title of this book will attract attention, and find for it a wide sale. The mode of treatment, and the style too, are such as are most pleasing to the popular mind. The book is very ingenious and learned, but, as it seems to us, conceived and written in the spirit of advocacy rather than in the true scientific spirit. It is true, scientific, as well as every other kind of literature, is laid under contribution; but authorities are used — now a Huxley, and now a Winslow — with little discrimination; and thus conclusions are reached which a cautious science would not accept. Yet we believe the book may be read with profit, even by the scientific anthropologist.

There are few questions connected with man more deeply interesting than the place of his origin; for that he did originate in one place, and not in many places, is now generally admitted. After giving (we think at too great length) the various baseless speculations on this subject, the author states his own thesis; viz., that the cradle of the human race was a north-polar continent, now submerged; the submergence being coincident with what science calls the glacial epoch, and what universal tradition calls the deluge. This view, he contends, consistently explains and reconciles all traditions and all scientific facts.

He proceeds, first, to remove some obvious objections. The climate of polar regions is now unfavorable for human life, as witnesses the melancholy history of polar expeditions; but in miocene times, as shown by its luxuriant forests of temperate and subtropic species, it was wonderfully mild and equable. During this time, too, one or more large bodies of polar land, or perhaps a polar continent, existed where now only the ocean reigns. Good scientific authorities are cited for this belief.

The long polar night may be thought an objection: but he shows that this has been greatly exaggerated; that there is more day and less night at the pole than anywhere else, viz., six months full day, nearly four months twilight, and only two months full night. Add to this the full moon (which would be above the horizon during the polar night) and the auroras, and the polar man would have no reason to complain.

But the most important scientific contribution to his view is the probable polar origin of many existing species. From miocene times until now, there has been apparently a gradual though not uniform refrigeration of climate; and as a consequence a streaming southward, along all longitudes, of species successively originated by change of climate at the pole. This view, first brought forward by Professor Asa Gray, has been most distinctly formulated by Marquis de Saporta. Among the number thus originating and migrating, the author includes man; and he gives much good scientific authority showing that he is not alone in this belief. But the author, we think, overstates the facts. He seems to think all species originated in polar regions; but this is far from true. It is probably true that there has been from miocene times a streaming southward of species originating there, but undoubtedly many species and genera have been formed by modification in the course of migration. It is not impossible that man, too, if derivative in origin, may have been thus formed in the course of migration. This depends much on the time of his southward migration. If, as the author thinks, this took place in the quaternary, then he probably left his home as *man*, and the modifications have since gone only so far as to form races. This point requires more

Paradise found; the cradle of the human race at the north pole. By William F. Warren. Boston, *Houghton, Mifflin, & Co.*, 1885. 24+505 p., illustr. 8°.