ful a study to work out the effects of isolation, hybridization and climate on brambles as to test the effects of various alkaline salts on the eggs of a starfish. Good work counts, whatever its subject matter.

Professor Edward Strassburger discusses the "Minute Structure of Cells in Relation to Heredity," claiming with Darwin that "invisible gemmules are the carriers of hereditary characters, and that they multiply by division." This hypothesis he implies might have been developed by Darwin, had not his genius been "confined by finite boundaries by the state of science in his day." The "Descent of Man" is discussed by Professor G. Schwalbe. In this regard, he considers that Darwin's work is unsurpassed. "The more we immerse ourselves in the study of the structural relationship between apes and man, the more is our path illumined by the clear light radiating from him."

Professor Ernst Haeckel treats of "Darwin as an Anthropologist," in like sympathetic fashion.

Mr. J. G. Frazer discusses "Primitive Theories of the Origin of Man." Professor Adam Sedgwick discusses the "Influence of Darwin on the Study of Animal Embryology." Professor W. B. Scott treats of the "Paleontological Record as Regards Animals," and Mr. D. H. Scott, as regards plants. Professor George Klebs treats of the "Influence of Environment on the Forms of Plants," and Professor Jacques Loeb on the "Experimental Study of the Influence of Environment on Animals." Professor Edward B. Poulton emphasizes the value of color in the struggle of life. Sir William Thistleton Dyer treats of the "Geographical Distribution of Plants," and Dr. Hans Gadow of the "Geographical Distribution of Animals." Mr. J. W. Judd discusses "Darwin and Geology," and Mr. Francis Darwin, "Darwin on the Movement of Plants." Professor K. Goebel has an essay on the "Biology of Flowers," Professor C. Lloyd Morgan one on "Mental Factors in Evolution," and Professor Harald Höffding one on the "Influence of the Conception of Evolution on Modern Philosophy." Professor C. Bouglé discusses "Darwinism and Sociology," Rev. P. N. Waggett, the "Influence of Darwin on Religious Thought." This influence Mr. Waggett finds "from a Christian point of view, satisfactory," as all movements toward truth ought to be. It may be an "advance of theology" when theologians retreat. Mr. Waggett thinks that a "bolder theism" is now needed, and now justified.

Dr. Jane Ellen Harrison treats of the "Influences of Darwinism on the Study of Religions." The scientific study of religions begins with the Darwinian conceptions. Dr. P. Giles discusses "Evolution and the Science of Language." Professor J. Bury writes luminously on "Darwinism and History"; Sir George Darwin on the "Genesis of Double Stars," and Mr. W. C. D. Whetham has the final essay on the "Evolution of Matter." He doubts whether such cases of atomic disintegration as we now know can be characterized as "Evolution," and the question whether primeval matter was more or less complex, or both, than the matter of to-day, is still unsettled.

Through all these essays and addresses runs the vein of veneration for Darwin the man. The words used by the present writer in 1882, he still finds pertinent:

> Darwin lies in Westminster Abbey, by the side of Isaac Newton, one of the noblest of the long line of men of science whose lives have made his own life possible. For every truth that is won for humanity takes the life of a man. Among all who have written or spoken of Darwin since he died, by no one has an unkind word been said. His was a gentle, patient and reverent spirit, and by his life has not only science, but our conception of Christianity, been advanced and ennobled.

David Starr Jordan

THE FAUNA OF CHILE

Professor Carlos E. Porter, C.M.Z.S., director of the Natural History Museum of Valparaiso and of the "Revista Chilena de Historia Natural," is about to publish the first volume of a new work which bears the title of "Fauna de Chile," being a methodical and descriptive catalogue of the animals living in the Republic of Chile.

This work has been in preparation for a

number of years and the volumes II. to X. (large octavo) are to be published as soon as the manuscript of each is finished, with the assistance of numerous European and American specialists. This work, being thus brought up to date according to modern standards, will be indispensable to all museums and libraries of natural history.

Volume I. will contain the mammalia, by Mr. John A. Wolffsohn, C.M.Z.S., with numerous original illustrations in black and colored plates and photo-engravings in the text.

M. J. R.

NOTE ON THE OCCURRENCE OF HUMAN REMAINS IN CALIFORNIAN CAVES

IN the course of an investigation of some of the limestone caverns in California during the last four years, a number of cases have been noted in which human remains were found in such situations as to indicate that their entombment was not of historically recent date. In no instance have any specimens been discovered which can be said to be of Quaternary age, although some of the occurrences are of such nature that it would be difficult to prove that the remains were buried during the present period.

The writer has already called attention[1] to the occurrence of human remains in Mercer's Cave in Calaveras County, and in the Stone Man Cave in Shasta County, under conditions which certainly suggest a considerable antiquity. In Mercer's Cave a number of human skeletal remains were found in close proximity to the bones of a Quaternary ground-sloth. The bones of both sloth and man were incrusted with a deposit of stalagmite, the incrustation on the sloth bones being considerably thicker than that on the human remains; and it is not probable that they were buried at the same time. It is, however, true that stalagmite deposits may be very uneven, and it is possible that the covering on the ground-sloth was formed in a shorter time than the thinner layer on the human bones.

The remains in Stone Man Cave were discovered in a remote gallery of this extensive cavern. The greater number of the bones were embedded in a layer of stalagmite which enveloped them to the thickness of one eighth of an inch or more. A vertebra which was obtained many years ago from this locality is found to have lost most of the organic material, and the cavities are largely filled with calcite crystals.

In neither of the cases just described is it possible to fix the age of the remains, but the impression given in both instances is that some centuries have elapsed since the skeletons came into the position in which they were found.

Another interesting occurrence of human bones has recently been brought to the notice of the writer by Dr. J. C. Hawver, of Auburn, California. During the past few years Dr. Hawver has engaged in an energetic exploration of the limestone caves in the vicinity of Auburn, partially at the instance of the University of California, but largely on his own resources. Hawver Cave, discovered by him and recently named in his honor, has been explored and described by Mr. E. L. Furlong,[2] but Dr. Hawver has continued the exploration of this cavern farther than it was carried by the university. In March, 1908, while attempting to open what Dr. Hawver supposed to be an ancient passageway into the lower cave, a number of human bones were found at a depth of twenty feet below the surface, under a mass of cave earth, fallen rocks and soil, over twelve feet in thickness. The remains lay at the lower end of a passageway which has evidently been closed for a long period. In this case, as in that of Mercer's Cave, remains of extinct animals undoubtedly of Quaternary age were found near the human bones, but the degree of alteration of the unquestionably Quaternary bones differs from that in the human skeletons. Some of the human bones were embedded in a cemented breccia consisting largely of angular fragments of limestone. So far as examined the bones seem to have lost most of their organic matter. A fairly preserved skull in the collection does not differ strikingly from the crania of the

[1] "Recent Cave Exploration in California," *American Anthropologist*, N. S., Vol. 8, No. 2, p. 221.

[2] Furlong, E. L., SCIENCE, N. S., Vol. 25, p. 392.