molecular and atomic weights, the periodic law, valency, the constitution of chemical compounds, physical isomerism, density, fusion, refraction, solution, crystallization, diffusion, evaporation, constitution of gases, relations of heat to chemical change, dissociation, electrolysis, migration of ions, speed of chemical change, action of mass and avidity. The following sentences are from the concluding paragraph: "We have gradually receded from the idea of a static state of equilibrium of the atoms, brought about by their powers of affinity, and we now consider the atoms and the molecules, which are built up of atoms, as particles in an active state of movement. Their relations to each other are essentially determined by the magnitude and form of their movements. Chemical theories grow more and more kinetic."

Some Americans, at least, will dissent from the judgment of the author in still making the atomic ratio H : O equal to 1 : 15.96; but it may well be hoped that this well-balanced compend of leading theories, in its English dress, will widen the interest already shown in the philosophical aspects of this science. R. B. W.

Deafness and Discharge from the Ear. By SAMUEL SEXTON, M.D. Assisted by Alexander Duane, M.D. New York, J. H. Vail & Co. 89 p.

THE object of the writers of this small volume is to bring before the profession the merits of the operation of excision of the drum membrane and ossicles in cases of chronic deafness from catarrh. The theory of the operation is stated at length, and a number of cases in which it has proved successful are reported. It would have been more satisfactory if a complete tabulation of all cases had been offered, so that a more accurate estimate could have been formed as to results. From what is stated, however, the procedure is clearly one of much service in some instances.

Human Origins. By SAMUEL LAING. Illustrated. London, Chapman & Hall, 1892.

THIS is an exceedingly well-written and interesting summary of all the theories, facts, and mysterious questions connected with the origin of mankind on earth, by a somewhat remarkable man, whose previous works, "Problems of the Future" and "Modern Science and Modern Thought," met with a wide circulation in England. The author, Mr. Samuel Laing, the son of the translator of the Norse Sagas, comes of a good old Scottish family and was second wrangler of his year. Well-known in the House of Commons as "the member for the Orkneys," Mr. Laing twice served in Mr. Gladstone's administrations, as finance minister to India and financial secretary to the treasury, and is now the president of a prosperous English railroad. This veteran of finance and affairs has always found solace and delight in the study of abstruse scientific problems of the day. His various publications present the results of wide and discriminating reading and research, in a logical, concise, yet comprehensible style for the benefit of those who have not the time to look into such matters for themselves.

In the present volume Mr. Laing deals first with the abundant evidences of the existence of civilized man upon earth at least a thousand years before the date of the creation of the world as given by theological chronologists. A clear outline is presented of the condition of religion, art, science, and agriculture of "Old Time," as revealed by the earliest monumental records and inscriptions of ancient Egypt, Assyria, and Chaldea. These alone afford convincing proof of the great antiquity of civilized man and of the existence of a high grade of culture at the earliest dawn of the historical period, which was preceded by legendary ages of less duration and by the long-forgotten antecedent neolithic era and remoter epoch of palæolithic man.

The evidences of science are then considered as revealed in geological and palæontological records of the past. The effects of the glacial period, Croll's theory of its cause, and Quaternary, Tertiary, post-glacial, and inter-glacial and pre-glacial man are discussed in turn. The geological data from the Old and New Worlds, favorable and opposed to the antiquity of man, are stated with clear impartiality. The author seems well acquainted with the works of American scientists such as Abbott, Morton, Brinton, Wright, Whitney, and Shaler. He shares, however, in the prevalent confusion with regard to the Toltecs. His main argument is governed by the force of the logical postulate of continuous evolution. "No one now believes," he writes, "in a multiplicity of miracles to account for the existence of animal species. Is man alone an exception to this universal law, or is he, like the rest of creation, a product of what Darwinians call evolution, and enlightened theologians 'the original impress?'" He is therefore led to the conviction of the great antiquity of the human race. He would seek for human origins at least as far back as the Miocene period, and search in the earliest Eocene strata for the collateral ancestors both of the existing races of mankind and surviving species of anthropoid apes. "With this extension of time," he concludes, "the existence of man, instead of being an anomaly and a discord, falls in with the sublime harmony of the universe, of which it is the dominant note."

The volume is well illustrated from varied and modern sources. There are a few obvious misprints, such as Tyler for Tylor, trilateral for triliteral, Mortillot for Mortillet; which will doubtless be corrected in the forthcoming second edition. The first is already exhausted. AGNES CRANE.

Brighton, England, Aug. 1.

Essays upon Heredity and Kindred Biological Problems. By DR. AUGUST WEISMANN. Authorized translation by Messrs. Poulton, Schönland, and Shipley. New York, Macmillan & Co. 2 vols. 8°.

THOSE who have followed the active discussion of the remarkable investigations and stimulating hypotheses of the author of these volumes will not expect in this place a review of the works which have made his name famous even among those who have not been willing to accept all his conclusions. Such a review would be inadequately accommodated in a volume as large as either of those which are mentioned here. It would amount to a summary of existing biologic theory, which is being added to daily, almost hourly, and from which the teaching effect of time daily dissolves away some misconception or superfluity. In common with the great body of American naturalists we believe that the most talked-about strand in Weismann's woof of hypothesis — the assertion of the non-transmission of acquired characters — is not only an erroneous but an entirely unnecessary assumption, an assumption which, carried vigorously to its necessary conclusions, may well be termed the key-note of a genuine "gospel of despair." This assumption at present is upheld chiefly by a sort of circular argument which explains the "acquired character" to be one acquired by the body solely, exclusive of the reproductive plasma, while any character which is shown to be transmitted is put out of court as having been acquired by the "whole organism." But whatever be the fate of any of these special views, either of Weismann or his opponents, there can be no question as to the great importance of the questions involved, or of the scientific, honorable, and impartial spirit in which the great German naturalist has discussed them.

While many of the problems concerned are strictly scientific and to be adequately discussed by trained naturalists alone, some of the questions, and the conclusions which result from all, are of the utmost importance to every philosopher, theologian, and sociologist. It is therefore a matter for general congratulation that the essays in question have been put into English in a form which excludes all doubt as to the adequacy of the translation or the faithfulness with which his ideas have been presented.

The work appears with the well-known elegance of the Oxford Press, and should find a place in every working library.

Darwin, and after Darwin, an Exposition of the Darwinian Theory, and a Discussion of Post-Darwinian Questions. By GEORGE JOHN ROMANES. I. The Darwinian Theory. Chicago, Open Court Publishing Co. xvi., 460 p. 8°.

This treatise, the first of two contemplated volumes, has grown out of a series of lectures delivered before the University of Edinburgh, and is devoted to the general theory of organic evolution as Darwin left it. As these lectures were delivered to learners, and in their present form are intended for the general reader, the author states that he has been "everywhere careful to avoid assuming even the most elementary knowledge of natural science"