

scarabs, figures, hearts, and so on, which are found in tombs. The names and figures of forty-six gods are next identified, and after them twenty-eight sacred animals. There are some interesting notes on coffins, followed by accounts of pyramids, mastabas, and tombs. A chapter contains particulars of Egyptian writing; and after some minor articles the book concludes with two lists, one of common hieroglyphic signs, and one of the determinatives most frequently observed. As the determinative is always the beginner's surest guide, this last list will probably be taken first by many readers. The scope and probable usefulness of this remarkably complete treatise will have been gathered from the above summary.

We now turn back to the middle of the volume. Dr. Budge cannot decide whether the art of mummifying was known to the aboriginal inhabitants of the lower Nile valley, or was imported from Asia by the first Aryan settlers. He speaks of the venerable stele of SHERA, a dignity of the court of SENEPTAH, the fifth king of the second dynasty, whose date is placed at about B.C. 4000. This monument is preserved at Oxford, but Dr. Budge ought to have mentioned here that a portion of it is in the Gizeh Museum. The French cataloguer of that collection omits all mention of the Oxford stele. So they are even; but each portion gives different items of information. On this monument SHERA prays the gods "to grant sepulchral meals," from which Dr. Budge infers "that the art of elaborate sepulture had reached a high pitch of perfection in those early times." He notes incidentally that a redaction was made in the reign of this king SENEPTAH of a medical papyrus, from which it is clear that the Egyptians were already possessed of anatomical knowledge sufficient to enable them to preserve the human body as a mummy or otherwise. MANETHO, the Ptolemaic chronicler, expressly states that TETA, the second king of Egypt, wrote a book on anatomy, and also studied the properties of drugs. His mother, SHESH, invented a hair-wash. Although, then, some form of mummifying must have been in use at a very early period, it does not follow that it was always practised. Bodies were sometimes preserved in honey, as, for example, that of Alexander the Great; and Dr. Budge quotes a gruesome story from ABEL EL LATIF, about the body of a child found in a jar of honey. The body of MYCERINUS, now in the British Museum, seems to have been wrapped in cere-cloth—if the Egyptians had honey, they also had wax. Skeletons of this ancient period usually fall to pieces when exposed to the air. The oldest mummy, strictly so called, which has been identified, is that of SEKER-EM-SA-F, B.C. 3200, a king of the sixth dynasty, which is now at Gizeh. A few fragments of the mummy of UNAS, of the fifth dynasty, are in the same collection—part of the skull, only, and a hand. As to mummy cloth, Dr. Budge corrects a prevalent error. Almost all the older writers asserted that mummies were wrapped in cotton. JOMARD thought linen was also used; but a learned Fellow of the Royal Society, having obtained, in 1834, four hundred specimens of bandages, ascertained that they were all of linen. A piece of fine texture was found to have five hundred and forty threads to the inch in the warp, and one hundred and ten in the woof. Nobody who has seen the wrappings, of a delicate salmon colour, which were in the coffin of THOTHMES III., can forget that they were as fine as the finest lady's handker-

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chief of the present day. Dr. Budge's views on the subject of pyramids will not tally with those of numerous very worthy persons now, we may hope, of a more reasonable mind. In Cairo, a very short time ago, the only book on pyramids to be had by tourists was that of the late Scottish Astronomer Royal, which was written to prove that the Great Pyramid was erected to embody the truths of revealed religion. Dr. Petrie's book was nowhere to be seen. Now all is changed. Messrs. Cook and Son employed Dr. Budge to write a little book on the Nile voyage, a copy of which is in the hands of every tourist, and the pyramid inch and the great passage theory have become curiosities of history. Dr. Budge says briefly, "the royal tombs of the early dynasties were built in the form of pyramids, and they are, to all intents and purposes, merely mastabas."

ESKIMO LIFE.

Eskimo Life. By Fridtjof Nansen. Translated by W. Archer. 350 pp. (London: Longmans, Green and Co., 1893.)

WHEN Dr. Nansen reached the west coast of Greenland, after his memorable journey across the continent, he found that the last ship of the year had left for Europe, although he had altered his plans and steered for Godthaab instead of the more northerly Christianshaab, partly in order to avoid being detained in the country during the winter. He was, however, compelled to spend the winter among the Eskimos, and his observations and reflections on the character and everyday life of the race are embodied in the book before us.

Dr. Nansen admits the impossibility of attaining a complete and thorough knowledge of so peculiar a people in so short a time as one winter, but his own experiences and impressions have been supplemented by reference to the writings of all the most competent authorities—the Egedes, Crantz, Rink, Holm, and others.

The early history of the Greenland Eskimo is obscure, and anything like certainty dates back no further than 1721, when Hans Egede, the Norwegian missionary, took his wife and children, and settled on the west coast with a view of improving and civilising the native race. From that time to the present, however, the history of the people is well known, and a study of this period affords one of the best examples of the development and changes which so-called lower races undergo, when subjected to the influence of western European civilisation.

The first part of Dr. Nansen's book is concerned with the daily life of the modern civilised Greenlander, and the chapters on the kaiak, or skin-boat, and the weapons used in hunting the seal and other characteristic game of the Arctic seas are excellent.

It is interesting to note that this section of the Eskimo race use the throwing-stick, which enables them to throw the harpoon and bird-dart with greater force and accuracy than with the unaided arm alone. This instrument is only met with among two or three races of men, so widely separated from each other as to preclude the idea of a common origin of the invention.

The character and social life of the people is portrayed in three or four of the succeeding chapters. [Little

acquaintance with the writings of Nansen is necessary before it is seen that he possesses a flexibility of mind and deep sympathies which enable him to enter into peculiar touch with a race of this character.

Chapter xiii. deals with the religious ideas and myths of the Eskimo. This part of the volume is necessarily second-hand; but so far as the facts are concerned, nothing remains to be desired. It seems to us, however, that there is too great a tendency to look upon these legends and tales as matters derived from foreign influence, notably that of the early Scandinavian explorers, from the time of Erik the Red (986 A.D.) to about 1400 A.D. There is some similarity between the legends of the Scandinavian and the Eskimo, but Dr. Nansen, in dealing with the origin of those possessed by the latter, does not apparently allow enough for the possibility of spontaneous growth of the same idea in two widely separated races. The Vikings have had little influence upon the daily life of the Greenlander, and it is very improbable that the latter would borrow recondite philosophy, or lore of any kind, from the former.

If true similarity does exist in such cases, it is more likely to be due to the inherent similarity of the powers of the human mind to invent explanations for incorrectly understood phenomena.

In the concluding chapters are given the results which have been achieved since the introduction of Christianity 150 years ago. The first European settlement found a people who were nearly blameless, full of practical socialistic sentiment, generous and open-hearted, truthful, private property almost unknown, poverty non-existent, able to live peacefully and contentedly in surroundings in which Europeans, with all modern resources, are taxed to the utmost to exist through winter, healthy and full of patience. To-day disease, poverty, and distress are abundant. These changes, which must be looked upon as bad for the Eskimo, whatever the intentions of the settlers may be, are brought about by causes which are to a large extent obvious, and Dr. Nansen's advice to all those who have the welfare of the native race at heart, is to leave the country, and allow the people to make the shortest cut back again to their pristine state.

The translator's work has been admirably done.

J. P.

OUR BOOK SHELF.

La Voie Lactée dans l'Hémisphère Boréal. By C. Easton. With a preface by Prof. H. G. van de Sande Bakhuizen. (Paris: Gauthier Villars et Fils, 1893.)

THE Milky Way, "that broad and ample road, whose dust is gold and pavement stars," almost defies accurate delineation. Its irregular outlines and indefinite structure tease the eye of the artist, and renders his task most difficult. In all probability the largest amount of information with regard to this celestial zone "powdered with stars" will be obtained from photographs taken by means of portrait lenses having a wide field, similar to that employed by Prof. Barnard for his beautiful pictures. There is much to be gained, however, by the multiplication of maps such as those of M. Easton, in which the aspect of the Galaxy to an observer having normal eyesight is shown. The maps are finely drawn and reproduced, and well show the delicate gradations of galactic light. A detailed descrip-

tion and historical notice give the atlas additional interest, while a catalogue of the patches and streams of luminosity, and the dark regions, will be of use to those who theorise on the structure of the stellar universe. A comparison of the maps with those drawn by Boeddicker reveals many differences, but it cannot be said on this account that either of the observers is wrong. No two observers have eyes exactly alike, or are favoured with precisely the same observing conditions, hence drawings of the Milky Way, like those of nebulæ, simply represent the appearances presented to certain visions, and are only approximations to the truth. M. Easton's maps are published in a very handy form, and may be added with advantage to every astronomical library and observatory.

An Elementary Treatise on Analytical Geometry. By W. J. Johnston, M.A. (Oxford: Clarendon Press, 1893.)

IN these 400 pages Mr. Johnston has ably succeeded in producing a very excellent treatise which leads the beginner by easy stages from the first principles of the subject to the more complicated theorems in trilinear coordinates. In the first ten chapters the student is made thoroughly familiar with the properties of the Ellipse, the Parabola, and the Hyperbola, after having been well exercised in the more preliminary parts of the subject as regards co-ordinates, the straight line, loci, &c. In these chapters it seems that the beginner can hardly fail to obtain a thorough grip of their contents, unless indeed he goes out of his way to do so, for more details could hardly be added. The numerous worked-out exercises should also be valuable, as they show him how to apply the knowledge gained from the various theorems learnt as book work. The next three chapters deal with the general equation of the second degree, conical conics, and abridged notation, the last-mentioned including a large number of miscellaneous exercises; in these may be mentioned some additional methods of tracing a conic whose Cartesian coordinates are given, and an investigation of the equation of a diameter due to Prof. Purser. The remaining chapters treat of trilinear coordinates, envelopes, and methods of transformation. Here may be noticed Prof. Genese's proof of Feuerbach's theorem, Pascal's theorem, and many others of interest.

As an elementary book one may say that, from a beginner's point of view, we have here a sound and clearly written volume that will be sure to find favour with students and teachers. Perhaps it may be better for those commencing the subject to pursue the limited course recommended to them by the author, but a little more of an insight will show them what to read. Advanced students will also find much of interest in the latter chapters, and to them we can specially recommend the working out of some of the numerous and well-chosen examples.

Zur Kenntniss der Postembryonalen Schädelmetamorphosen bei Wiederkauern. By H. G. Stehlin. (Basel: Benno Schwabe, 1893.)

THIS publication deals with a branch of osteology which up to the present time possesses no special literature of its own, and is an attempt to trace the changes which take place in the skulls of ruminants from the time of birth up to adult age. The skulls of Bos, Capra, and Portax are studied in a most exhaustive manner at different ages, and comparisons drawn; elaborate measurements being given in every case. Special attention is paid to the effects produced by the development, final size, and position of the sinuses, teeth, and horns; also, the differences between the skull at birth and at adult age are considered in relation to rate of growth of the animal, and its length of life. In the last chapter the three types, Bos, Capra, and Portax, are contrasted with each other, and a number of other forms described, their relations to these types being indicated.